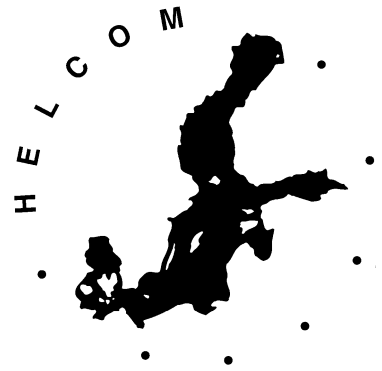
HELSINKI COMMISSION

Baltic Marine Environment Protection Commission



Harmonization of HELCOM Recommendations with EU Directives and OSPAR Decisions and Recommendations

Final Report

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Harmonization of HELCOM Recommendations

with EU Directives and

OSPAR Decisions and Recommendations

by

The Finnish Environment Institute

for

HELSINKI COMMISSION

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Harmonisation of HELCOM Recommendations with EU Directives and OSPAR Decisions and Recommendations

Contents

1. INTRODUCTION

HELCOM Recommendations issued by the Technological Committee (TC) include a wide variety measures to be implemented starting from a Amacro@ approach -industry, municipalities, agriculture, transport to also a Amicro@ one, where the focus is on individual hazardous substances and products containing such substances.

The Recommendations have been adopted during almost two decades. Therefore it is natural that some measures required are outdated and some are overlapping with contents of new Recommendations and the Helsinki Convention 1992.

At present the reporting on the implementation of the Recommendations is very time consuming and requires a lot of resources. Contracting parties send plenty of information to the lead country of the respective Recommendation. Nevertheless, the lead country has often difficulties to interpret the reports due to different practices and applied measures in different countries. The Contracting Parties have also reporting obligations for other international institutions they are part of. Major institutions setting reporting obligations are the European Union, the OSPAR Commission for Protection of the Marine Environment in the North East Atlantic and European Economic Commission of the United Nations (UN/ECE). Many international reporting requirements are similar to the HELCOM reporting duties. In many cases there is however a slight technical difference in the reporting obligations of different institutions thus causing the time consuming need to modify the data a bit for each reporting system.

HELCOM LAND gave the Finnish Environment Institute a consultation task to come forward with a proposal for revision of the TC Recommendations and their reporting formats during the year 2000. The Contracting Parties had an opportunity to comment the draft proposal twice during the elaboration. HELCOM LAND 2 meeting in St. Petersburg in November 2000 received the proposal and approved the general approach and most of the proposals. The meeting also concluded that the proposals of this report should be taken into account in the further elaboration of the Recommendations (see chapter 3.7.5 for details).

2. AIM OF THE PROJECT

2.1 THE GENERAL OBJECTIVE

The overall objective of the project was to come up with proposal for revision of the HELCOM Recommendations and their reporting formats issued by the Technological Committee (see Attachment 1). The revision was to be carried out in order to focus on issues most important for the Baltic marine environment and to avoid overlapping or contradictory work both within HELCOM itself and with other fora. The report "Comparison of HELCOM Recommendations with EU Directives and OSPAR Decisions and Recommendations" (Milieu Ltd 1999) was the starting point for this work.

2.2 THE APPROACH AND TASKS ASSIGNED TO THE PROJECT

The requirements in HELCOM Recommendations and the corresponding reporting formats issued by the Technological Committee were to be carefully scrutinised and assessed. The project included the identification and examination of: **1)** discrepancies and overlapping between requirements in HELCOM Recommendations, EU legislation and OSPAR measures; **2)** how the existing and upcoming EU legislation and other requirements or guidelines (e.g. BAT reference documents) influence water pollution issues; **3)** requirements and overlapping of different HELCOM TC Recommendations and Helsinki Convention 1992; **4)** the implementation status of the Recommendations.

The tasks for the revision of the Recommendations included (agreed in HELCOM LAND 01/00)

- deletion of the parts overlapping with the Helsinki Convention 1992,
- deletion of the parts existing in more than one Recommendation,
- modifying the Recommendations in order to eliminate the *technical* discrepancies between the Recommendations, EU legislation and OSPAR measures,
- leaving the substantial contents (e.g. limit values) of the Recommendations unchanged unless very necessary,
- proposing deletion or substantial revision of the Recommendation if the old Recommendation was obsolete as being generally implemented in all Contracting Parties.

Tasks concerning the revision of reporting

- to reduce the reporting load and focus on compiling relevant information sufficient to:
  1. assess the implementation of the Recommendations and
  2. get a reliable and comparable picture of the emission levels from relevant sectors
  3. assess the effectiveness of the Recommendations.
- to harmonise HELCOM reporting with EU and OSPAR reporting where appropriate. HELCOM Recommendations require often reporting of similar issues as EU and OSPAR. Taking into account that several of the Contracting Parties of HELCOM also have to report to EU and/or OSPAR it is important that information collected can be used in all fora as far as possible in order to avoid double work.

A summary of the outcome of these analyses are presented in the following chapter. The proposed revised HELCOM Recommendations and detailed rationale are presented in the separate chapters for each sector.

3. EXECUTIVE SUMMARY

3.1 OVERVIEW OF HELCOM TC RECOMMENDATIONS

The HELCOM Recommendations issued under the Technological Committee comprise of 19 industrial Recommendations (which can roughly be divided into 11 industrial sectors), 5 Recommendations concerning urban waste waters, 10 agricultural Recommendations, 8 Recommendations on production control measures, 2 Recommendations on transport and 5 other various Recommendations (see Attachment 1).

The Recommendations have been adopted during almost two decades and therefore they contain overlapping and/or outdated requirements. Some of the requirements in the Recommendations are today also covered by the provisions of the Convention. The requirements of Convention are more binding to the Contracting Parties than the separate Recommendations and therefore several Recommendations have become obsolete. For example 8 out of 10 Recommendations concerning agriculture are regarded as almost fully covered by the amended Annex III of the Convention. There are also 3 Recommendations on general requirements for industries the provisions of which are covered by the Convention. These Recommendations are proposed to be deleted. The deletion will however create a problem of how to assess of the implementation of the requirements in these fields as there is no reporting system developed for the provisions of the Convention. It is nevertheless stated in the Convention that Contracting Parties shall report at regular intervals on e.g. the legal, regulatory or other measures taken to implement the provisions of the Convention (Article 16). It is therefore proposed that the Land Based Pollution Group should elaborate a reporting system concerning different provisions on land based pollution in the Convention.

3.2 OVERVIEW OF THE COMPARISON WITH THE EU REQUIREMENTS

EU has adopted several Directives concerning **water quality, pollution control and air emissions** for different sources. The structure and purpose of EU Directives differ, however, significantly from HELCOM. The Directives contain for example few limit values for specific point source sectors. There are limit values adopted in 17 Daughter Directives for List I substances of the Dangerous Substance Directive 76/464/EEC. Most of these are outdated and have been taken into account in HELCOM Recommendations. The Urban Waste Water Treatment Directive 91/276/EEC contains limit values which are similarly formulated as HELCOM requirements in this sector. The recently agreed Water Framework Directive will change the water management significantly in the EU and might lead to the elaboration of even sector based emission controls in the future. The EU Directives focus however more on legislative and administrative requirements and authorisations of emissions and their implementation. The industrial HELCOM Recommendations contain more sector specific limit values and requirements for application of different (even detailed) pollution control measures.

The BAT Reference documents elaborated under the IPPC Directive 96/61/EEC (hereafter called EU BREFs) contain a lot of such valuable information on different sectors with achievable emission ranges, but they do not include e.g. limit values. For example in the BREF for Pulp and Paper Industries a list of techniques to be considered in the determination of BAT is described for different types of production. The BAT levels (e.g. emissions to water) that are associated with the use of a suitable combination of the listed techniques are presented as

ranges. The lower limit of the range typically represents the best achievable value under economically and technically viable conditions. The upper limit is often more vague illustrating the situation where the current BAT criteria is still fulfilled and the level is acceptable to be labelled as BAT. Due to the definition criteria of the lower limits they typically go well under the corresponding limit values in the HELCOM Recommendations which are to be fulfilled by every mill for waste water discharges. It seems that the information in the BREFs can and should be used in the elaboration and updating of HELCOM Recommendations, but the work cannot be transferred to EU totally in the sectors covered by the IPPC Directive.

The HELCOM **product control measures** have some kind of counterparts in the EU legislation except the Recommendation 6/4 on mercury from dentistry (partly covered by the 76/464/EEC). The product control measures in the EU legislation are in most cases presently slightly stricter than the corresponding HELCOM Recommendations. The major Directive covering most of the HELCOM product control measures and restrictions of use of hazardous substances is the Directive 76/769/EEC "on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations" with its numerous amendments. The significant difference between HELCOM product control Recommendations and the EU is structural. The single HELCOM Recommendation tries to regulate almost the whole life cycle of a substance used in a product(s) whereas in the EU the regulation aimed at decreasing the emissions of a substance is splitted in separate legislation sectors which tackle each life cycle phase of the substance respectively (e.g. chemicals, point source pollution, waste management and eco-labelling).

3.3 OVERVIEW OF THE COMPARISON WITH OSPAR REQUIREMENTS

OSPAR has issued several Recommendations/decisions in the same field as HELCOM and some are even identical or almost identical with slight differences in the strictness of e.g. limit values. For example the HELCOM Recommendation on metal surface treatment has the same requirements with the difference that OSPAR has stricter limit values for some metals and the BAT for the sector is more extensive. Most of the OSPAR Recommendations and Decisions however do not always cover the same aspects as HELCOM or they are more specific, which means that harmonisation would also require substantial changes in the HELCOM Recommendations. For example the HELCOM Recommendation on chemical industry is very general covering a wide variety of different chemical industries while OSPAR has requirements separately for organic chemical industry and the pharmaceutical industry. There are certain advantages to keep the general HELCOM Recommendations as the situation in HELCOM Countries differ significantly and a common understanding on specific questions for each branch (e.g. BAT, limit values) could be hard to reach. Despite the general contents of a HELCOM Recommendation, the reporting could however be divided into those different subcategories which are covered by that Recommendation, if necessary.

3.4 OVERVIEW OF THE REPORTING REQUIREMENTS

At the present the contracting parties send a lot of information to the lead country of respective Recommendations. The lead country's responsibility is to compile this often very detailed information and to draw conclusions how the Recommendation is implemented and complied within each country. It is often very difficult for the lead country to interpret the reports due to different practices and applied measures in different countries as well as due to the incompleteness of the reports. Even if a Recommendation itself contains a lot of detailed (in

itself justified) requirements it may be questioned whether it is fruitful to report this information every three years and send it to the lead country to be assessed. It seems that the countries themselves would be in better position to assess the state of implementation of each Recommendation in their own country and to describe the reasons for non compliance of a Recommendation.

HELCOM reporting of the **industry and other point source Recommendations** includes information on waste water concentrations for different parameters and applied technologies for the reduction of emissions and discharges. The reporting of the implementation of present EU water Directives is more focused on information of authorisations, limit values in permits, water quality monitoring and legal aspects and in fact there is little in common with HELCOM TC Recommendations. The new Water Framework Directive will change the EU reporting and will increase sectorwise pollution load reporting for River Basins in Europe.

Furthermore, the foreseen reporting of the IPPC Directive will not be of much use for HELCOM purposes according to the Commission Decision of 17 July 2000 (EPER; The implementation of the European Emission Register according to Article 15 of the Council Directive 96/61/EC). According to the Decision, only total emission loads are to be reported with very high threshold values. No reporting of specific loads (kg/ton product) is foreseen. If a regular reporting system will be developed for applied BAT measures and corresponding emission levels, there should/might be a possibility for harmonisation of reporting procedures.

OSPAR decisions and Recommendations include similar reporting requirements and some of the information generated for some sectors are already suitable for both fora. With some amendments made to HELCOM Recommendations there is a possibility to synchronise reporting further (e.g. for pulp industry).

HELCOM reporting requirements in the **product control** Recommendations have included information on the administrative measures, e.g. on use or marketing restrictions, information on the product types on the market, waste collection and treatment and amounts of products or substances used. Reporting requirements of the corresponding EU Directives have required mainly to provide information on the legal and administrative implementation to the European Commission. This type of reporting is tied to the implementation schedule and thus no regular reporting rounds exist. Only the Plant Protection Products Directive 91/414/EEC has more detailed and regular reporting requirements. OSPAR does not have as detailed or regular reporting requirements for product control measures as HELCOM. To conclude, the revision of the HELCOM reporting requirements of the product control measures does not need much harmonisation with other international reporting requirements but rather slight changes to serve the monitoring of the present implementation status.

As a whole it seems that there are better possibilities to harmonise reporting of HELCOM Pollution Load Compilation (PLC) with other fora than what is the case with TC Recommendations. PLC requires sectorwise pollution load reporting similar to eg. EEA, the forthcoming Water Framework Directive reporting and the foreseen IPPC Directive reporting. For airborne emissions there is not much to harmonise between HELCOM Recommendations and eg. UN EMEP, LR TAP, ECE or EEA CORINAIR etc. HELCOM should actively try to influence the development of reporting in other fora by establishing contacts and co-operation. The reporting is a very actual issue as the discussion and development of reporting procedures is ongoing in the EU for the WFD and the “old” water Directives (76/464 etc) as well as the IPPC Directive.

3.5 SUMMARY OF PROPOSALS FOR THE REVISION OF HELCOM RECOMMENDATIONS

The Recommendations are proposed to be revised as follows. The detailed proposals for the revised Recommendations and the reasoning for them are found in the chapter 4.

A. The following Recommendations are proposed **to be merged** together into one Recommendation in order to reduce the number of Recommendations and to avoid overlapping and repetitions.

- $ Pulp and paper industry: Recommendations 16/4, 17/8 and 17/9
- $ Iron and steel industry: Recommendations 11/7, 13/4 and 17/5
- $ Stormwater: Recommendations 5/1 and 17/7
- $ Municipal wastewater treatment: Recommendations 7/3, 9/2 and 16/9
- $ Fish farming: Recommendations 18/3 and 20/1
- $ Mercury: Recommendations 6/4 and 18/5.
- $ It should also be considered that two Recommendations on chemical industry could be merged together, (14/2 on the formulation of pesticides and 20E/2 on chemical industry in general). This issue has not been discussed during the project, but lead country Germany could take this into consideration when elaborating further proposals.

B. The following Recommendations are proposed **to be deleted because** they are either completely covered by the provisions of the Convention 1992 or other Recommendations or they have been totally implemented in the Convention Area.

- $ General principles for industry: 9/8, 13/2 and 13/5 as they are covered by the Convention or fulfilled by all contracting parties
- $ Agriculture: 7/2, 9/3, 13/7, 13/8, 13/9, 13/10, 13/11, 16/11

  The agricultural Recommendations proposed to be deleted contain however some provisions which are not fully covered by the Convention. A new “umbrella” Recommendation covering these issues is proposed (in case Annex III of the Convention can not be amended).
- $ Cadmium discharges: 6/6 as being covered by other Recommendations and the Convention 1992.
- $ DDT (or significantly revised): 3/2 as being covered by the Convention and implemented in all Countries.
- $ Offshore activities: 18/2 as being covered by the convention. This Recommendation is to be considered by the SEA group.

C. The structure of the Recommendations is proposed to be revised as follows:

Industry

1. The present industrial Recommendations include a wide variety of different requirements in each Recommendation. Most of the industrial Recommendations include however similar requirements but they are structured in various ways. Therefore it is proposed that all Recommendations would have the same structure including the following items:

    1. General requirements
    2. Requirements for reduction of waste water discharges
    3. Requirements for reduction of emissions to the air
    4 Analysing methods

2. The preamble is proposed to be changed to correspond the present Convention in force, the Helsinki Convention 1992. Those items in the former Recommendation, which are now integral part of the Convention 1992, are proposed to be moved from the Recommendation part to the preamble.

3. A Recommendation on the use of the substitution principle is proposed to be added to each industrial Recommendation.

Product control measures

1.Preamble

The preamble is proposed to be changed to correspond the present Convention in force, the Helsinki Convention 1992. Those items in the former Recommendation, which are now an integral part of the Convention 1992, are proposed to be moved to the preamble from the Recommendation part. Also, the most important international conventions covering the issue and binding all the full Contracting Parties, are in some Recommendations proposed to be included in the preamble.

2. A general Recommendation on the substitution principle is proposed to be added into the Recommendations where it is relevant

3. Administrative and technical requirements/definitions:
    <u>A Recommendation for ban or restriction of the use (if relevant)</u>
    <u>Other requirements</u>

4. A Recommendation on reporting

The Recommendation text itself should not contain any measures, which have been ratified elsewhere on international fora by all the Contracting Parties.

D. Technical and substantial changes of the Recommendations

Industry

1. The titles are proposed to be changed for several of the Recommendations as they differ very much at present. The standard title for industrial Recommendations is proposed to be "Reduction of discharges and emissions from XX industry".

2. The Recommendations include different kind of expressions of limit values. There is a huge difference if a limit value is e.g. expressed as an annual average concentration or as max 2-24 h concentration. The limit values in each industrial Recommendation have been checked and some specifications on the expressions of them are proposed for some Recommendations.

The limit values expressed as concentrations in the Recommendations should always apply to process waste waters at the outlet from the waste water treatment plant (without dilution with eg. cooling waters). Such specification has been added to the relevant Recommendations if it is lacking. If a specific Recommendation on measurement procedures is elaborated such provisions could be included there instead.

Product control measures

Titles of all Recommendations are proposed to be slightly changed to correspond more tightly the product control scope or substance scope. The oldest product control Recommendations are proposed to be significantly revised in the technical requirement parts, such as limit values for a substance in a product. Changes are also proposed if there is considerable overlapping of different limit values with regulations or definitions of other fora. Also some deadline dates are proposed to be changed because they are outdated in the Recommendations in force.

In addition, we propose that the environmental monitoring of the substances would not be recommended in these or future product control Recommendations because the design and reporting of the environmental monitoring is agreed in the frame of the annual COMBINE update, which should take into account the monitoring carried out by both the public institutions and the polluters (and give guidance to them for further monitoring). We also want to underline that the ALL priority substances agreed by the HELCOM are also priority substances for the monitoring.

3.6 SUMMARY OF THE REVISION OF THE REPORTING FORMATS

Industry
Most of the reporting formats have been amended at least to some extent. LAND 1/00 meeting agreed on a general principles for industrial Recommendations. This includes reporting on smaller industries (often discharging to municipal sewers) in a more summarised way. In addition to this the Contracting Party should be required to evaluate the compliance/non compliance with the Recommendation (percentage or number of plants complying). This is especially important for sectors where only summarised data is provided. The country should assess the points where problems occur (parameters/other requirements). These principles have now been elaborated to concrete proposals for sectorwise tailor made reporting formats. The reporting formats could also include a self evaluation on the implementation status in terms of legal and administrative instruments.

Production control measures
The reporting formats of product control Recommendations have been mainly remarkably revised. The reporting formats include a self evaluation on the implementation status in terms of legal and administrative instruments and how the Recommendation is realised in the real life. The new reporting formats have a part of more specific questions concerning administrative measures. If the old reporting format has contained questions concerning technical measures and amounts, they are mainly included in the new reporting formats unless obsolete.

The reporting of environmental concentrations has been formerly included in the reporting of product control Recommendations. The concentrations are however proposed to be reported in the frame of the COMBINE program or by the monitoring group. Also important data and documents produced outside COMBINE program is urged to be harvested as far as possible by the monitoring group. If HELCOM wants to report the environmental concentrations of hazardous substances more widely than what can be obtained through COMBINE, it is more useful to provide HELCOM (through the product control reporting) with the information on where to obtain the complete monitoring data and background material than to give an insufficient overview of the concentrations (which is the present situation).

3.7 ISSUES TO BE CONSIDERED IN THE NEXT STEP

3.7.1 Reporting the implementation of the provisions covered by the Convention

The deletion of Recommendations due to the fact that the requirements are nowadays covered by the provisions of the Convention will create a problem for the assessment of the implementation of the requirements in these fields as there is no reporting system developed for the provisions of the Convention. It is however stated in the Convention that Contracting Parties shall report at regular intervals on e.g. the legal, regulatory or other measures taken to implement the provisions of the Convention (Article 16). We therefore propose that the Land Based Pollution Group should elaborate a reporting system concerning different provisions on land based pollution in the Convention. The HELCOM LAND 2 meeting in St. Petersburg in November 2000 decided to forward the issue on the reporting of agricultural provisions to the working group on agriculture (WGA). The group was asked to elaborate a draft reporting format to be considered at the LAND 3-meeting in May 2001.

3.7.2 Terms of reference for elaborating new or revising old Recommendations

A ToR for issues which have to be included in the Recommendations and what has to be taken into account by the lead countries in future revisions and elaboration of new Recommendations should be set up. A ToR should include e.g. the following points:

- Instructions of the general structure for industrial Recommendations;
- Instructions of what legislation and conventions to take into account in the Recommendations as well as in reporting obligations (EU, OSPAR, UN);
- The Hazardous Substances Group should define in co-operation with the LAND as soon as possible a ToR for Recommendations concerning product control measures and single hazardous substances and revise the Recommendations in force in accordance with the ToR. We propose that the scope of the product control measures would be either purely product OR substance oriented and not to include limits or regulations for point source pollution, which should be covered by the industrial Recommendations.
- The special characteristics of the Baltic Sea and the need of more stringent measures should be taken into account;
- Timetables for implementation, revision and reporting;

At the HELCOM LAND 2 -meeting in St. Petersburg November 2000 the Secretariat in co-operation with the chairman of the LAND group offered to elaborate a draft TOR to be considered at the LAND 3-meeting in May 2001.

3.7.3 Sampling procedures

A harmonised way of obtaining the reported emission and discharge figures are crucial to the comparability of the data and the checking of compliance with requirements in HELCOM Recommendations and in future unified principles for sampling, measurement methods and the calculation of results is essential. Common principles for the production of emission and discharge data from the IPPC installations will be listed in the Monitoring BREF prepared under the IPPC Directive, and these should be taken into account in future HELCOM work. One option might be to elaborate a specific HELCOM Recommendation on measurement practices including frequency and calculation of the result for the purpose of HELCOM reporting.

For the time being we think that the data produced for the reporting of HELCOM Recommendations must for practical reasons be obtained from the results of monitoring and compliance checking of limit values in permits (from reports to the environmental authorities). We do not think that detailed provisions on frequency, sampling site etc. can at the moment be added to each Recommendations (except for the chlor-alkali industry for which the provisions of the EU Directive is added in square brackets).

3.7.4 Expression of limit value

We also propose to have the limit values for discharges and emissions in the Recommendations expressed in a way comparable to EU BREF emission levels always when possible for the sector, i.e. as specific emissions (kg/tonne of production, kg/MJ etc.). Many of the present Recommendations have limit values set as concentrations and the comparability of pollution levels between plants is impossible. Limit values expressed as concentrations are though motivated from an environmental point of view and for the functioning of the (municipal) wastewater treatment plants. Hence, requirements on discharges could be set both as concentrations and specific discharges (kg/tonne of product) as appropriate.

3.7.5 Updating of the substance of the Recommendations and decisions taken at the LAND 2 -meeting

The LAND 2 -meeting in St. Petersburg in November 2000 was of the opinion of that also the substance of the Recommendations should be updated before the revised Recommendations are adopted, because it was felt that new Recommendations with old requirements could cause confusion. The meeting also decided that the lead countries of respective Recommendations should continue the elaboration of the substantial content of the Recommendations and in doing so the lead countries should take into account the proposals in this report in order to get a common approach.

In general the proposals on deletion and merging as well as the proposed structure of the Recommendations was approved at the meeting. The merging of Recommendations 6/4 and 18/5 on mercury was not supported by Poland and Germany and the work on these two Recommendations will continue separately. However, we still feel that these Recommendations could be merged according to our ToR and we have kept our proposal to be considered in the future. The reporting format proposal has nevertheless been made both for the merged proposal of ours and for the present Recommendations separately. Denmark did not support the deletion of the offshore Recommendation 18/2 and it was decided to forward this issue to the SEA group for consideration.

The draft Recommendations should be submitted to the LAND 3 –meeting in May 2001 and as many new Recommendations as possible should be ready for adoption at HELCOM 23 in 2002. It was stressed that the new reporting formats must be approved before the next reporting round in 2002 even if the new Recommendation itself will be adopted later (eg. due to the timetable of the BREFs). This is important in order to reduce the reporting load.

4. PROPOSALS FOR REVISED RECOMMENDATIONS AND REPORTING FORMATS

4.1 INDUSTRY

4.1.1 Overview

HELCOM has issued 19 Recommendations on 11 different industry sectors which were scrutinized. There is also another industrial Recommendation 17/6 on production of fertilizers outside the scope of the project. It is a recent Recommendation which has not yet been reported. If assessed needed some general/structural modifications could be made to this Recommendation in accordance with agreed general principles. The proposed revisions of the industrial Recommendations include:

1. The following Recommendations are proposed to be **merged** into one Recommendation:
- Pulp and paper industry, 3 Recommendations 16/4, 17/8,17/9
- Iron and steel industry, 3 Recommendations 11/7, 13/4, 17/5.

It should also be considered if 2 Recommendations on chemical industry could be merged together, (14/2 on the formulation of pesticides and 20E/2 on chemical industry in general). This issue has not been discussed during the project, but lead country Germany could take this into consideration when elaborating further proposals.

2. The following Recommendations are proposed to be **deleted:**
General principles for industry 9/8, 13/2, 13/5 as they are covered by the convention. Some provisions of 13/2 is however proposed to be transferred to the Recommendation on municipal waste water treatment

3. Proposals of updating are made for most of the outstanding Recommendations. Some are of a structural nature and some are Recommendations on substantial issues to be agreed on later.

4. Revision of reporting formats

Most of the reporting formats have been amended at least to some extent. LAND 1/00 meeting agreed on a general principles for industrial Recommendations. This includes reporting on discharge data of smaller industries often discharging to municipal sewers in a more summarised way. We have now also included in some Recommendations (20E/6, 16/6) a proposal for a possibility to report also on small plants discharging directly to surface waters in a more summarised way and for the outstanding industrial Recommendations thresholds for reporting should be further elaborated as appropriate. The applied technologies and other measures are also proposed to be reported as summaries for the sector in question and not plant by plant as presently. Our intention is that the description would be ¼-1/2 a page for the whole sector. In addition to this the Contracting party should be required to evaluate the compliance/non compliance with the Recommendation (percentage or number of plants complying). This is especially important for sectors where only summarised data is provided. The country should assess the points where problems occur

(parameters/other requirements). These principles have now been elaborated to concrete tailormade proposals for sectorwise reporting formats. The reporting formats could also include a self evaluation on the implementation status in terms of legal and administrative instruments.

Reporting of implementation of provisions covered by the Convention

The deletion of Recommendations due to the fact that the requirements are nowadays developed for the provisions of the convention. It is however stated in the convention that Contracting Parties shall report at regular intervals on e.g. the legal, regulatory or other measures taken to implement the provisions of the convention (Article 16). It is therefore proposed that the Land Based Pollution Group should elaborate a reporting system concerning different provisions on land based pollution in the convention.

5. Amendments made to the structure of the industrial Recommendations

The present industrial Recommendations include a wide variety of different requirements in each Recommendation. Most of the industrial Recommendations include however similar requirements but they are structured in various ways. Therefore it is proposed that all Recommendations would have the same structure including the following points:

1. General requirements
2. Requirements for reduction of waste water discharges
3. Requirements for reduction of emissions to the air
4. Analysing methods

6. Amendments made to the Preambles

The Preambles have been changed to refer to the provisions of the 1992 Convention.

7. Change in titles

The titles are proposed to be changed for several of the Recommendations as they differ very much at present. The standard title for industrial Recommendations is proposed to be "Reduction of discharges and emissions from XX industry"

4.1.2 Recommendations for issues to be considered in the future

ToR for the elaboration and updating of Recommendations

Some kind of ToR for issues which have to be included in the Recommendations and what has to be taken into account by the lead countries in future revisions of the Recommendations should be set up. This would include, besides a harmonized structure as proposed above, taking into account the work done in the same field of activity in international fora (EU, OSPAR etc) and analysing of these requirements. E.g. EU BREFs are developed for several sectors in the same field as HELCOM has issued Recommendations. These documents contain a lot of valuable information which the lead countries should take into account in the revision proposals for the Recommendations. The special characteristics of the Baltic sea and the need of more stringent measures should be taken into account. The reporting should also be developed taking into account other reporting obligations. This would contribute to harmonizing of requirements and reporting in different fora already from the beginning.

The BAT lists should be described in separate attachments. The present Recommendations include often under General requirements issues and techniques which can be regarded as BAT descriptions. This should be taken into account in the future. Attachments can more easily be updated.

Sampling procedures

Poland brought up the issue of harmonization of sampling procedures including sampling site, frequency etc. We fully agree that a harmonized way of obtaining the reported emission and discharge figures are crucial to the comparability of the data and the checking of compliance with requirements in HELCOM Recommendations. HELCOM had a project on Sampling and compliance checking in the mid 90's comparing methods used in the Contracting Parties. The results of the projects showed the wide variety of different proceedings in the contracting Parties concerning sampling and compliance checking and the outcome was that HELCOM was not the right fora for harmonization. The results were sent to the EU commission (and OSPAR) for information and possible further use in the elaboration of monitoring practices for the purpose of the IPPC Directive. The BAT reference document on Monitoring is under preparation in which the procedure on how to get reliable and comparable data will be described. The whole data production chain starting from sampling and analysing to the calculation and reporting of results should be taken into account. The harmonisation of sampling and data production practices is difficult at an European scale. Common principles for the production of emission and discharge data from the IPPC installations will be listed in the Monitoring BREF, and these should be taken into account in future HELCOM work. Directive 76/464 contains references to measurement methods to be used for 17 substances regulated in Daughter Directives, but the inclusion of these provisions into each relevant Recommendation does not seem advisable. One option might be to elaborate a specific HELCOM Recommendation on measurement practices including frequency and calculation of the result for the purpose of HELCOM reporting.

For the time being we think that the data produced for the reporting of HELCOM Recommendations must for practical reasons be obtained from the results of monitoring and compliance checking of limit values in permits (from reports to the environmental authorities). We do not think that detailed provisions on frequency, sampling site etc. can at the moment be added to each Recommendations (except for the chloralkali industry for which the provisions of the EU Directive is added in square brackets).

The Convention contains a general requirement to monitor emissions at installations, but if assessed necessary, a paragraph could be added to each industrial Recommendation stating that -Competent authorities in the contracting parties should set provisions on sampling sites, frequency etc. in the monitoring programs for the industrial plants.

An example on how to calculate daily monthly and annual discharges in Finland is provided below and if assessed needed such a provision can be added to the relevant Recommendations:

Discharge per day	The arithmetic mean value of the daily samples taken during one month divided by the number of sampling days
Discharge per month	Daily discharge multiplied by calendar days
Discharge per year	Sum of the values of monthly discharges

To get the specific discharge (kg/tonne of product) the discharge figure for the time period is divided with the production (or production capacity) for the period. The accuracy of the

flow measurement should be at least ± [10-20%].

As a summary to this point we see two ways to proceed:

1. Await for the outcome of the EU Monitoring reference document and provisions in sectoral BREFs for monitoring/measurements and either elaborate a separate HELCOM Recommendation on these issues or include these provisions in each relevant Recommendation.
2. Include general provisions on measurements as described above to the Recommendations already now

Expression of limit value

We also propose to have the limit values for discharges and emissions in the Recommendations expressed in a way comparable to EU BREF emission levels always when possible for the sector, i.e. as specific emissions (kg/tonne of production, kg/MJ etc.). Many of the present Recommendations have limit values set as concentrations and the comparability of pollution levels between plants is impossible. Limit values expressed as concentrations are though motivated from an environmental point of view and for the functioning of the (municipal) wastewater treatment plants. Hence, requirements on discharges could be set both as concentrations and specific discharges (kg/tonne of product) as appropriate.

There is a huge difference if a limit value is expressed as an annual average concentration or as max 2-24 h concentration. Recommendations how to express limit values should be in the proposed TOR for Recommendations. The limit values in each industrial Recommendation have been checked and some specifications on the expressions of them are proposed for some Recommendations.

The limit values expressed as concentrations in the Recommendations should always apply to process waste waters at the outlet from the waste water treatment plant (without dilution with eg. cooling waters). Such specification has been added to the relevant Recommendations if lacking. If a specific Recommendation on measurement procedures is elaborated such provisions could be included there instead.

The substitution principle

The principle of substitution of hazardous substances by less hazardous or preferably non-hazardous substances is not covered adequately in most of the Recommendations. All industrial activities covered by the HELCOM Recommendations are using, or producing as by-products, hazardous substances. The awareness of hazard and impacts of the used chemicals should be enhanced significantly. Often the industries are not even aware of that they are using hazardous substances. Thus, at least a Recommendation on the use of the substitution principle should be added to each industrial Recommendation. And in addition HELCOM should consider of developing a table/guideline, where different types of industrial activities are listed and which pin-points the typical hazardous substances used in those activities. This would also facilitate a more efficient implementation of the HELCOM strategy on hazardous substances. The pin-pointed hazardous substances would be those priority substances, which the industrial activity should substitute by less or non hazardous or which should be a target of specific pollution control measures. The table/guideline would be established and updated by the LAND group in close co-operation with the hazardous substances group. To operationalize the table, a paragraph referring to the table/guideline would be added into all HELCOM industrial Recommendations.

4.1.3 General requirements

HELCOM has issued three Recommendations on different general requirements:

- HELCOM Recommendation 9/8 concerns measures aimed at the reduction of discharges from industry
- HELCOM Recommendation 13/2 concerning industrial connections and point sources other than households connected to municipal sewerage systems
- HELCOM Recommendation 13/5 concerning principles for permitting waste water discharge and emissions from industrial plants

The requirements of the Recommendation 13/5 is fully covered by the provisions of the Convention (Annex III, Reg 3 Principles for issuing permits for industrial plants). The IPPC Directive 96/61/EC contains however some general principles on permitting which are not included in the provisions of the Annex. We are of the opinion that these principles should be taken into account when the Convention is revised, but that there is no need to keep a separate Recommendation on permitting principles.

Recommendation 9/8 can be regarded to be partly covered by the provisions in the Convention (the application of BAT and BEP) and partly by the adopted sector specific Recommendations.

The Contracting Parties have also already incorporated (at least most of) the general provisions in these Recommendations to their national legislation. As the provisions in the Convention are more binding to the Contracting Parties than the requirements in the Recommendations it is recommended that these two Recommendations are deleted. A reporting system should however be developed for the implementation of relevant parts of the convention.

The requirements of Recommendation 13/2 are almost fully covered by the convention. Only three issues can be regarded as not fully covered by the convention:

- the end of para c)the municipal sewage treatment plant must be protected from these substances or other properties that may disturb the processes in the plant or be harmful for the personnel
- para e) the sewerage system must not be deteriorated due to the content of substances in the effluent water from industries
- para f) limit values for these substances based on the best available techniques should be established separately for industry and other relevant sectors discharging indirectly

The requirements of paras e) and f) are proposed to be transferred to the proposed renewed Recommendation on municipal waste water treatment (see Recommendations for Urban areas). The rest of the Recommendation is proposed to be deleted.

HELCOM RECOMMENDATION 13/2 *)

Adopted 5 February 1992 having regard to

Article 13, Paragraph b) of the Helsinki Convention

INDUSTRIAL CONNECTIONS AND POINT SOURCES OTHER THAN HOUSEHOLD CONNECTED TO MUNICIPAL SEWERAGE SYSTEMS

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and
minimize land-based pollution of the marine environment of the Baltic Sea Area,

RECALLING ALSO that Annex II of the Helsinki Convention defines a list of harmful substances for the purpose of Article 6 of the Convention,

RECOGNIZING that heavy metals and other harmful substances originating from industrial plants and point sources other than household can not be sufficiently reduced in municipal treatment plants,

DESIRING to limit this pollution,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

a) the receiving water must not be harmed by persistent, toxic or bioaccumulating substances from point sources that can not be treated in the municipal sewage treatment plant;

b) before connection to the municipal treatment plant of such waste water a pretreatment utilizing BAT (best available ~~technology~~ techniques) is recommended;

c) the municipal sewage treatment plant must be protected from these substances or other properties that may disturb the processes in the plant or be harmful to the personnel; ***[Not explicitly covered]***

d) the quality of the sludge in the sewage treatment plant must not be deteriorated in a way that makes the sludge inappropriate for agricultural use or other purposes in an environmentally sound way;

[Paragraphs a-d are covered by Annex III of the convention, para 6. Industrial plants and other point sources connected to municipal treatment plants shall use Best Available Technology in order to avoid hazardous substances which cannot be made harmless in the municipal sewage treatment plant or which may disturb the processes in the plant. In addition, measures according to Best Environmental Practice shall be taken.]

e) the sewerage system must not be deteriorated due to the content of substances in the effluent water from industries and other point sources; **[Transferred to the proposed Recommendation on Municipal waste water]**

f) limit values for these substances based on the best available technology should be established separately for industry and other relevant sectors discharging indirectly; **[Transferred to the proposed Recommendation on Municipal waste water]**

g) industrial connections and other point sources connections must be authorized before the connection is made and supervised by authorities thereafter, ***[Covered by Article 6 pf the convention:****3. Harmful substances from point sources shall not, except in negligible quantities, be introduced directly or indirectly into the marine environment of the Baltic Sea Area, without a prior special permit, which may be periodically reviewed, issued by the appropriate national authority in accordance with the principles contained in Annex III, Regulation 3. The Contracting Parties shall ensure that authorized emissions to water and air are monitored and controlled.]*

RECOMMENDS FURTHER that the actions taken by the Contracting Parties should be reported to the Commission in 1994 and thereafter every three years.

*) This Recommendation supersedes HELCOM Recommendation 12/4

4.1.4 Pulp and paper industry (Recommendations 16/4, 17/8 AND 17/9)

General

There are 3 HELCOM Recommendations concerning the pulp and paper industry:

- Recommendation 16/4 concerning reduction of emissions into the atmosphere from the pulp and paper industry;
- Recommendation 17/8 concerning reduction of discharges from the kraft pulp industry; and
- Recommendation 17/9 concerning reduction of discharges from the sulphite industry**.**

Short comparison of HELCOM, OSPAR and EU requirements

The main discrepancy between HELCOM, the PARCOM Decisions (95/2 and 95/3) and the EU BREF (Final Draft July 2000) is that the NOx limit values:

- are expressed as mg/MJ and g/m^3 in the HELCOM Recommendations and they apply to the sum of NO and NO_2, as a yearly average for each Contracting Party's emissions, from recovery boilers both kraft and sulphite industry. HELCOM has also distinct values for recovery boilers and for lime kilns for kraft process; and
- in the PARCOM Decisions limit values are expressed as kg/tonne air dry pulp produced. The NOx emissions (sum of NO- and NO_2-emissions calculated as NO_2) from the Integrated and Non-integrated sulphite paper pulp industry apply to emissions from recovery boilers and from Integrated and Non-integrated kraft pulp industry the emissions apply to the sum of the emissions from recovery boilers, lime kilns and installations, if any, for separate combustion of strong odorous gases.
- in the EU BREF pulp and paper the NOx BAT emission levels are also expressed as kg/ADt for the kraft pulping process. The NOx emissions from auxiliary boilers are however expressed as mg/MJ as these emissions are more linked to the used fuel than to the production.

Other distinctions:

- the PARCOM Decision and the EU BREF concerning Sulphite paper pulp industry do not differentiate the discharge limit values for bleached pulp and unbleached pulp as the production of unbleached pulp is negligible in OSPAR countries;
- the PARCOM Decisions have limit values for COD, TSS and AOX while HELCOM Recommendations have for COD, AOX, Tot-P and Tot-N. The EU BREF presents BAT associated emission levels for COD, BOD, TSS, AOX, Tot-P and Tot-N
- the EU BREF presents BAT associated process1 emission levels for dust, NOx, SO_2 and for Total Reduced Sulphur TRS (as S) (only for kraft industry) while HELCOM Recommendations have limit values only for NOx and gaseous sulphuric compounds (including reduced sulphuric compounds) for both kraft and sulphite pulp. PARCOM Decisions have limit values for NOx and gaseous sulphur for Kraft industry and for NOx and sulphur dioxide for Sulphite industry. The definitions for process emissions in HELCOM and PARCOM differ from the EU BREF.

In general the limit values for COD are more stringent in the HELCOM Recommendations than in the equivalent PARCOM Decisions (which are more binding). The BAT associated emission levels described

1 Process related emissions include recovery boilers, lime kilns fugitive emissions and separate furnaces (e.g. for TRS incineration) linked to the process, if any. Emissions from any auxiliary boilers are not included.

in the EU BREF to water (COD, BOD, TSS, AOX, Tot-N and Tot-P) are generally lower than the limit values in the HELCOM Recommendation. The EU BREF BAT levels are describing the achievable levels at the best performing mills.

According to the pulp and paper BREF the main environmental issues to be considered in this field are: emissions to water and air and energy consumption. Other environmental issues are also: water consumption; solid waste; noise and odour (local impacts).

Amendments made to the Recommendation

All three Recommendations on pulp industry are recommended to be merged in order to cover all emissions from this sector in one Recommendation and to avoid repetitions and to simplify reporting. The content of attachment 2 was transferred to the Recommendation itself (paragraph 2.4). The new draft Recommendation was arranged to the following order:

- general requirements;
- reduction of waste water discharges;
- reduction of emissions into the air.

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

Amendments made to the reporting format

Some questions were added to the reporting format namely:

- type of mill (new, existing or that has been subject to at least a 50% increase in its capacity)
- general description of the sector including: application of BAT, measures taken to reduce emissions to the atmosphere and actions taken to reduce discharges and emissions during the last 3 years;
- the type of fuel used in lime kilns;
- problems encountered in the implementation of the requirements and the foreseen development of the situation.

The following questions were deleted:

- yearly average emissions in mg NOx/MJ fuel input or as mass concentration from auxiliary boilers;
- yearly average sulphur emission from auxiliary boilers measured as g S/MJ fuel input;
- annual use of chelating agents.

The rationale behind these modifications is to better reflect the requirements stated in the Recommendations and to avoid reporting of issues which are not covered by the Recommendations. There are no requirements on emissions from auxiliary boilers in the Recommendations. The question on annual use of chelating agents was also deleted as there are no direct provisions on chelating agents. The requirement on nitrogen discharges covers nitrogen discharges originating from chelating agents.

Recommendation for issues to be considered in the future revision

The limit values for gaseous emissions from the chemical pulping processes should be expressed as specific emission limit values (e.g. kg NOx per tonne of pulp produced) from the process as they are in the PARCOM Decision and EU BREF (and not as mg/MJ). This would make the Recommendation more comparable with both the PARCOM Decision and the EU BREF. It would also reduce reporting load for several Contracting Parties as the same emission data could be used for many reports. The presented specific limit value should cover also fugitive emissions.

One problem is also that in the present HELCOM Recommendation there are different limit values for lime kilns fired with oil and for lime kilns fired with biogas or solid fuels. In practice it impossible to distinct between emissions from these fuels as the lime kilns often use all kinds of fuels even mixed and emissions are usually reported as yearly averages to the authorities. This problem could be solved by setting limit values as specific emissions as mentioned above.

The BAT described in the HELCOM Recommendations for the pulp and paper industry should be reconsidered due to developments in the industry and available documents. PARCOM Decisions and the EU BREF document for pulp and paper industry include both BAT measures for reducing air emissions while the HELCOM Recommendation only lists BAT for waste water discharges. The pulp and paper BREF should be considered a useful document for the re-evaluation of the HELCOM BAT list.

PULP AND PAPER INDUSTRY

HELCOM RECOMMENDATION XX/XX

(Supersedes HELCOM Recommendations 16/4, 17/8 and 17/9)

Adopted xx 200x
having regard to Article ~~13~~x, paragraph b)
of the Helsinki Convention, 19~~74~~92

REDUCTION OF EMISSIONS AND DISCHARGES FROM THE *CHEMICAL* PULP ~~AND PAPER~~ INDUSTRY

THE COMMISSION,

~~**RECALLING** paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,~~

~~**RECALLING ALSO** that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea 1974 (Helsinki Convention) the Contracting Parties shall take all appropriate measures to control and strictly limit pollution by noxious substances and nutrients,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available Technologies for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECALLING ALSO that according to Paragraph 2 of Article 2 of the Helsinki Convention land based pollution includes airborne pollution,

~~**RECALLING ALSO** that according to Paragraph 8 of Article 2 of the Helsinki Convention, the Contracting Parties shall endeavour to use best practical means in order to minimize airborne pollution of the Baltic Sea Area by noxious substances,~~

~~**RECALLING ALSO** the Ministerial Declaration at the ninth meeting of the Helsinki Commission,~~

~~**HAVING REGARD** to the Ministerial Declaration of 1988 and to the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the load of pollutants most harmful to the ecosystem of the Baltic Sea,~~

~~**RECALLING ALSO** that Annex II of the Helsinki Convention defines lignin substances contained in industrial waste water as noxious substances to be controlled to minimize land-based pollution of the marine environment,~~

BEING AWARE that "best available ~~technology~~ techniques" for a particular process will change with time in the light of technological advances, economic and social factors, as well as changes in scientific knowledge and understanding,

RECOGNIZING the importance of limiting discharges into the Baltic Sea from production of *kraft and sulphite* pulp by application of best available ~~technology~~ techniques ~~[as defined in HELCOM Recommendation 12/3]~~,

RECOGNIZING that the *kraft and sulphite* pulp mills are responsible for an important part of the discharges from the pulp and paper industry into the Baltic Sea,

RECOGNIZING the importance of *preventing and controlling emissions to the air and* ~~reducing~~ discharges from *kraft and sulphite* pulp mills by developing

a) ~~process water systems with a high degree of recirculation~~ *more closed processes*
b) more efficient *end-of –pipe* ~~treatment~~ techniques *for air emissions and waste* water *discharges*, including sludge minimization and treatment,

DESIRING to limit the emissions into the atmosphere *and the discharges* from the *chemical* pulp ~~and paper~~ industry,

DESIRING ALSO more information about the emissions into the atmosphere *and about the waste water discharges* from the pulp ~~and paper~~ industry,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,*

RECOMMENDS that the Contracting Parties *fulfil the following requirements*:

1. General requirements

To prevent and reduce pollution from the ***chemical*** *pulp* ~~*and paper*~~*r industry. Best Available Techniques as listed in attachment 1, should be used as far as possible.*

2. (Recommendation 17/8 and 17/9)*Requirements for the reduction of waste water discharges:*

> ***The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned below refer to the process waste water.***

2.1 Existing mills

The following annual average discharge limit values [**)] in kg per tonne of Air Dry Pulp ~~(kg/t ADP)~~ (kg/ADt) produced are not *to be* exceeded from 1 January 2000 for any mill which has started to operate before 1 January 1997

	Bleached Pulp				Unbleached Pulp			
	COD	AOX	Tot-P	Tot-N	COD	AOX	Tot-P	Tot-N
Kraft pulp	30	0.40	0.04	0.40	15	-	0.02	0.30
Sulphite pulp	70	0.50	0.08	0.70	45	-	0.06	0.60

2.2 Existing kraft pulp mills in countries in transition

In countries in transition the following annual average discharge limit values in kg per tonne of Air Dry Pulp ~~(kg/t ADP)~~ (kg/ADt) produced are not *to be* exceeded from 1 January 2005 for any mill which has started to operate before 1 January 1997,

	Bleached Pulp				Unbleached Pulp			
	COD	AOX	Tot-P	Tot-N	COD	AOX	Tot-P	Tot-N
Kraft pulp	35	0.40	0.04	0.40	20	-	0.02	0.30

2.3 Mills starting to operate or considerably increasing its capacity (by more than 50%)

The following annual average discharge limit values in kg per tonne of Air Dry Pulp ~~(kg/t ADP)~~ (kg/ADt) produced are not *to be* exceeded by any mill starting to operate or considerably increasing its capacity (by more than 50%) after 1 January 1997,

	Bleached Pulp				Unbleached Pulp			
	COD	AOX	Tot-P	Tot-N	COD	AOX	Tot-P	Tot-N
Kraft pulp	15	0.20	0.02	0.35	8	-	0.01	0.25
Sulphite pulp	35	0.10	0.04	0.40	20	-	0.03	0.30

2.4 (Recommendation 17/8 and 17/9 Attachment 2) Analysing methods

Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available, e.g. the following methods:

AOX SCAN-W 9:89 or DIN 38 409, part 14

COD Potassium Dichromate Oxidation
(e.g. ISO 6060, second edition)

Tot-P Determination using sulphuric acid and potassium peroxo-disulphate
(e.g. SS 02 81 02 or SFS 3026)

Tot-N Determination using the Kjeldahl method after reduction with Devarda's alloy
(e.g. ISO/DIS 10048, SS 02 81 01).

All analyses should be made on unsettled, unfiltered samples.

3. Requirements for reduction of emissions to the air

3.1 (Recommendation 16/4) *Reduction of the emissions of nitrogen oxides, NOx (NO and NO2 as NO2 ~~nitrogen oxide + nitrogen dioxide~~)*

The emissions of nitrogen oxides, NOx (NO and NO2 as NO2 ~~nitrogen oxide + nitrogen dioxide~~), as a yearly average for each Contracting Party's emissions from recovery boilers and lime kilns shall not exceed the following values:

3.1.1 Emissions from recovery boilers

- Existing plants, from 1 January 2000

	I mg/MJ	II g/m^3 1)
Kraft Pulp	60	0.20
Sulphite Pulp	120	0.40

- New plants, from 1 January 1996

	I mg/MJ	II g/m^3 1)
Kraft Pulp	50	0.15
Sulphite Pulp	95	0.30

3.1.2 Emissions from lime kilns, as from 1 January 2000

	I mg/MJ	II g/m^3 1)
Oil fired	150	0.30
Fired with biogas or solid fuels	300	0.60

1) at 3% oxygen concentration

3.2 (Recommendation 16/4) *Reduction of the emissions of gaseous sulphuric compounds*

As a yearly average for each Contracting Party production of *kraft and sulphite* pulp, the following values are not *to be* exceeded from 1 January 2000:

Kraft pulp 1.0 kg S/t of pulp produced
Sulphite pulp 1.5 kg S/t of pulp produced

Emissions from all relevant sources are included except those from auxiliary boilers,
"Gaseous sulphuric compounds" include reduced sulphuric compounds like odorous gases.

RECOMMENDS ALSO that molecular chlorine is not used in the bleaching of *kraft and sulphite* pulp after 1 January 1997 (2000 for countries in transition),

RECOMMENDS FURTHER that, as a first step, limit values regarding nitrogen should apply to *kraft and sulphite* pulp mills located at the coast,

RECOMMENDS FURTHER that the Contracting Parties within 2 years re-evaluate the emission limits concerning NOx-emission from recovery boilers - new plants and S-emissions from sulphite pulp and kraft pulp processing,

RECOMMENDS FURTHER that the Contracting Parties re-evaluate, before the Commission meeting in the year ~~2000~~ 200x, the emission limit values of the present Recommendation and also consider if the values should be on a plant-by-plant basis *also for air emissions,*

RECOMMENDS FURTHER that the Contracting Parties should report every three years starting in ~~2000~~ 200x,

DECIDES that according to the development of BAT and especially the substitution of chelating agents, this Recommendation should be reconsidered in ~~1998~~ 200x.

~~**) For methods of effluent analysis, see Attachment 2~~

Attachment 1

BEST AVAILABLE ~~TECHNOLOGY~~ TECHNIQUES FOR THE *KRAFT AND SULPHITE* ~~PAPER~~ PULP INDUSTRY, 1995

The Contracting Parties have stressed the importance of limiting discharges into the Baltic Sea and emissions into the atmosphere from production of *kraft and sulphite* pulp by application of Best Available ~~Technology~~ *Techniques*. Best Available ~~Technology~~ *Techniques* for the *kraft and sulphite* pulp industry include the following or equally effective measures as important examples:

A. (Recommendation 17/8 and 17/9) *Best Available ~~Technology~~ Techniques for kraft and sulphite pulp industry*

1. Dry debarking with minor waste water discharges;

2. Closed screening;

3. At least secondary treatment for waste water discharges;

4. Use of environmentally sound chemicals in the process, for example use of biodegradable chelating agents wherever possible.

B. (Recommendation 17/8) *Best Available ~~Technology~~ Techniques for kraft pulp industry*

5. Stripping of most concentrated condensates and reuse of most condensates in the process;

6. Systems which enable the recovery of almost all spillages;

7. Extended delignification in the digester followed by oxygen delignification;

8. Efficient washing before the pulp leaves the closed part of the process;

9. Partial closure of the bleach plant. The main part of the discharge from the bleach plant is piped to the recovery system;

C. (Recommendation 17/9) *Best Available ~~Technology~~y Techniques for sulphite pulp industry*

10. Systems which enable the recovery of almost all organic substances dissolved in the cook (a total U-value[***)] of about 98% is achievable);

11. No discharge from the bleach plant when the sodium based processes are being used;

12. Partial closure of the bleach plant when another process than sodium based is used;

[***)] U-value is the proportion of organic substances dissolved in the cook and thereafter recovered and burned in the recovery boiler

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX*) CONCERNING THE REDUCTION OF DISCHARGES AND EMISSIONS FROM THE PULP ~~AND PAPER~~ INDUSTRY

Lead Country:

Country:
Year:

Please fill a separate reporting format for *kraft and sulphite* industries.

1. Name (or optionally mill1, mill 2...), location and the type of production (for example bleached, unbleached) in t/a for each mills.

		Production (t/a)	
Name and location of mill	Type of mill[1)]	Bleached	Unbleached

[1)] Under the heading "Type of mill" indicate whether it is:

a. a mill which started to operate after 1 January 1997: "new"
b. an existing mill which has been subject to at least a 50 % increase in its capacity after 1997: "50%"
c. mills starting to operate before 1 January 1997: "existing"

2. Short general description of the sector as a whole including:

- application of BAT as specified in attachment 1 of the Recommendation;
- waste water treatment (e.g. how many plants apply activated sludge treatment);
- reduction of air emissions;
- actions taken to reduce discharges and emissions during the last 3 years in general.

3. Waste water discharges

3.1 Annual mean discharges (kg/ADt) for COD, BOD, AOX, tot-P and tot-N for each mill including:

Mill (number)	Annual mean discharges (kg/ADt)				
	COD	BOD	AOX	tot-P	tot-N
Total					

~~3.2 Methods of effluent analysis as specified in paragraph 4 of the Recommendation.~~

~~Methods of effluent analysis~~	

4. Data on air emissions from pulp industry

a) Annual average emissions (mg NO_x/MJ) fuel input or as mass concentrations from recovery boilers and lime kilns for each mill. (Please refer the main type of fuel used in lime kilns!)

Mill (number)	Recovery boilers	Lime kilns	
	Annual average emissions (mg NO_x/MJ)	Annual average emissions (mg NO_x/MJ)	Type of fuel
Average AAAAA			

b) Total emissions of NO_x and gaseous S (t/a) and annual average emissions of gaseous sulphuric compounds* (kg S/ADt).

Mill (number)	Total emissions (t/a)		Annual average emissions in kg/ADt	
	NO_x	Gaseous S	gaseous sulphuric compounds	
Total			Average	

* The only emissions not to be included are those from the auxiliary boilers.

5. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

*) supersedes HELCOM Recommendations 16/4, 17/8 and 17/9

4.1.5 Iron and steel industry (Recommendations 11/7, 13/4, 17/4 AND 17/5)

General

There are 4 Recommendations for iron and steel industry:

- Recommendation 11/7 concerning measures aimed at the reduction of emissions to the atmosphere from the iron and steel industry;
- Recommendation 13/4 concerning atmospheric pollution related to the use of scrap materials in the iron and steel industry;
- Recommendation 17/5 concerning restriction of discharges from the iron and steel industry
- Recommendation 17/4 concerning restriction of atmospheric emissions and waste water discharges from hard coal cokeries (supersedes sub-paragraphs 4.a, 4.b and 4.c of HELCOM Recommendation 11/7)

Short comparison of HELCOM, OSPAR and EU requirements

PARCOM has five Recommendations in this field of activity:

- Recommendation 90/1 on the definition of the Best Available Technology for secondary iron and steel plants;
- Recommendation 91/2 on the definition of Best Available Technology in the primary iron and steel industry;
- Recommendation 91/3 on measures to be taken out in order to reduce pollution from secondary iron and steel production;
- Recommendation 92/2 concerning limitation of pollution from new primary iron and steel production installations;
- Recommendation 92/3 concerning limitation of pollution from new secondary steel production and rolling mills.

PARCOM has a clear division into two different categories in this field of activity: Primary and secondary.

The HELCOM Recommendations cover the process steps including hot rolling and cold rolling but excludes eg galvanizing. The HELCOM Recommendation does not have such a clear division into secondary and primary iron and steel industry.

The two draft EU BREFs also has a division into primary and secondary iron and steel industry but they go beyond the PARCOM and HELCOM Recommendations and cover also further processing such as galvanizing. One of the EU BREF covers the production of iron and steel and the other covers ferrous metals processing industry.

Amendments made to the Recommendations

The first 3 Recommendations 11/7, 13/4 and 17/5 were merged into one single Recommendation so as to reduce the number of Recommendations and to avoid overlapping and repetitions. Recommendation 17/4 is suggested to be left as a separate Recommendation as hard coal cokeries usually are handled as an own entity. It is also an new Recommendation and the implementation reporting has not been made yet for this Recommendation.

A Recommendation on using internationally accepted analysing standards for emission analysis was added.

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP.).

Amendments made to the reporting format

The questions have been amended to a great extent in order to have the answers more easily interpreted. This means that several questions are asked as "yes/no/partly" questions. This should not be very time consuming. The emissions should be reported separately for each process as far as possible. This is the only way to assess compliance with the Recommendation which has limit values for different processes. In practice data for each process is in every plant is not available, but it gives a picture where we are at the moment.

Question deleted:

- report of emissions from coke plants in accordance with paragraph 4 of the Recommendation 11/7 (since Recommendation 17/4 supersedes these paragraphs and the reporting is covered by this Recommendation);

Questions altered:

- the report concerning results of measures taken to avoid or reduce dust emissions from different processes and results achieved was transformed. These questions were added and they require just a yes/ no/ partly answer:
  1. emissions are avoided;
  2. emissions are collected and filtered;
  3. fugitive emissions are avoided;
  4. fabric filters or technology environmentally equivalent are used for dust cleaning;
  5. the particulate matter content of the filtered gases is $\leq$ 10 mg/m^3 (ndg).
  6. the use of scrap materials in the iron and steel industry has to be reported according to the main process unit used;

- the question concerning sludge handling has been enlarged to cover also other solid wastes (this is also suggested to be included to the Recommendation itself
- the questions concerning the former HELCOM Recommendations 13/4 and 17/5 were also slightly modified

The reporting format for Recommendation 17/4 is suggested to be kept separate. Only minor changes was made to the reporting of 17/4. The reporting format was modified according to the general reporting format agreed for industrial Recommendations agreed at LAND 1/00. If the general approach suggested for the merged iron and steel industry reporting is considered as a good one, the reporting format for Recommendation 17/4 could still after the first commenting round be amended in the same way. This would mean that questions are presented more as short "yes/no/partly-questions" and there would be less general descriptions required. A similar approach for Recommendation 17/4 will also be developed**.**

Recommendation for issues to be considered in the future revision

The requirements in the HELCOM Recommendations concerning iron and steel should be considered in the next revision at least concerning the strictness of the limit values. The addition of a limit value for total nitrogen discharges should be considered.

The EU BREF on iron and steel industry is already finalized, but no immediate revision of the Recommendation is considered necessary as comes to eg. the division into process categories as the structure of the HELCOM Recommendation is quite clear and transparent.

There is no internationally agreed methods for analysing 24h CNvol value, which makes compliance checking difficult for this parameter. A unified principle for this should be agreed.

IRON AND STEEL INDUSTRY

HELCOM RECOMMENDATION XX/X

(supersedes HELCOM Recommendations 11/7, 13/4 and 17/5)

Adopted xx 200x
having regard to Article ~~13~~ x, Paragraph b)
of the Helsinki Convention 1992

~~PREVENTION OF POLLUTION~~ ***REDUCTION OF EMISSIONS AND DISCHARGES*** **FROM THE IRON AND STEEL INDUSTRY**

THE COMMISSION,

~~**RECALLING** that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), the Contracting Parties shall take all appropriate measures to control and strictly limit pollution by noxious substances,~~

~~**RECALLING** Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,~~

~~**RECALLING ALSO** that according to Paragraph 2 of Article 2 of the Helsinki Convention land-based pollution includes also airborne pollution,~~

~~**RECALLING ALSO** that Annex II of the Helsinki Convention defines certain metals, oils and cyanide contained in industrial waste waters as noxious substances for the purposes of Article 6 of the Convention,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available Techniques for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances including heavy metals, cyanides and oil listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

~~**RECALLING ALSO** that according to Paragraph 8 of Article 6 of the Helsinki Convention, the Contracting Parties shall endeavour to use best practical means in order to minimize airborne pollution of the Baltic Sea Area by noxious substances,~~

~~**RECALLING ALSO** the Baltic Sea Declaration of 1990,~~

~~**RECALLING** the Ministerial Declaration at the ninth meeting of the Helsinki Commission~~,

DESIRING more information about the discharges from iron and steel industry,

RECOGNIZING that iron and steel industry is a major source of metal, oil and cyanide discharges,

RECOGNIZING the importance of *the prevention of pollution* from iron and steel industry by

(i) minimizing the hazards to human health and to the environment from toxic, persistent and bioaccumulative substances by the application of best available ~~technology~~ techniques;

(ii) developing industrial processes (in particular, recycling of waters) and preventing incidental effluent discharges;

(iii) developing waste- and stormwater treatment techniques and reuse or further utilization and/or processing of the sludge in a manner causing as little environmental hazard as possible,

(iv) developing processes and techniques for the collection and treatment of atmospheric emissions,

[RECOMMENDS to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,]

RECOMMENDS that the Contracting Parties take the following measures to *reduce emissions and discharges* ~~prevent pollution~~ from iron and steel industry:

1. General requirements

1.1 (Recommendation 17/5 para. 1.a) discharges should be avoided by using ~~dry~~ *such* operations (e.g. *dry* gas cleaning techniques) which cause no discharges to water;

1.2 (Recommendation 17/5 para.1.b) process water, polluted cooling water and polluted stormwater should be treated separately from unpolluted cooling water at each plant;

1.3 (Recommendation 17/5 para.1.c) installation of closed water systems should be developed for process water and polluted cooling water in order to reach a circulation rate of at least 95%;

1.4 (Recommendation 17/5 para.1.d) production processes, utilization of by-products, waste- and stormwater treatment technology should be developed in order to minimize discharges (e.g. slag granulation by process water);

1.5 (Recommendation 17/5 para.1.e) internal and external measures should be taken to minimize accidental discharges (e.g. installation of sufficient storage capacity for untreated waste waters);

1.6 (Recommendation 17/5 para.1.f) sludges *and other solid waste should be utilized or when not possible* disposed of in a manner causing minimal environmental hazard *(e.g.* preferably by treating and entering the sludges to the blast furnace, sintering plant or electric arc furnace*)*;

2.Requirements for the reduction of waste water discharges

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned below refer to the process waste water.

(Recommendation 17/5 para.2) after having fulfilled requirements *under para 1*, the following limit values should not be exceeded as annual mean values (for CNvol 24h value);

Type of process	**Suspendable solids**	**Oil**	**CNvol**
Blast furnace	10 mg/l	-	0.2 mg/l
Sintering plant	10 mg/l	-	-
Open-heart furnace	10 mg/l	-	-
Basic oxygen furnace	10 mg/l	-	-
Electric arc furnace	10 mg/l	-	0.1 mg/l
Continuous casting	10 g/t	5 g/t	-
Hot rolling	50 g/t (or 1 t/a)[1)]	10 g/t (or 0.2 t/a)[1)]	-
Cold rolling	10 g/t	5 g/t	-

[1)] for existing plants only

For plants with integrated waste water systems the total annual discharges should not exceed the sum of the annual production multiplied with the values above for each process,

3. Requirements to emissions to the air

3.1 (Recommendation 11/7 para.1) ~~as of January 1st 1995~~ dust emissions from ~~**)~~ *all* processes in the iron and steel industry should be avoided or collected and filtered before being allowed to enter into the atmosphere;

3.2 (Recommendation 11/7 para.2) fugitive emissions from all processes should be avoided as far as technically feasible e.g. by encapsulation, evacuation hoods combined with good housekeeping practices;

3.3 (Recommendation 11/7 para.3) fabric filters or technology environmentally equivalent should be used for dust cleaning e.g. in sintering plants, for secondary gases from blast furnaces and basic oxygen furnaces, in electric arc furnaces and at cutting and grinding operations;

When ~~these technologies are used~~ *measures under 3.1-3.3 are applied* the particulate matter content of the filtered gases should~~, as a guiding value,~~ not exceed 10 mg/m (ndg). ~~In any case, the particulate matter content of the filtered gases should not exceed 50 mg/m (ndg);~~

3.4 (Recommendation 11/7 para.5.a) ~~as of January 1st 1992~~ the total emissions (fugitive emissions from charging and tapping and filtered gas) from all processes should be measured or estimated and reported;

3.5 (Recommendation 11/7 para.5.b) a good process and device control and regular monitoring should be maintained in order to keep emissions low. ~~From 1997~~ dust emissions shall be continuously monitored if the particulate emission is 5 kg/h or more or the cadmium emission is 5 g/h or more and that installations with a particulate emission of 2 to 5 kg/h shall be equipped with measuring instruments which continuously determine waste gas opacity, e.g., optical transmission;

3.6 (Recommendation 13/4 para.1) measures should be taken to avoid cadmium and mercury in all products that can end up as scrap. ~~By 1994~~ the Contracting Parties should report on plans and measures they have taken and present a timetable for further reductions;

3.7 (Recommendation 13/4 para.2) ~~by 1994,~~ in order to minimize the amount of chlorinated compounds in used scrap, the Contracting Parties should present proposals to reduce the use of chlorinated oils and emulsions in metal-working plants and the melting of chlorinated plastic together with steel products. A timetable for such reductions should also be presented by the same date;

3.8 (Recommendation 13/4 para.3) the situation regarding mercury and dioxin emissions should be presented by the Contracting Parties ~~by 1995~~;

i)(Recommendation 13/4 para.4) further research and development should be carried out to achieve suitable technologies for reducing emissions of mercury and dioxin. The current state of development of such technologies should be presented ~~by 1996~~. A timetable for the reduction of emissions of mercury and dioxin using such technologies should also be presented ~~by the same date~~;

4. Analysing method

Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.

RECOMMENDS ALSO that the Contracting Parties report to the Commission every three years starting in ~~2000~~ 200x,

RECOMMENDS FURTHER that measurements and requirements for heavy metals as well as possible measurements and requirements for the environmental properties (e.g. toxicity and persistency) of the oil products used should be examined in ~~2000~~ 200x,

DECIDES that this Recommendation should be reconsidered in ~~2000~~ 200x, especially concerning limit values for continuous casting, hot and cold rolling.

~~**) Examples of processes:~~
~~- coke plants;~~
~~sintering plants;~~
~~blast furnaces;~~
~~basic oxygen furnaces~~
~~- electric arc furnaces~~
~~- casting~~
~~- rolling, furnaces in rolling mills~~
~~- cutting~~

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/X CONCERNING PREVENTION OF POLLUTION FROM THE IRON AND STEEL INDUSTRY *)

Lead Country:

Country:
Year:

1. Name and location of the plants. Optionally the number of plants may be reported.

2. Main process units, their production and use of scrap for each plant separately.

Main process units	Production (t/a)	Use of scrap	
		t/a	kg/t steel
Sintering plant		-	-
Blast furnace			
Open-heart furnace			
Basic oxygen furnace			
Electric arc furnace			
Continuous casting		-	-
Hot rolling		-	-
Cold rolling		-	-

3. Waste water discharges

a) Status of the plant concerning applying of operations which cause no waste water discharges (17/5 para. 1.a and 1.c).

Main process units	Operations causing no waste water discharges are applied (Yes/No)	Circulation rate (%)
Sintering plant		
Blast furnace		
Open-heart furnace		
Basic oxygen furnace		
Electric arc furnace		
Continuous casting		
Hot rolling		
Cold rolling		

b) Status of the plant concerning separate treatment of process water, polluted cooling water and polluted stormwater from unpolluted cooling water (17/5 para. 1.b).

	Yes	No	Partly
Process water, polluted cooling water and polluted storm water are treated separately from unpolluted cooling water?			
Stormwater from plant area is treated before discharging?			

c) Status of the plant concerning measures in order to minimize discharges (especially phenols, cyanide, COD and PAH) (17/5 para. 1.d).

Measure	Measure has been carried out? (Yes/No)	Work is going on? (Yes/No)
Utilization of by- products		
Slag granulation by process water		
Other, what?		

d) Status of the plant concerning internal and external measures in order to minimize accidental discharges (17/5 para. 1.e).

Measure	Measure has been carried out? (Yes/No)	Work is going on? (Yes/No)
Installation of sufficient storage capacity for untreated waste waters		
Other, what?		

e) Status of the plant concerning utilization of sludges and waste (e.g. recycled in plant, externally used, landfill, other [what?]) (17/5 para. 1.f)

	Percentage (%)			
Type of sludge or waste	recycled in plant	externally used	landfill	other (what?)

f) Annual mean discharge (for CN_{vol} 24h value) and total waste water discharges

Process	Suspendable solids (mg/l)	CN_{vol} (mg/l)	Discharged waste water (m^3/a)
Sintering plant			
Blast furnace			
Open-heart furnace			
Basic oxygen furnace			
Electric arc furnace			

g) Specific discharges in g/t steel

	Specific discharges in g/t steel				
Process	SS	Oil	Ni	Cr	Zn
Continuous casting					
Hot rolling					
Cold rolling					

h) Total discharges in t/a

	Total discharges in t/a					
Process	SS	CN_{vol}	Oil	Ni	Cr	Zn
Sintering plant						
Blast furnace						
Open-heart furnace						
Basic oxygen furnace						
Electric arc furnace						
Continuous casting						
Hot rolling						
Cold rolling						
Storm water from plant area						
Total						

4. Emissions to the atmosphere

a) Status of the plant concerning dust and fugitive emissions from all processes and dust cleaning technology used (11/7 para. 1, 2 and 3)

	Yes	No	Partly
Emissions are avoided?			
Emissions are collected and filtered?			
Fugitive emissions are avoided?			
Fabric filters or technology environmentally equivalent are used for dust cleaning?			
The particulate matter content of the filtered gases is $\leq$ 10mg/m^3 (ndg)			

b) Status of the plant concerning total emissions from all processes (11/7 para. 5.a).

Process	Total dust emissions	
	kg/t steel	t/a
Sintering plant		
Blast furnace		
Open-heart furnace		
Basic oxygen furnace		
Electric arc furnace		
Continuous casting		
Hot rolling		
Cold rolling		

c) Status of the plant concerning monitoring of emissions (11/7 para. 5.b)

	Yes	No	Partly
Emissions from all processes are monitored continuously?			

d) Measures taken to avoid cadmium and mercury in products that can end up as scrap and the plans for further reductions (13/4 para. 1)

Measures have been introduced? (Yes/No)		
Measure (brief description)	Measure has been carried out? (Yes/No)	Work is going on? (Yes/No)
Timetable for further reductions? (Yes/No)		

e) Proposals to reduce the use of chlorinated oils and emulsions in metal-working plants and the melting of chlorinated plastic together with steel products (13/4 para. 2)

Measures have been introduced? (Yes/No)		
Measure (a brief description)	Measure has been carried out? (Yes/No)	Work is going on? (Yes/No)
Timetable for further reductions? (Yes/No)		

f) The annual emissions of mercury and dioxins (13/4 para. 3)

	Mercury		Dioxins	
Emissions have been measured? (Yes/No)				
Emissions have been estimated? (Yes/No)				
Annual emissions	kg/a	mg/t steel	g/a	µg/t steel

g) The current state of technologies suitable for reducing emissions of mercury and dioxins (13/4 para. . 4)

Measures have been introduced? (Yes/No)		
Technology (a brief description)	Technology has been carried out? (Yes/No)	Work is going on (Yes/No)
Timetable for further reductions? (Yes/No)		
According to timetable further reductions	Mercury	Dioxins
will be carried out by (year)		

*) supersedes HELCOM Recommendations 11/7, 13/4 and 17/5

HELCOM RECOMMENDATION 17/4 *)

Adopted 12 March 1996 having regard to

Article ~~13~~ x, Paragraph b) of the Helsinki Convention 1992

RESTRICTION OF ATMOSPHERIC EMISSIONS AND WASTE WATER DISCHARGES FROM HARD COAL COKERIES

THE COMMISSION,

~~RECALLING that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), the Contracting Parties shall take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area, and in particular to control and strictly limit pollution by noxious substances and materials in accordance with Annex II to the Helsinki Convention,~~

~~RECALLING ALSO that, inter alia, certain metals, cyanides and oil are listed in the said Annex for the purposes of Article 6 of the Convention,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available T~~echnology~~ techniques for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances including heavy metals, cyanides and oil listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNIZING that hard coal cokeries are notable sources of discharges of ammonia, phenols and cyanides to water and emission of dust to atmosphere,

RECOGNIZING ALSO that hard coal cokeries may be notable sources of discharges of polyaromatic hydrocarbons (PAH) to water,

DESIRING to limit atmospheric emissions and waste water discharges from hard coal cokeries with best available ~~technology~~ techniques,

DESIRING ALSO to improve knowledge on these emissions and discharges,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,*

RECOMMENDS that the Governments of the Contracting Parties to the Helsinki Convention as of 1 January 2002, or immediately upon adoption of a new production unit that has been granted a licence after 1 January 1998, take the following measures for hard coal cokeries:

1.*Requirements for the reduction of waste water discharges:*

1.1 production processes, recovery of by-products (ammonia, etc.), gas cleaning equipment, waste- and stormwater treatment technology and, in particular, recycling of waters should be developed in order to minimize discharges of nitrogen, phenols, cyanide, COD and PAH;
1.2 internal and external measures should be taken to minimize accidental discharges (e.g. installation of sufficient storage capacity for untreated waste water);
1.3 sludges out of biological waste water treatment should be disposed of in the manner causing minimal environmental hazard, e.g. be charged into coke ovens together with the coal;
1.4 specific discharges (g per tonne hard coal) and concentrations in effluent (mg/l) should not, as an annual average for each mill, as of 1 January 2002 or immediately upon adoption of a new production unit that has been granted a licence after 1 January 1998, exceed the following values:

tot-N (i)	
CODCr (TOC)	100 (40) g/t
PAH (ii)	0.03 g/t (or 7 g/t suspendable solids)

as 24h or shorter period limit value (as annual mean value):

NH4-N	30 mg/l (25 mg/l)
Phenol	0.5 mg/l (0.3 mg/l)
CNvol	0.2 mg/l (0.1 mg/l)

(i) No limit value, but should be measured
(ii) Measurement at least six PAHs contained in DIN 38 409-H13-3

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned above refer to the process waste water.

2 *Requirements for the reduction of emissions to the air:*

2.1 dust emissions from hard coal cokeries should be avoided or collected and dedusted before being allowed to enter into the atmosphere;
2.2 fugitive emissions from hard coal cokeries should be avoided as far as technically feasible, e.g. by enclosing the coke pushing operation besides good operational and housekeeping practices;
2.3 A low emission coke cooling techniques, preferably dry quenching, should be used. Dust emissions in the waste gas from dry quenching should not exceed 20 mg/m3 (ndg) for new plants and 50 mg/m3 (ndg)

for existing plants. The total dust emissions from wet quenching may not exceed 50 g per tonne of coke for new plants and 80 g per tonne of coke for existing plants;
2.3.B filling gases from hard coal cokeries are to be conveyed to the crude gas as far as possible. Filling gases which may not be passed on should be burned. The emission of particulate matter in the combustion waste gas should not exceed 25 mg/m3;
2.3.C before coke pushing the coke should be fully carbonized. Waste gases from coke oven pushing should be captured and passed through a dust collector. Dust emission after dust filters should not exceed 5 g per tonne of coke;
2.4. the total emissions (including e.g. fugitive emissions from pushing, leaking doors and charging holes and dedusted gas) from all process steps should be measured or estimated and reported,

3. Analysing methods
Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-Standards, ISO-Standards, OECD-Guidelines) should be used whenever available,

RECOMMENDS FURTHER that the Contracting Parties report to the Commission the discharges, atmospheric emissions and the pollution control measures taken every three years starting in 2003,

DECIDES that this Recommendation should be reconsidered in ~~2000~~ 200x regarding requirements and especially concerning a limit value for tot-N and limit values concerning total dust emission from wet quenching.

*) This Recommendation supersedes sub-paragraphs 4.a, 4.b and 4.c of HELCOM Recommendation 11/7

REPORTING FORMAT FOR HELCOM RECOMMENDATION 17/4 CONCERNING RESTRICTION OF ATMOSPHERIC EMISSIONS AND WASTE WATER DISCHARGES FROM HARD COAL COKERIES

Country:.....Year:.....

1. Name and location of hard coal cokeries and their production in tonnes/year;

2. Summarized description of the sector including:
- Waste water treatment systems applied;
- Quenching technique applied;
- Status of the cokeries as to the paragraphs 2.2 and 2.3.A-2.3C of the Recommendation;

3. Waste water discharge data
- Waste water flow in m3 per tonne hard coal
- Discharges in g per tonne hard coal or mg/l for the following parameters: tot-N, N-NH4+, CODCr or TOC,
Phenol, CNvol, PAH or suspendable solids;

4. Total atmospheric emissions of dust in g per tonne coke;

5. Description of disposal of sludge from biological waste water treatment.

6. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.1.6 Metal surface treatment (Recommendation 16/6)

General

HELCOM has issued one Recommendation 16/6 on restriction of discharges and emissions from the metal surface treatment.

Short comparison of HELCOM, OSPAR and EU requirements

In comparison with PARCOM Recommendation 92/4 the only difference observed is that the limit values of the PARCOM Recommendation are more stringent.

	Concentration in mg/l	
Substance	HELCOM	PARCOM
Cadmium	0,2	0,2
Mercury	0,05	0,05
Chromium (total)	0,7	**0,5**
Chromium (VI)	0,2	**0,1**
Copper	0,5	0,5
Lead	0,5	0,5
Nickel	1,0	**0,5**
Silver	0,2	**0,1**
Zinc	2,0	**0,5** [1)]
Tin	-	**2,0**
Unbound cyanide	0,2	0,2
Volatile organic halogens (VOX)	0,1	0,1

[1)] Only in justified cases a maximum zinc concentration of 2 mg/l may be allowed.

The PARCOM Recommendation Appendix on BAT measures contains some measures which lack from the HELCOM Recommendation.

> *Poland commented that the title and the provisions of the Recommendation do not fit and the scopes of the OSPAR Recommendation and the IPPC directive should be taken into account. The title of the PARCOM Recommendation addresses Electroplating industry but the scope is defined to apply to plants which plates surfaces with metals electrolytically or chemically, which is somewhat contradictory. The scope of the HELCOM Recommendation is exactly the same and in our opinion the title fits better. We also think that the main operations defined in the scope are the most important from a water protection point of view. The IPPC directive covers plants for surface treatment of metals and plastic materials using an electrolytic or chemical process where the volume of vats exceeds 30 m3.*

EU has no comparable specific requirements in this sector. The work on the EU BREF in this sector will start in 2001**.**

Amendments made to the Recommendation

The structure of the Recommendation has been divided into three parts:
1. General requirements
2. Requirements for reduction of waste water discharges
3. Measures to avoid as far as possible the use of chlorinated solvents.

Additionally a fourth para on using internationally accepted analysing standards for emission analysis was added. Otherwise there are only slight modifications made to the present Recommendation on metal surface treatment.

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

Amendments made to the reporting format

The reporting format has been changed to be more in line with the general reporting format for industrial Recommendations agreed at LAND 1/00. The main alteration in the reporting format is the fact that plants discharging directly to surface waters should report the discharge data preferably plant by plant and for plants discharging to sewers a summarized data should be given. There are for example in Finland approximately 300 metal surface treatment plants and a detailed reporting of them all would be unreasonable. If assessed needed a the reporting could be further reduced by restricting plantwise reporting to plants exceeding the IPPC threshold (vat >30 m3).

Recommendation for issues to be considered in the future revision

The structure of the present Recommendation is (with adopted amendments) quite transparent and no immediate significant revisions are assessed necessary. It is assessed reasonable to keep a Recommendation on this sector even in near future if updated at regular intervals.

The limit values for metal discharges in the Recommendation should be considered. The present limit values are more loose than in the corresponding PARCOM Recommendation.

Pollution caused by organophosphorous compounds and brominated flameretardants have gained increased attention and it could be considered if requirements on these and other relevant substances should be included in the metal surface treatment Recommendation.

The work on the EU BREF in this sector will start in 2001 and the outcome of this should be considered in the revision of the HELCOM Recommendation.

METAL SURFACE TREATMENT

HELCOM RECOMMENDATION 16/6

Adopted 15 March 1995,
having regard to Article ~~13~~ x, paragraph b)
of the Helsinki Convention 1992

~~RESTRICTION~~ *REDUCTION* OF DISCHARGES AND EMISSIONS FROM THE METAL SURFACE TREATMENT

THE COMMISSION,

~~**RECALLING** that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), the Contracting Parties undertake to take all appropriate measures to control and strictly limit pollution of the marine environment of the Baltic Sea Area by noxious substances,~~

~~**RECALLING ALSO** that Annex II of the Helsinki Convention defines heavy metals, halogenated compounds, cyanides and EDTA as noxious substances for the purposes of Article 6 of the Convention,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available T~~*echnology*~~ techniques for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances, including heavy metals, halogenated compounds, cyanides and EDTA listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNIZING that metal surface treatment [1)] is a notable source of discharges of these ~~noxious~~ *harmful* substances into water and into atmosphere,

~~**HAVING REGARD** to the Ministerial Declaration of 1988 and to the Baltic Sea Declaration of 1990 calling, inter alia, for a substantive reduction of the load of pollutants most harmful to the ecosystem of the Baltic Sea,~~

RECOGNIZING the importance of limiting discharges into water and into atmosphere from the metal surface treatment by application of Best Available ~~technology~~ techniques,

DESIRING more information about the discharges from the metal surface treatment,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available*,

RECOMMENDS that the Governments of the Contracting Parties to the Helsinki Convention take the following measures:

1. General requirements

1.1 if technically possible, substitution of hazardous substances (e.g. cyanide, cadmium, mercury, EDTA and similar sequestering agents, nonylphenol-ethoxylates, chlorinated organics) by substances which are readily biodegradable, non-bioaccumulating and non-mutagenic and have a low toxicity;

1.2 substitution of EDTA in degreasing baths, stripping baths and chemical nickel plating baths. Possible substitutes include e.g. citric acid, tartaric acid and gluconic acid;

1.3 substitution of processes generating noxious substances wherever possible (e.g. cyanide oxidation with hypochlorite);

1.4 treatment of process baths using suitable processes in order to have the longest possible service life. Such processes include, e.g. membrane filtration, ion exchange, electrolysis, thermal processes and evaporation;

1.5 retention of bath ingredients by suitable means, such as transporting the goods in such a way that drag-out is minimized; splash guards or optimized bath composition;

1.6 multiple use of counter-current rinse waters (at least three rinsing steps should be applied). Suitable techniques to keep more than 90% of the drag-out in a small volume for recovery/recycling are, e.g.:

i) 3-stage cascade rinsing;
ii) 2-stage cascade rinsing plus closed cycle rinsing with ion exchange;
iii) combined dip/spray/mist rinsing techniques.

If possible these rinsing concentrates should be returned into the process baths, if necessary after specific treatment/concentration. By applying these rinsing techniques process baths can often be operated as closed water/low waste systems;

1.7 separation of suitable non-ferrous metal waste water streams to carry out internal recycling (e.g. by electrolysis) or external recovery (e.g. by non-ferrous metal industry);

1.8 recovery of EDTA from chemical copper plating baths (e.g. by precipitation as H_4EDTA) and their rinse baths (e.g. by precipitation after a concentration step, e.g. by anion exchange),

2.Requirements for the reduction of waste water discharges

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned below refer to the process waste water.

2.1 waste water streams should be separated according to the kind of necessary treatment and to achieve a sludge composition such that the metals can be recovered. The treatment should be carried out in batch reactors;

2.2 cadmium and mercury containing water streams should be treated and monitored separately with the following maximum concentrations:

Cadmium - 0.20 mg/l;

Mercury - 0.05 mg/l;

2.3 before discharging into sewers or surface waters the treatment should be provided so that ~~from 1 January 1996 for new plants and from 1 January 2000 for existing plants~~ the concentrations of the following substances do not exceed the following levels ~~(without any dilution before discharge):~~

Substance Concentration	mg/l
Chromium (total) (Cr-tot)	0.7
Chromium (VI) (Cr-VI)	0.2
Copper (Cu)	0.5
Lead (Pb)	0.5
Nickel (Ni)	1.0
Silver (Ag)	0.2
Zinc (Zn)	2.0
Unbound cyanide	0.2
Volatile organic halogens (VOX)	0.1

Plants discharging small loads of metals (defined as sum of total chromium, copper, lead, nickel and zinc less than 200 g/day prior to end-of-pipe treatment) may be subject to limit values up to maximum four times higher for total chromium, copper, lead and nickel. Maximum concentration of zinc shall not exceed 4 mg/l;

2.4 in some cases organic substances could be present in the waste water. Thus, if possible and considered suitable, such waste water from the metal surface treatment should undergo biological treatment. This includes treatment in a municipal sewage treatment plant,

3. *Requirements to avoid as far as possible the use of chlorinated solvents*:

They should be replaced by water-based systems or non-halogenated organic solvents. In specific cases, where it is proven that substitution is technically not possible, the following requirements should be met

3.1 In operating surface treatment plants, the only volatile chlorinated hydrocarbons which should be used for degreasing are commercial-grade tetrachloroethene, trichloroethene or dichloromethane. The use

of other halogenated solvents is not necessary for technical reasons. Substances widely acknowledged as carcinogenic should not be contained as additives in, nor be added to, the halogenated hydrocarbons;

3.2 Surface treatment plants should be established and operated in such a way that goods to be processed should be treated in an enclosure in the cases where volatile solvents are used. This enclosed plant, except for the openings for venting the waste gases, is sealed on all sides;

3.3 Vented waste gas should be led to a separator which is used to ensure that the emissions of volatile halogenated hydrocarbons do not exceed a mass concentration of 20 mg/m^3. As a variation from this: if the solvent contains more than 50% of dichloromethane in the volative halogenated hydrocarbons, the emission, may not exceed a mass concentration of 50 mg/m^3. These concentrations should not be achieved by diluting the waste gas with air. The separated volatile halogenated hydrocarbons should be recovered;

3.4 Halogenated solvents or residues containing halogenated solvents should be stored, transported and handled in closed vessels;

3.5 The waste water from processes in which volatile halogenated hydrocarbons are used (e.g. greasing, degreasing) should be treated separately and should comply with the following limit value:

Sum of trichloroethene, tetrachloroethene and dichloromethane: less than 0.1 mg/l (expressed as chlorine in a representative sample),

4. Analysing methods

Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.

RECOMMENDS FURTHER that the Contracting Parties re-evaluate in three years the limit values of this Recommendation and reconsider them as appropriate,

RECOMMENDS FURTHER that the Contracting Parties report to the Commission every three years starting from 1997.

[1)] This Recommendation should apply primarily to plants in which surfaces are plated with metals electrolytically or chemically. This involves the following main operations:
- pre-treatment (e.g. degreasing/cleaning and pickling);
- electrolytic or chemical deposition of metals, including intermediate treatment;
- post-plating treatment (e.g. chromating, dyeing);
- stripping;
- phosphating

REPORTING FORMAT FOR HELCOM RECOMMENDATION 16/6 CONCERNING *~~RESTRICTION~~ REDUCTION* OF DISCHARGES AND EMISSIONS FROM THE METAL SURFACE TREATMENT

Lead Country:

Country:
Year:

1. Number and type of plants discharging directly into surface waters and number and type of plants discharging to municipal sewers.

2. Summarized description of the sector [1)] including:

- efforts to reduce the volume of waste water discharged and its pollutant load as specified in paragraph 1 of the Recommendation;

- efforts to avoid and substitute the use of chlorinated solvents as specified in paragraph 3 of the Recommendation;

- actions taken to reduce discharges and emissions during the last 3 years.

3. Information on waste water discharges for plants discharging directly to surface waters.

3.1 - Waste water volume, concentration of heavy metals and other substances as specified in paragraph 2 of the Recommendation (preferably plant by plant).

Plant	Waste	Concentration in mg/l										
		Cd	Hg	Cr-tot	Cr-VI	Cu	Pb	Ni	Ag	Zn	Unbound cyanide	VOX

3.2 - Sum of trichloroethene, tetrachloroethene and dichloromethane in mg/l (expressed as chlorine in a representative sample).

4. VOC emission data to the air.

5. Summarized data on plants discharging directly to municipal sewers including:

- number or percentage of plants which comply with the different requirements of the Recommendation (Please specify e.g. which parameters / requirements cause problems for compliance).

6. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

[1)] Applies primarily to plants in which surfaces are plated with metals electrolytically or chemically. This involves the following main operations: pre-treatment (e.g. degreasing/cleaning and pickling); electrolytic or chemical deposition of metals, including intermediate treatment; post-plating treatment (e.g. chromating, dyeing); stripping and phosphating.

4.1.7 Oil refineries (Recommendation 6/2)

General

HELCOM has issued one Recommendation 6/2 concerning restriction of discharges from oil refineries.

Short comparison of HELCOM, OSPAR and EU requirements

HELCOM Recommendation 6/2 and PARCOM Recommendation 89/5 are identical. PARCOM has, on the other hand, one more Recommendation (Recommendation 83/1). This Recommendation was elaborated taking note the TWG's Recommendations concerning "programmes and measures". The Recommendation includes following e.g. provisions on review of discharges from existing refineries and reduction programmes for the discharges from those refineries and reports on these. Also pollution from hydrocarbons is addressed.

The EU BREF on Mineral oil and gas refineries (First Draft Feb 2000) has a different division of the types of the industry compared to the HELCOM Recommendation. According to the BREF there are three types:
Type I - simple (non-conversion refinery: composed of crude oil distillation, reforming, treatment of distillate products, including desulphurisation and/or other quality improvements´processes (i.e. isomerisation or speciality manufacturing)
Type II - mild conversion: Type I plus thermal cracking or visbreaking)
Type III - complex (Type II plus fluidised cat cracking and/or hydrocracking)

HELCOM lists five different types:
Type I - simple refinery: composed of crude oil distillation units, catalytic units and facilities for the treatment of distillate products including desulphurisation
Type II - Type I plus catalytic cracking and/or thermal and/or hydrocracking
Type III - Type II plus stream cracking in refineries only and/or production of lubrificants within refinery fence
Type IV - Type II and Type III plus petrochemical industry
Type V - Production of lubrificants only (not included in the Recommendation 6/2).

According to the EU BREF monitoring should be made for:

- *air emissions*: SO_2; NOx; particulate matter; CO.
- *releases to water especially*: flow rate; pH; Temperature; TOC (COD/BOD); hydrocarbon oil; ammoniacal and total nitrogen; SS; phenols; sulphides; dissolved oxygen; phosphates; nitrates; nitrites; metals (Cd, Hg, Cr, Ni, Zn, Cu and As).
- *residues*: quantity and composition (including prescribed substances).

Amendments made to the Recommendation

A Recommendation on using internationally accepted analysing standards for emission analysis was added Otherwise only slight modifications were made to the present Recommendation concerning restriction of discharges from oil refineries.

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

Amendments made to the reporting format

Questions added to the reporting format:

- cooling capacity;
- concerning the type of waste water treatment one type of effluent was added: uncontaminated cooling water and after "cooling water" was added "contaminated or mixed with other contaminated waters";
- summary of evaluation of compliance with the requirements of the Recommendation.

Questions changed:

- "crude oil refining capacity" to just "oil refining capacity"
- the question on monitoring programs in the recipient was deleted as it has no corresponding paragraph in the Recommendation itself. The information on the programs has been gathered in previous reporting rounds.

Poland proposed that reporting for small refineries (production capacity less than 1 million tonnes per year) should be restricted, but due to the fact that they account for approximately 30 % of the total pollution load from this sector no changes to this point is proposed.

Recommendation for issues to be considered in the future revision

The limit values in the Recommendation are quite loose for the refineries in the western countries, but some (usually smaller) refineries still exceed the limit values. The outcome of the EU BREF which is under preparation (and possibly ready in 2001) should be taken into account in the next revision of the HELCOM Recommendation.

OIL REFINERIES

HELCOM RECOMMENDATION 6/2

(supersedes HELCOM Recommendation 5/2)

~~Adopted 13 March 1985,~~
having regard to Article ~~13~~,
Paragraph b) of the Helsinki Convention 1992

RECOMMENDATION CONCERNING ~~RESTRICTION~~ *REDUCTION* OF DISCHARGES FROM OIL REFINERIES

THE COMMISSION,

~~**RECALLING** that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), the Contracting Parties shall take all appropriate measures to control and strictly limit pollution by noxious substances,~~

~~**RECALLING ALSO** that Annex II of the Helsinki Convention defines oil as a noxious substance for the purposes of Article 6 of the Convention,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available* ~~technology~~ techniques *for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances, including oils and hydrocarbon of petroleum origin, listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNIZING that oil refineries are one of the main source of oil pollution,

BEING MINDFUL of the pollution caused by oil refineries,

DESIRING to limit this pollution by accomplishing the treatment of oil refinery effluents corresponding to modern technology,

DESIRING ALSO to have more adequate information on the total discharges into the Baltic Sea of oil and oil products,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,*

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

1. (Recommendation 6/2 para. a) at new oil refineries the following provisions should be applied as from the beginning of the production:

a) (Recommendation 6/2 para. a.i) cooling waters should be separated from other waters and retained uncontaminated by oil;

b) (Recommendation 6/2 para. a.ii) storm waters from polluted plant areas should be collected and connected to treatment plants; and

c) (Recommendation 6/2 para. a.iii) waste waters should be subject to biological or other equally effective treatment. The oil content (measured using IR spectroscopy) of the effluent should not exceed the monthly average of 5 mg/l and the total discharge should not exceed 3 grammes per ton of crude oil and other feed stocks, processed;

2. (Recommendation 6/2 para. b) at existing refineries the following provisions should be applied:

a) (Recommendation 6/2 para. b.i) ~~as from 1987~~ storm waters from polluted plant areas should be collected and connected to treatment plants;

b) (Recommendation 6/2 para. b.ii) ~~as from 1994~~ cooling waters should be separated from other waters and retained uncontaminated by oil;

c) (Recommendation 6/2 para. b.iii) ~~as from 1990~~ waste waters should be subject to biological or equally effective treatment and the oil content (measured using IR spectroscopy) of the effluent should not exceed the monthly average of 5 mg/l, and the total discharge should not exceed 3 grammes per ton of crude oil and other feed stack processed,

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned above refer to the process waste water

3. Analysing methods

Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.

RECOMMENDS ALSO to the Governments of the Contracting Parties to the Helsinki Convention that corresponding TOC and/or COD Cr values should be measured and submitted whenever oil discharges are reported to the Helsinki Commission,

RECOMMENDS FURTHER that programmes drawn up to reduce pollution from oil refineries and results achieved should be reported every five years to the Helsinki Commission.

REPORTING FORMAT FOR HELCOM RECOMMENDATION 6/2 CONCERNING ~~RESTRICTION~~ REDUCTION OF DISCHARGES FROM OIL REFINERIES

Lead Country:

Country:
Year:

1. Name, site and type[1)] of the oil refinery. Refer also if there is a reception facility in the refinery and the storage capacity (m^3) and the treatment capacity (m^3/d).

2. Description of the cooling system

Cooling system	Yes / No	Cooling capacity (MW)
Air		
Water once through		
Water, recycled		

3. Waste water treatment including:

Type of effluent	Flow of discharge (m^3/a)	Mineral oil concentration at exit of system (mg/l)	Type of treatment[2)] (please tick): 1) gravity separation; 2) advanced separation; 3) biotreatment.
Process water			
Uncontaminated cooling water			
Cooling water, contaminated or mixed with other cont-aminated waters			
Storm- and other surface water run-off			
Ballast water			
Other, specify what			
Which types of effluents are mixed with other waste water streams before treatment?			

4. Feedstock and discharge of oil including:

total feedstock processed (10^6 t/a)	
oil refining capacity (10^6 t/a)	
total quantity of oil discharged (according to table under point 3) (t/a)	
ratio of oil discharged to feedstock processed (g/t)	
quantity of oil discharged due to accidental spillages (not included in c) (t/a)	

5. Analytical methods including:

Analytical method used to measure mineral oil concentration (please indicate if different for different waste water streams)	
Infrared: extraction solvent; wavelenghts; standard solution	
Gravimetric extraction solvent	
Sampling method and frequency	

6. Effluent loads other than mineral oil

Parameter	Concentration at exit of system*)	Total quantity discharged (t/a)
COD_{Cr}		
BOD		
TOC		
Total extractable		
Phenolic compounds		
Other aromatic		
Sulphides		
Total nitrogen		

*) Before connection with cooling water

7. A brief description on eventual programmes drawn up to reduce the pollution caused by the refinery regarding storm waters, cooling waters, process waters. The description of programmes drawn up is especially important for refineries not in compliance with this Recommendation.

8. Have any changes taken place since the last HELCOM reporting round (during the last 3 years) regarding: refinery operations; effluent treatment system; other.

9. It would be helpful if refineries could provide a simple flow diagram of the refinery effluent system showing:

- the flow rates for the several streams (m^3/a);
- the main processing steps of the treatment plant;
- the location of the sampling and flow measuring points.

10. Summary of evaluation of compliance with the requirements of the Recommendation

	Yes	No	Partly
Collection and treatment of stormwaters			
Separation of cooling waters			
Biological treatment of all contaminated waste waters			
Oil content of the effluent < 5 mg/l			
Total oil discharged ≤ 3 g/ton crude			
Problems encountered in the implementation of the requirements and the foreseen development of the situation			

[1] Note: Type I - Simple refinery: composed of crude oil distillation units, catalytic reforming units and facilities for the treatment of distillate products including desulphurization.
Type II - Type I plus catalytic cracking and/or thermal and/or hydrocracking.
Type III - Type II plus stream cracking in refineries only and/or production of lubrificants within refinery fence.
Type IV - Type II and Type III plus petrochemical industry.
Type V - Production of lubrificants only (not included in the Recommendation 6/2.

[2] Note: 1) e.g. API, CPI, Tank
2) e.g. Chemical addition, Air flotation, Sedimentation, Filtration
3) e.g. Trickle filter, Activated sludge, Aerated pond.

4.1.8 Chlor-alkali industry (Recommendation 6/3)

General

HELCOM has issued one Recommendation concerning measures aimed at the reduction of mercury discharges from chloralkali industry.

Short comparison of HELCOM, OSPAR and EU requirements

Discrepancy in terms of emissions to water between HELCOM and PARCOM

PARCOM has three decisions concerning and one Recommendation this topic:

- Decision on limit values for mercury emissions in water from existing and new brine recirculation chlor-alkali plants (exit of the purification plant)
- Decision on limit values for existing waste brine chlor-alkali plants
- Decision on limit values for existing brine recirculation chlor-alkali plants (exit of the factory site)
- Recommendation on limit values for mercury emissions in water from existing brine recirculation chlor-alkali plants (exit of factory site)

The limit values are the following:

Existing and New Brine Recirculation Chlor-alkali plants (exit of purification plant)	0.5 g Hg per metric tonne of chlorine production capacity (monthly mean) 2.0 g Hg per metric tonne of chlorine production capacity (daily mean)
Existing Waste Brine Chlor-alkali plants	5.0 g Hg per metric tonne of chlorine production capacity (monthly mean)
Existing Brine Recirculation Chlor-alkali plants (exit of the factory site)	0.5 g Hg per metric tonne of chlorine production capacity (monthly mean) 2.0 g Hg per metric tonne of chlorine production capacity (daily mean)

The HELCOM Recommendation contains only one single paragraph concerning emissions to water ("a) the total quantity of mercury in all water discharged from the site of the industrial plant should not exceed the monthly average of 1 g per ton chlorine production capacity from 1986".)

Discrepancy in terms of emissions to the atmosphere between HELCOM and PARCOM

PARCOM has one Recommendation concerning reduction of emissions to the atmosphere (PARCOM Decision 90/3) in which the Contracting Parties to the Paris Convention have agreed that existing mercury-based chlor-alkali plants should be required to meet, by December 1996, a standard of 2 g Hg/tonne chlorine capacity for emissions into the atmosphere, unless there is a firm commitment that the plant will be converted to mercury-free technology by the year 2000. The mercury in hydrogen released into the atmosphere, or burnt, is included in this standard.

HELCOM has two different paragraphs:

- one for losses in ventilation air ("b) technology should be developed and high-effective vacuum equipment in departments should be put into operation so that the losses in ventilation air are less than 2.0 g per ton chlorine production capacity"); and

- and the other for the monthly average amount of mercury in hydrogen gas ("d) the monthly average amount of mercury in hydrogen gas should be reduced to 0.2 g per ton chlorine produced")

PARCOM has also issued one decision (90/3) on the phase out of mercury cell chlor-alkali plants by 2010. The change of the dead line for phase out is however under discussion. HELCOM has no such Recommendation for phase out.

EU requirements

The EU BREF on Chlor-alkali manufacturing industry (Draft 2000) does not regard mercury cell chlor-alkali production as BAT. The EU BREF on Chlor-alkali manufacturing industry (Draft 2000) takes considerations to the following substances associated to the activities and which could have an effect on emissions or pollution:

- relating to air: metals and their compounds (mercury); asbestos (suspended particulates, fibres); chlorine and its compounds; dioxins and furans
- relating to water: organohalogen compounds, metals (mercury).

The Daughter Directive 82/176/EEC on limit values and quality objectives for mercury discharges by the chlor-alkali electrolysis industry contain limit values concerning discharge to water and are at the same level as the HELCOM Recommendation.

Amendments made to the Recommendation

The Recommendation is quite old and contains some requirements which should have been implemented more than 10 years ago. Such obsolete requirements are suggested to be deleted (e.g. paragraph b of the Recommendation: "technology should be developed and high-effective vacuum equipment in departments should be put into operation so that the losses in ventilation air are less than 2.0 g per ton chlorine production capacity.")

A Recommendation on using internationally accepted analysing standards for emission analysis was added.

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

> *Provisions similar to the ones in the EU Directive on measurement procedures are included in square brackets (it is to be decided if it is needed).*

Amendments made to the reporting format

The reporting format is slightly modified according to the general format agreed for industrial Recommendations at LAND 1/00. The order of some questions was arranged and emission data is asked in table format.

Recommendation for issues to be considered in the future revision

Only three Contracting parties (Sweden, Finland and Poland) have mercury cell chlor-alkali production in the catchment area, and the Recommendation can be considered as almost fully implemented. Sweden and Finland as Contracting parties to OSPAR are also committed to phase out mercury cell production by

2010. As mercury cell chlor-alkali production has decreased significantly and will presumably totally cease in one decade in at least two of the three countries left it might be worthwhile to consider to include a Recommendation on a phase out of mercury cell production in the whole catchment area by 2010. As the present limit values are quite loose, more stringent limit values should be set (at least as stringent as in OSPAR). This would be especially important if no commitment on a phase out can be reached.

CHLORALKALI INDUSTRY

HELCOM RECOMMENDATION 6/3

~~Adopted 13 March 1985,~~
having regard to Article ~~13~~ x,
Paragraph b) of the Helsinki Convention 1992

RECOMMENDATION CONCERNING ~~MEASURES AIMED AT~~ THE REDUCTION OF *EMISSIONS AND* DISCHARGES OF MERCURY FROM CHLORALKALI INDUSTRY

THE COMMISSION,

~~**RECALLING** that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), the Contracting Parties shall take all appropriate measures to control and strictly limit pollution by noxious substances,~~

~~**RECALLING ALSO** that Annex II of the Helsinki Convention defines mercury as a noxious substance for the purposes of Article 6 of the Convention,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available* ~~technology~~ techniques *for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1, including mercury, which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNIZING that chloralkali industry is one of the main sources of pollution by mercury,

BEING MINDFUL of the pollution caused by chloralkali industry,

DESIRING to limit this pollution by accomplishing the treatment of chloralkali industry effluents corresponding to modern technology,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant*

substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

1. (Recommendation 6/3 para. a) ~~best technical means~~ *best available techniques* should be used in industrial plants ~~to be constructed after 1986~~ to minimize pollution by mercury; and

2. (Recommendation 6/3 para. b) the existing industrial plants in operation should meet the following requirements:

a) the total quantity of mercury in all water discharged from the site of the industrial plant should not exceed the monthly average of 1.0 g per ton chlorine production capacity ~~from 1986~~;

b) technology should be developed and high-effective vacuum equipment in departments should be put into operation ~~before 1987~~ so that the losses in ventilation air are less than ~~5.0 g per ton chlorine production capacity, and less than~~ 2.0 g per ton chlorine production capacity ~~as target for 1990~~;

c) the annual average mercury concentration in alkali should be reduced ~~to 0.5 mg/l before 1987 and~~ to 0.3 mg/l ~~by 1990~~;

d) the monthly average amount of mercury in hydrogen gas should be reduced ~~to 1.0 g per ton chlorine produced by the end of 1986 and~~ to 0.2 g per ton chlorine produced ~~by 1990~~.

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned above refer to the process waste water

4. Internationally accepted standardised sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.

[In order to check whether the discharges comply with the requirements in this Recommendation the following measurement procedure should be provided for:
— the taking each day of a sample representative of the discharge over a period of 24 hours and the measurement of the mercury concentration of that sample, and
— the measurement of the total flow of the discharge over that period at an accuracy of +/-20 %.
The quantity of mercury discharged during a month must be calculated by adding together the quantities of mercury discharged each day during that month. This total must then be divided by the installed chlorine production capacity.] This text from the EU Directive 82/176/EEC could be added if assessed needed.

RECOMMENDS ALSO that measures taken in accordance with this Recommendation and the analyses and estimation methods used should be reported to the Commission ~~one year after the adoption of this Recommendation~~ *in 2003* and thereafter every 3 years,

RECOMMENDS FURTHER that the Contracting Parties, whenever possible, apply even more stringent measures than stated above aimed at the reduction of mercury from chlor-alkali industry.

REPORTING FORMAT FOR HELCOM RECOMMENDATION 6/3 CONCERNING REQUIREMENTS FOR THE REDUCTION OF *EMISSIONS AND* DISCHARGES OF WASTE WATER FROM THE CHLOR-ALKALI INDUSTRY

Lead Country:

Country:
Year:

1. Name, location and type of type of technology used at each plants.

2. Information on measures taken to reduce mercury emissions to water and to atmosphere at each plant.

3. Data for waste water discharges and emissions to the atmosphere for each plant separately

Plant (No.)	Total quantity of mercury [1)] in all waste water discharged (g/t production capacity)	Mercury losses in ventilation air (g/t production capacity)	Amount of mercury in hydrogen gas [1)] (g/t chlorine produced)	Mercury concentration in alkali [2)] (mg/l)

[1)] monthly average
[2)] annual average

4. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.1.9 Production and formulation of pesticides (Recommendation 14/2)

General

HELCOM has issued one Recommendation 14/2 concerning the limitation of discharges into water and emissions into the atmosphere from production and formulation of pesticides.

Short comparison of HELCOM, OSPAR and EU requirements

There are no equal specific EU and OSPAR requirements in this sector.

Amendments made to the Recommendation

The structure of the Recommendation has been divided into three parts:
1. General requirements
2. Requirement for the reduction of waste water discharges
3. Requirements for air emissions

Additionally a fourth paragraph on using internationally accepted analysing standards for emission analysis was added.

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

Table B:
Requirements on toxicity of the waste water expressed in the table B and underlying three paragraphs is unclear and leads into misinterpretations. In example, it is not mentioned whether the toxicity tests should be carried out as acute or chronic tests. Also it is not clear what is the effect level required to be achieved by the required dilution given in the table. The German "G" –values used for the criteria are quite unknown. The required toxic effect level to be achieved by the dilution is brought up only in the fish test example thus not being a Recommendation but an example.

Sweden proposed to use in the requirements table the term of more common toxic unit as well as to define the required time of the test. From toxicity unit the toxicity emission rate and toxicity emission factor can also be conducted. The testing time is fixed in the standard toxicity tests, but it should be underlined in the Recommendation. Sweden also proposed using EC50 level instead of "no effect level". If the EC50 would be the required as the threshold effect to be achieved, the values in the table should be, however, agreed again.

The proposed new text and table fixes the test type, the threshold effect level of TU and testing time (taken from CEN and OECD standards). However, the use of TU or other method should be maybe discussed more widely.

A preamble is proposed to be added on recalling the general Recommendation on chemical industry 20E/6, which should cover the requirements which are not mentioned under this Recommendation.

Amendments made to the reporting format

The reporting format is slightly modified according to the general reporting format for industrial Recommendations agreed at LAND 1/00. The threshold stated in the Recommendation for industries was added also for reporting (industries formulating more than 5.0 t/a of active substance).

Recommendation for issues to be considered in the future revision

The structure of the present Recommendation is (with adopted amendments) quite transparent and no immediate significant revisions are assessed necessary. It is assessed reasonable to keep a Recommendation on this sector even in near future if updated at regular intervals. It could however be considered if this Recommendation could be merged with the general Recommendation on chemical industry 20E/6. The reporting could be kept separate if assessed necessary.

PRODUCTION AND FORMULATION OF PESTICIDES

HELCOM RECOMMENDATION 14/2

Adopted 3 February 1993
having regard to Article ~~13~~ x, Paragraph b)
of the Helsinki Convention

~~LIMITATION~~ REDUCTION OF DISCHARGES ~~INTO WATER~~ AND EMISSIONS ~~TO THE ATMOSPHERE~~ FROM PRODUCTION AND FORMULATION OF PESTICIDES

THE COMMISSION,

~~**RECALLING** Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,~~

~~**RECALLING ALSO** that according to Paragraph 2 of Article 2 of the Helsinki Convention land-based pollution includes also airborne pollution,~~

~~**RECALLING ALSO** that according to Paragraph 8 of Article 6 of the Helsinki Convention, the Contracting Parties undertake to endeavour to use best practical means in order to minimize airborne pollution of the Baltic Sea by noxious substances,~~

~~**HAVING REGARD** to the Ministerial Declaration of 1988 and to the Baltic Sea Declaration of 1990 calling, inter alia, for a substantive reduction of the load of pollutants most harmful to the ecosystem of the Baltic Sea,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available Techniques for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECALLING FURTHER Recommendation 20E/6 on chemical industry, which also applies to the production of and formulation of pesticides for the requirements which are not covered by this Recommendation

RECOGNIZING the importance of reducing discharges into water and emissions to the atmosphere from the production and formulation of pesticides as a source of substances with toxic, persistent and bioaccumulative properties of pesticides,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,*

RECOMMENDS to the Governments of the Contracting Parties to apply the following measures to the plants which produce or formulate more than 5.0 t/a of active substance(s)

1. General requirements

(Recommendation 14/2 para. 1) Liquid concentrates out of the production or formulation processes should be kept away from water, be recycled for the active substances and/or solvents or be incinerated.

2.*Requirements for the reduction of waste water discharges*

2.1 (Recommendation 14/2 para. 2) Waste waters which occur continuously or discontinuously, e.g. during synthesising, washing and rinsing processes, should be reused as far as possible and should be treated to meet the following requirements for discharge into waters:

	2 h or 24 h-sample
Adsorbable Organic Halogen (AOX)	1.0 mg/l
Copper[1)] (Cu)	0.5 mg/l
Chromium, total[1)] (Cr-tot)	0.5 mg/l
Chromium-VI[1)] (Cr-VI)	0.1 mg/l
Zinc [1)] (Zn)	2.0 mg/l
Arsenic[1)] (As)	0.3 mg/l
[1)] only if expected in waste water, e.g. from production of wood preservatives	

2.2 *Acute ecotoxicity* ~~Toxicity tests~~

Toxicity to Fish	~~GF = 2~~ *TU(fish, 96 h)* 2
Toxicity to Daphnia	~~GD = 8~~ *TU(daphnia,48 h)* 8
Toxicity to Algae	~~GA = 16~~ *TU(algae, 72h)* 16
Toxicity to Bacteria	~~GB= 8~~ *TU(Vibrio fischeri, 0,5 h)* 8

Where for this Recommendation TU(testing organism, required acute toxicity testing time) = concentration of the substance to be tested / NOEC. For a waste water testing this equation can be written as follows: TU = 100 / <u>no effects</u> dilution rate (%) of waste water. The "no effect dilution rate"

should be observed with standard toxicity tests. The CEN, ISO or OECD acute toxicity testing standards should be used.

E.g. for daphnia criteria TU 8 means that the sewage water should be of such quality that it has to be diluted at the highest by 1:7 in order achieve a level of no effect concentration in a standard acute toxicity test for daphnia (where the testing time is 48 h).

Acute toxicity testing should be carried out at least for two of the four above presented organisms. Results from those tests have to comply with the requirements above.

~~Out of these four toxicity tests two should be chosen for testing and would have to fulfill the values mentioned above.~~

~~The toxic effect is determined in a test by using the different species (fish, daphnia, bacteria, algae) as test species and by applying various degrees of waste water dilutions, e.g. GF = 2 means that in waste water which is diluted by the factor 1 : 1 all fish are surviving during 48 hours.~~

~~If available the CEN toxicity testing standard should be applied.~~

2.3 In case of joint treatment of waste water out of production and formulation of pesticides with other waste waters in a biological treatment plant (industrial or municipal) the pretreatment for waste water out of production and formulation of pesticides should be run in such a manner that the biological process is not disturbed.

The requirements in 2.1 for AOX and heavy metals appeal also for the outlet of the biological treatment plant taking into account the dilution by the other waste water streams.

3. Requirements for the reduction of emissions to the air

Dust emissions into the atmosphere out of facilities for the production and formulation of pesticides should not exceed mass concentrations of 5.0 mg/m^3 (ndg) if the mass flow is 25 g/h or more.

4. Analysing methods

Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.

~~**RECOMMENDS ALSO** that these measures should be implemented by 1 January 1994 for new plants and by 1 January 1997 for existing plants,~~

RECOMMENDS FURTHER that the Contracting Parties report to the Commission in 1997 and thereafter every three years.

REPORTING FORMAT FOR HELCOM RECOMMENDATION 14/2 CONCERNING ~~LIMITATION~~ *REDUCTION* OF DISCHARGES ~~INTO WATER~~ AND ~~EMISSIONS TO THE ATMOSPHERE~~ FROM PRODUCTION AND FORMULATION OF PESTICIDES

Lead Country:
Country:
Year:

1. Number, name, location and producing/formulating capacity for every active substance of the plants *which produce or formulate more than 5.0 t/a of active substance.*

2. Summarized description of the sector including:

- description of waste water collection and treatment systems;
- measures taken to minimize the volume of waste water;
- recycling processes;
- actions taken to reduce discharges and emissions during the last 3 years.

3. Waste water discharge data

3.1 Waste water volume, and concentration of the parameters required in the Recommendation

		Concentration in mg/l					
Plant	waste water volume (m^3)	AOX	Cu	Cr-tot	Cr-VI	Zn	As

3.2 - Results from toxicity tests

Plant	*Testing frequency (indicate which tests are used)*	*Amount of exceedings of the toxicity criteria in year*	*TER ($1000m^3/d$)*

4. Data for emissions of dust and other relevant substances into the atmosphere

Plant	Mass flow (g/h)	Mass concentration (mg/m^3) (ndg)

5. Summary of evaluation of compliance with the requirements of the Recommendation including:
-problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.1.10 Glass industry (Recommendation 14/3)

Short comparison of HELCOM, OSPAR and EU requirements

PARCOM has no equivalent Recommendations nor decisions.

According to the EU BREF on glass industry (Draft September 1999) the major environmental challenges in this type of industry are emissions to air and energy consumption. Emissions to water environment are relatively low and there are few major issues that are specific to the glass industry. When considering the emissions from different sectors and installations it is important to consider, in addition to the emission concentration, the overall amount of any substance emitted and the mass emitted per tonne of product melt. The following emissions should be monitored according to the EU BREF:

- *emissions to air*: particulate matter; NOx; SOx; chlorides/HCl; Fluorides/HF; heavy metals (V, Ni, Cr, Se, Pb, Co, Sb, As, Cd); CO_2; CO and H_2S;
- *emissions to water*: SS; COD; ammoniac nitrogen; S; F; As; Sb; Ba; Cd; Cr; Cu; Pb; Ni.

The Contracting Parties to the Helsinki Convention need only to report the values for Pb, As, Sb and F for emissions to water and Pb, As, Sb, F and NOx for emissions to the atmosphere.

The HELCOM Recommendation contains some general requirements covered by the Convention.

Amendments made to the Recommendation

The structure of the Recommendation has been divided into three parts:
1. General requirements
2. Requirement for the reduction of waste water discharges
3. Requirements for the reduction of emissions to the air

Additionally a fourth para on using internationally accepted analysing standards for emission analysis was added.

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

Amendments made to the reporting format

The reporting format is slightly modified according to the general format agreed for industrial Recommendations at LAND 1/00. The order of some questions was changed.

Recommendation for issues to be considered in the future revision

The structure of the present Recommendation is (with adopted amendments) quite transparent and no immediate significant revisions are assessed necessary. It is assessed reasonable to keep a Recommendation on this sector even in near future if updated at regular intervals.

The significance of also other parameters than regulated under the present Recommendation should be considered eg. SOx, HCl, HF for emissions to the atmosphere and on used metals in the production of glass. It should be considered if NOx and other additional substances should be reported also for plants producing less than 20 000 t/a. Some of the present limit values are quite loose and they should be considered in the next revision.

In the revision the EU BREF should be taken into account (Final draft ready in August 2000).

GLASS INDUSTRY

HELCOM RECOMMENDATION 14/3

~~Adopted 3 February 1993~~
having regard to Article ~~13, Paragraph b)~~
of the Helsinki Convention 1992

~~LIMITATION~~ *REDUCTION* OF EMISSIONS ~~TO THE ATMOSPHERE~~ AND DISCHARGES ~~INTO WATER~~ FROM GLASS INDUSTRY

THE COMMISSION,

~~**RECALLING** Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,~~

~~**RECALLING ALSO** that according to Paragraph 2 of Article 2 of the Helsinki Convention land-based pollution includes also airborne pollution,~~

~~**HAVING REGARD** to the Ministerial Declaration of 1988 and to the Baltic Sea Declaration of 1990 calling, inter alia, for a substantive reduction of the load of pollutants most harmful to the ecosystem of the Baltic Sea,~~

~~**RECOGNIZING** the importance of reducing the emissions to the atmosphere and discharges into water from glass production by the use of Best Environmental Practice and Best Available Technology,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available ~~technology~~ techniques for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,*

RECOMMENDS to the Governments of the Contracting Parties that the following basic principles should be applied in glass industry::

1. General requirements.

a) (Recommendation 14/3 para. i) minimising the hazards to human health and to the environment from toxic, persistent and bioaccumulative substances by the application of Best Available T~~echnology~~ techniques;

b) (Recommendation 14/3 para. ii) developing processes and techniques for the collection and treatment of atmospheric emissions;

c) (Recommendation 14/3 para. iii) substituting hazardous substances as far as possible,

These include the following, or other as environmentally efficient, measures:

i) use of gas fired melting and heating or a combination of gas fired and electrical melting and heating;
ii) heat recovery;
iii) glass breakage in the batch;
iv) pelletizing of the batch;
v) covered furnace or doghouse encapsulation to avoid fugitive dust emissions;
vi) avoidance of heavy metal compounds in the raw materials as far as possible;
vii) lime-reactor for cleaning of fluoride, boron and SO_x,

2.Requirements for the reduction of waste water discharges of the plant.

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned above refer to the process waste water

(Recommendation 14/3 para. 3) Mechanical processing of glass should require recirculation of process waters. Wastewater from glass industry which is discharged into water bodies or municipal treatment plants should not exceed the following limit values ***as a 2 or 24 hour value***:

Lead (Pb)	1.0 mg/l
Arsenic (As)	0.3 mg/l
Antimony (Sb)	0.5 mg/l
Fluoride (F)	30 mg/l

3. Requirements for the reduction of emissions to the air

a) (Recommendation 14/3 para. 1) Fabric filters or other dry technology for gas cleaning should be used. The dust concentration in emitted process gases should not exceed 50 mg/m^3 (ndg). If raw material contains heavy metals the dust concentration should not exceed 10 mg/m^3 (ndg) or alternatively 5 mg Pb/m^3 (ndg) and 1 mg As/m^3 (ndg),

b) (Recommendation 14/3 para. 2) The NO_x emissions may, by catalytic or equally efficient process, not exceed 2.5 kg per produced tonne glass, calculated as NO_2, if the capacity of the production unit is more than 20 000 t/a,

4. Analysing methods

Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.

~~**RECOMMENDS ALSO** that these measures should be implemented by 1994 for new plants and by 1998 for existing plants,~~

RECOMMENDS FURTHER that the actions taken by the Contracting Parties should be reported to the Commission in ~~1997~~ *2003* and thereafter every three years.

REPORTING FORMAT FOR HELCOM RECOMMENDATION 14/3 CONCERNING ~~LIMITATION~~ *REDUCTION* OF EMISSIONS ~~TO THE ATMOSPHERE~~ AND DISCHARGES ~~INTO WATER~~ FROM GLASS INDUSTRY

Lead Country:
Country:
Year:

1. Number, name, location and type of plants discharging directly into surface waters or into municipal sewers.

2. Annual production and total annual use of heavy metals, for each plant, in glass production

		Annual use of heavy metals (t/a)			
Plant (No.)	Annual production (t/a)	Pb	AS	Sb	F

3. Description of the measures taken by each plant:
- to achieve recirculation of waste water;
- to reduce atmospheric emissions including fugitive dust emissions;
- to reduce the use of hazardous substances;
- actions taken to reduce the discharges and emissions during the last 3 years.

4. Waste water volume, concentrations (mg/l) and annual loads (t/a) of Pb, As, Sb and F, for each plant, in waste water.

		Concentration (mg/l) and load (t/a) of heavy metals in waste water							
Plant (No.)	Waste water volume (m^3/a)	Pb		As		Sb		F	
		mg/l	t/a	mg/l	t/a	mg/l	t/a	mg/l	t/a

5. Total annual emissions to the atmosphere of dust, Pb, As, Sb and F (in mg/m^3) and the NO_x emissions (in kg/t).

	Total annual emissions (mg/m^3) to the atmosphere					NOx emissions (kg/t glass)
Plant (No.)	dust	Pb	As	Sb	F	NOx[1)]

[1)] NO_x emissions should be reported at least for each plant with a production exceeding 20 000 t/a.

6. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.1.11 Chemical industry (Recommendation 20E/6)

General

HELCOM has issued one Recommendation concerning chemical industry in general:

- HELCOM Recommendation 20E/6 on requirements for discharging waste water from the chemical industry.
- This is a recent Recommendation (adopted 7 September 1999) and no significant modifications is made to the Recommendation itself.

Short comparison of HELCOM, OSPAR and EU requirements

The HELCOM Recommendation 20E/6 is very general and covers a wide variety of different chemical industries, while PARCOM has issued specific Recommendation for organic chemical and pharmaceutical industry and the EU BREFs are also being prepared for several specific chemical industry branches. This makes comparison difficult even if it can be seen that limit values in the HELCOM Recommendation at least for some heavy metals seem quite loose.

The classification of the chemical industries in the attachment to the Recommendation is based on the UN ISIC classification system. The Manufacture of refined petrochemical products has been deleted from the classification list, as it is covered by a separate Recommendation. The UN classification system differs somewhat from the EU statistical classification (NACE) which is obligatory for EU member states.

We have also added the EU NACE classification to the end of the Recommendation to enable comparison of these two classification systems and it should be decided which system is to be used. Both classification systems cover the same industries.

Amendments made to the reporting format

The reporting format is modified according to the general format agreed for industrial Recommendations at LAND 1/00. This includes reporting in of some smaller installations in a more summarised way. The reporting of also smaller plants discharging directly to surface waters(<10m3/d) in a more summarised way has been reintroduced. The reporting obligation on “tests on overall persistence and bioaccumulation characteristics of the organic substances of the effluent, if available” has been reintroduced. Water consumption has been changed to waste water volume.

Recommendation for issues to be considered in the future revision

There are certain advantages to keep the HELCOM Recommendation general to cover a wide range of different industries in the chemical sector. It could however be considered if reporting could be developed to be divided into categories which would be comparable to OSPAR/EU requirements.

It should be kept in mind that HELCOM has issued two specific chemical industry Recommendations (17/6 Fertiliser production and 14/2 pesticide production) which should be at least recalled in the preambles. For the requirements, which are not covered by the specific Recommendations this general Recommendation should apply. It should even be considered if the Recommendation on pesticide production could be merged together with this general Recommendation already soon. The reporting could be kept separate if assessed necessary. There has been no time to get views on this proposal during the project as this is a late proposal, but lead country Germany (for both Recommendations) could take it into account when making proposals for further consideration. The Recommendation on fertiliser production contains quite specific requirements and we anyhow propose to keep it as a separate Recommendation.

The limit values in the Recommendation should be checked for some parameters, eg the limit value for Cd is quite loose. The classification of the installations should be comparable to the EU NACE classification. The outcome of the different EU BREFs for the chemical industry should be taken into account in the future revision.

CHEMICAL INDUSTRY

HELCOM RECOMMENDATION 20E/6[*)]

~~Adopted 7 September 1999~~
having regard to Article 13, ~~Paragraph b)~~
of the Helsinki Convention 19~~7~~92

~~REQUIREMENTS FOR DISCHARGING OF WASTE WATER~~ ***REDUCTION OF DISCHARGES*** **FROM THE CHEMICAL INDUSTRY** [1)]

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available ~~technology~~ techniques for point sources,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,

RECALLING ALSO Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1 which are generally recognised as harmful substances,

RECALLING FURTHER the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,

RECALLING FURTHER that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,

RECOGNIZING that the chemical industry is responsible for an important part of the discharges of hazardous substances into the Baltic Sea,

DESIRING to limit the discharges from this industry in line with best available ~~technology~~ techniques,

DESIRING ALSO to implement HELCOM Recommendation 9/8 concerning measures aimed at the reduction of discharges from industry, *[To be deleted if the referred Recommendation is deleted]*

RECOMMENDS to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available ~~technology~~ techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,

RECOMMENDS to the Governments of the Contracting Parties that they apply the following requirements to chemical industries producing waste water which is discharged into waters or municipal sewerage systems

1. General requirements

Waste water should only be discharged if the waste water volume and pollutant load are minimised by the use of best available technologies, inter alia:

a) separation of process water from cooling water;

b) separate pre-treatment of waste water containing substances which due to their specific properties should preferably be removed prior to the final treatment;

c) combined treatment of different waste waters containing hazardous substances only if an adequate reduction of the pollutant load is achieved compared to the purification of every single waste water stream;

d) use of water-saving techniques in washing and cleaning processes such as water circulation and counter-current washing;

e) multiple use of process water;

f) indirect cooling systems and condensation of vapours and organic liquids instead of direct cooling systems;

g) processes for generating vacuum, which do not produce waste water, should be used if there is the possibility that hazardous substances get into the water;

h) processing of mother-liquors, e.g. for recovery of materials or energy;

i) substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,

j) adequate equipment for monitoring of effluent parameters should be used, e.g. flow, pH and oxygen concentration.

2.*Requirements for the reduction of waste water discharges*

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned below refer to the process waste water. The total load of the parameters COD or TOC, nutrients, AOX and heavy metals should be minimised first according to the main principles mentioned above and to measures specified in Paragraph 1 (General requirements).

The below mentioned requirements are based on 2- to 24-hour values.

2.1 Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC)

For plants discharging into water bodies the reduction of COD- or TOC-load in pre- and final waste water treatment facilities should be at least 80%. This requirement should also be regarded as fulfilled when BAT has been applied and the concentration in the effluent of the plant of COD is lower than 250 mg/l or the concentration of TOC is lower than 80 mg/l.

2.2 Phosphorous and Nitrogen

For plants discharging into water bodies the concentration of total-Phosphorus in effluent should not exceed 2.0 mg/l and for total-Nitrogen [2)] should not exceed 50 mg/l. The requirement for Nitrogen is fulfilled if the concentration does not exceed 75 mg/l and the reduction rate is at least 75%.

2.3 Adsorbable Organic Halogen (AOX)

For plants discharging into water bodies or connected to municipal sewerage system the concentration of AOX should not exceed 1.0 mg/l. This requirement should also be regarded as fulfilled if the reduction of the AOX-load in the pre- and final waste water treatment facilities is at least 80%.
These requirements should neither be exceeded in the effluent after final treatment for plants discharging into water bodies nor in the effluent connected to municipal sewerage systems.

2.4 Heavy metals

For plants discharging into water bodies or connected to municipal sewerage system the concentration should not exceed the following values:

Mercury (Hg)	0.05 mg/l
Cadmium Cd)	0.2 mg/l
Copper (Cu)	0.5 mg/l
Nickel (Ni)	1.0 mg/l
Lead (Pb)	0.5 mg/l
Chromium (Cr)	0.5 mg/l
Chromium VI (Cr-VI)	0.1 mg/l
Zinc (Zn)	2.0 mg/l

These requirements should neither be exceeded in the effluent after final treatment for plants discharging into water bodies nor in the effluent connected to municipal sewerage system.

2.5 Toxicity of the effluent

For plants discharging into water bodies the toxicity effect of the waste water should be determined by two toxicity tests which could be chosen out of the following four toxicity tests:

- toxicity to fish
- toxicity to invertebrates (Daphniidae)
- toxicity to algae
- toxicity to bacteria

2.6 Analysing methods

Internationally accepted standardised sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards, OECD-Guidelines) should be used whenever available,

The frequency of analysis shall be determined by the competent authorities taking into account the results obtained.

RECOMMENDS ALSO that the above requirements and limit values be implemented by 1 January 2000 and for countries in transition by 1 January 2005,

RECOMMENDS FURTHER that the Contracting Parties report to the Commission in 2003 and thereafter every three years.

RECOMMENDS FURTHER to reconsider the Recommendation in 2003.

*) supersedes HELCOM Recommendation 16/5

1) Industrial plants according to the Standard Classification of Chemical Industry (see Appendix 1)

2) Total-N means the sum of total Kjeldahl nitrogen (organic N+NH4), nitrate (NO3)-nitrogen and nitrite (NO2)nitrogen

Appendix 1

HELCOM Recommendation 20E/6

Standard Classification of Chemical Industry [3)]

Manufacture of Chemicals and Chemical Products

1. Manufacture of basic chemicals

1.1 Manufacture of basic chemicals, except for fertilizers and nitrogen compounds
1.2 Manufacture of fertilizers and nitrogen compounds*[There is a separate Recommendation 17/6]*
1.3 Manufacture of plastics in primary forms and of synthetic rubber

2. Manufacture of other chemical products

2.1 Manufacture of pesticides and other agrochemical products *[There is a separate Recommendation 14/2 on pesticides]*
2.2 Manufacture of paints, varnishes and similar coatings, printing ink and mastics
2.3 Manufacture of pharmaceuticals, medical chemicals and botanical products
2.4 Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
2.5 Manufacture of other chemical products n.e.c.

3. Manufacture of man-made fibres

~~**Manufacture of Refined Petrochemical Products**~~

TO FACILITATE COMPARISON OF THE TWO CLASSIFICATION SYSTEMS (ISIC AND NACE) BOTH ARE SHOWED BELOW. IT SHOULD BE DECIDED IF THE EU NACE CLASSIFICATION SYSTEM IS TO BE USED

Standard Classification of Chemical Industry [3] :

Manufacture of Chemicals and Chemical Products (ISIC 24, corresponding NACE 24)

1. Manufacture of basic chemicals
1.1 Manufacture of basic chemicals, except for fertilizers and nitrogen compounds (ISIC 2411, corresponding NACE 241 except 2415, 2416 and 2417)
1.2 Manufacture of fertilizers and nitrogen compounds (ISIC 2412, corresponding NACE 2415)
1.3 Manufacture of plastics in primary forms and of synthetic rubber (ISIC 2413, corresponding NACE 2416 and 2417)

2. Manufacture of other chemical products

2.1 Manufacture of pesticides and other agrochemical products (ISIC 2421, corresponding NACE 242)
2.2 Manufacture of paints, varnishes and similar coatings, printing ink and mastics (ISIC 2422, corresponding NACE 243)
2.3 Manufacture of pharmaceuticals, medical chemicals and botanical products (ISIC 2423, corresponding NACE 244)
2.4 Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations (ISIC 2424, corresponding NACE 245)
2.5 Manufacture of other chemical products n.e.c. (ISIC 2429, corresponding NACE 246)

3. Manufacture of man-made fibres (ISIC 243, corresponding NACE 247)

Corresponding classification according to the European Council Regulation 3037/90 (NACE Rev. 1)

24 Manufacture of chemicals and chemical products

241 Manufacture of basic chemicals
2411 Manufacture of basic chemicals
2412 Manufacture of dyes and pigments
2413 Manufacture of other inorganic basic chemicals
2414 Manufacture of other organic basic chemicals
2415 Manufacture of fertilizers and nitrogen compounds
2416 Manufacture of plastics in primary forms
2417 Manufacture of synthetic rubber in primary forms

242 Manufacture of pesticides and other agro-chemical products

243 Manufacture of paints, varnishes and similar coatings, printing ink and mastics

244 Manufacture of pharmaceuticals, medicinal chemicals and botanical products
2441 Manufacture of basic pharmaceutical products
2442 Manufacture of pharmaceutical preparations

245 Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations

2451 Manufacture of soap and detergents, cleaning and polishing preparations
2452 Manufacture of perfumes and toilet preparations

246 Manufacture of other chemical products
2461 Manufacture of explosives
2462 Manufacture of glues and gelatines
2463 Manufacture of essential oils
2464 Manufacture of photographic chemical material
2465 Manufacture of prepared unrecorded media
2466 Manufacture of other chemical products n.e.c.

247 Manufacture of man-made fibres

The numbers are the ones used in the nomenclature according to NACE Rev.1.

3) This classification is based on International Standard Industrial Classification of all Economic Activities, Statistical Papers, Series M, no. 4, Rev.3. United Nations, New York 1989

REPORTING FORMAT FOR HELCOM RECOMMENDATION 20E/6 CONCERNING ~~REQUIREMENTS FOR DISCHARGING OF WASTE WATER~~ *REDUCTION OF DISCHARGES* FROM THE CHEMICAL INDUSTRY

Lead Country:

Country:
Year:

1. Number, name and location of plants discharging directly into surface waters or into municipal sewers (at least plants discharging directly into surface waters should be reported separately) and also description of the capacities and type of plant and production technology.

2. ***Summarized*** description of the sector including:

- application of BAT as specified in paragraph 1 of the Recommendation;
- efforts to reduce the use of hazardous substances;
- actions taken to reduce discharges during the last 3 years.

3. Emission data on plants discharging directly into surface waters ***(> 10 m3/d),*** for each plant separately, including:

3.1 - Waste water discharges

Plant (No.)	~~Water consumption~~ Waste water volume m^3/a (m^3/d)[1)]	Concentration (mg/l) and pollution load (t/a)									
		COD		TOC		tot-P		tot-N		AOX	

[1)] Process water only

	Rate of reduction (%)				
Plant	COD	TOC	tot-P	tot-N	AOX

3.2 - Heavy metal concentration and total load.

	Concentration in mg/l and total load in kg/a															
Plant	Hg		Cd		Cu		Ni		Pb		Cr-tot		Cr-VI		Zn	
	mg/l	kg/a	mg/l	kg/a	mg/l	kg/a	mg/l	kg/a	mg/l	kg/a	mg/l	kg/a	mg/l	kg/a	mg/l	kg/a

3.3 - Results from toxicity tests.

Results from toxicity tests ***and of tests on overall persistence and bioaccumulation characteristics of the organic substance of the effluent, if available***	

4.Summarized data on plants discharging directly to municipal sewers and small plants (< 10m3/d) discharging directly to surface waters including:

- data on pollutant concentration ranges
- number or percentage of plants which comply with the different requirements of the Recommendation (Please specify e.g. which parameters / requirements cause problems for compliance).

5. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.1.12 Leather industry (Recommendation 16/7)

General

HELCOM has issued one Recommendation 16/7 concerning basic principles in waste water management in the leather industry.

Short comparison of HELCOM, OSPAR and EU requirements

The IPPC BAT in this field of activity concerns plants producing more than 12 tonnes per day. The BAT emission levels described in the draft EU BREF are expressed as kg/product weight whereas in the HELCOM Recommendation the limit values are expressed per input hide.

There are no equivalent OSPAR provisions

Amendments made to the Recommendation

The structure of the Recommendation has been divided into four parts:
1. General requirements
2. Requirement for the reduction of waste water discharges
3. Requirements for air emissions
4. Analysing methods

Otherwise only slight modifications have been made to the Recommendation**.**

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

Amendments made to the reporting format

The reporting format is slightly modified according to the general format agreed for industrial Recommendations at LAND 1/00. Some questions were also modified to reflect the requirements in the Recommendation.

Recommendation for issues to be considered in the future revision

The structure of the present Recommendation is (with adopted amendments) quite transparent and no immediate significant revisions are assessed necessary. It is assessed reasonable to keep a Recommendation on this sector even in near future if updated at regular intervals.

The outcome of the EU BREF (possibly finalised in 2001) should be taken into account in the revision of the HELCOM Recommendation. It might be worthwhile to consider the change of HELCOM limit values to be expressed in relation to product weight as in the EU BREF while it would simplify comparison of emissions and future reporting. The BAT list included in the present Recommendation should also be checked and updated. It might also be relevant to include requirements on solid waste (especially waste water sludges) and air emissions (VOC, NH3) to the Recommendation.

LEATHER INDUSTRY

HELCOM RECOMMENDATION 16/7

~~Adopted 15 March 1995,~~
having regard to Article ~~13, paragraph b)~~
of the Helsinki Convention

~~BASIC PRINCIPLES IN WASTE WATER MANAGEMENT IN~~ ***REDUCTION OF DISCHARGES AND EMISSIONS IN*** **THE LEATHER INDUSTRY**

THE COMMISSION,

~~RECALLING~~ ~~Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to counteract the introduction of certain hazardous substances, as specified in Annex I of the Convention, into the Baltic Sea Area,~~

~~RECALLING ALSO~~ ~~that according to Article 6 of the Helsinki Convention all appropriate measures to control and strictly limit pollution by noxious substances listed in Annex II of the Convention, shall be taken, and that according to Annex III of the Convention the pollution load of industrial wastes shall be minimized,~~

~~RECALLING FURTHER~~ ~~that the Ministerial Declaration of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available Techniques for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNIZING that the leather industry is responsible for a part of the discharges of hazardous substances, especially chromium, into the Baltic Sea,

RECOGNIZING ALSO that many leather industry plants discharge to municipal sewerage systems where HELCOM Recommendation 13/2 should be applied,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,*

RECOMMENDS to the Governments of the Contracting Parties that they apply to leather industry plants discharging into water bodies or municipal sewerage systems, the following basic principles:

1. General requirements

(Recommendation 16/7 para. a) To reduce pollution loads from the leather industry Best Available ~~Technologies~~ *Techniques* as per examples listed in ~~Appendix 1~~ *Attachment 1*, should be selectively applied.

2. *Requirements for the reduction of waste water discharges*

a) (Recommendation 16/7 para. b)Waste water discharges into either ***surface*** waters or municipal sewerage systems should be treated using optional waste water treatment processes, examples of which are listed in ~~Appendix 2~~ *Attachment 2*;
b) (Recommendation 16/7 para. a) It is essential to reduce the volume of waste water discharges through, i.a., a specific water consumption reduction to a maximum rate of 50 m^3/t input hide
c) (Recommendation 16/7 para. c)The limit values for waste water discharges from the leather industry into water bodies or municipal sewerage systems should not exceed the following values ***(without dilution)***:

Crtot - 0.075 kg/t input hide as annual mean and 1.5 mg/l Cr as 24 h-value or shorter sampling period
CODCr - 20 kg/t input hide as annual mean for discharges to water bodies and for discharges into sewerage systems which are not connected to municipal treatment plants

tot-N - 8 kg /t input hide as annual mean for discharges to water bodies and for discharges into sewerage systems which are not connected to municipal treatment plants

3. Requirements for the reduction of emissions to the air

(Recommendation 16/7 para. d) The tanning odour influence should be taken into account in siting of a new production unit as well as in a sludge dumping location

4. Analysing methods

Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available;

RECOMMENDS ALSO that the above limit values should be implemented for production units newly constructed or reconstructed ~~by 1 January 1996~~, and for existing units ~~by 1 January 2000~~,

DECIDES that the above limit values be re-examined in ~~1998~~ *200x*,

RECOMMENDS FURTHER that the Contracting Parties report to the Commission every three years starting in ~~1997~~ *2003*.

REPORTING FORMAT FOR HELCOM RECOMMENDATION 16/7 CONCERNING ~~BASIC PRINCIPLES IN WASTE WATER MANAGEMENT~~ *REDUCTION OF DISCHARGES AND EMISSIONS IN THE LEATHER* INDUSTRY

Lead Country:

Country:
Year:

1. Number, name and location of the plants. Please indicate which plants discharge directly into surface waters and which to municipal sewers.

2. ***Summarized*** description of the sector including:

- description of applied technological processes including the application of BAT and waste water treatment processes (see also examples listed in the attachments to the Recommendation);
- wastewater sludge treatment;
- actions taken to reduce discharges during the last 3 years;

3. Production and emission data on plants discharging directly to surface waters and municipal sewers.

Plant	Actual production (tonnes of input hide/a or m^2/a)	Water consumption (m^3/a)

	Load (t/a)			Specific load (kg/t) and max concentration (mg/l) for Cr-tot			
Plant	Cr-tot	COD_{Cr}	tot-N	Cr-tot		COD_{Cr}	tot-N
				load	concentration		

4. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.1.13 Textile industry (Recommendation 16/10)

General

HELCOM has issued one Recommendation concerning reduction of discharges from production of textiles.

Short comparison of HELCOM, OSPAR and EU requirements

PARCOM has issued one Recommendation concerning reference values for effluent discharges from wet processes in the textile processing industry (Recommendation 97/1) and one Recommendation BAT and BEP for this industry 94/5**.** The PARCOM Recommendation 97/1 contains limit values for additional metals compared to the HELCOM Recommendation (eg. Cd, As, Pb). The limit values for Cr (both total and Cr VI) are stricter in the PARCOM Recommendation. The PARCOM Recommendation also contains requirements expressed as mg/kg of textiles processed for different cases/processes.

The EU BREF concerns industries producing > 10 t/d.

Some ecolabels (Nordic Environmental Label, Öko-tex Standard) include requirements on pesticide content from textile processes. Several of the textile industries in the Baltic sea region only perform textile finishing and the risk of pesticides ending up in waste waters is small. There are however industries left in some of the Contracting Parties where the processing of textile fibres still exists for which controls on pesticide content might be relevant

Amendments made to the Recommendation

The structure of the Recommendation has been divided into four parts:
1. General requirements
2.Requirement for the reduction of waste water discharges
3. Requirements for air emissions
4. Analysing methods

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly). Otherwise no significant modifications were made in this Recommendation.

Amendments made to the reporting format

The reporting format is modified according to the general format agreed for industrial Recommendations at LAND 1/00.

Recommendation for issues to be considered in the future revision

The structure of the present Recommendation is (with adopted amendments) quite transparent and no immediate significant revisions are assessed necessary. It is assessed reasonable to keep a Recommendation on this sector even in near future if updated at regular intervals.

Taking into account the outcome of the EU BREF (probably not finalised before 2002) the Recommendation should be revised (applied BAT, limit values and the expression of them). In the revision the need for including limit values for additional metals should be considered. (It might also be worthwhile to consider if provisions on pesticide content (monitoring, measuring requirements) should be included for textile plants performing fibre conditioning)

TEXTILE INDUSTRY

HELCOM RECOMMENDATION 16/10

~~Adopted 15 March 1995~~
having regard to Article ~~13, Paragraph b)~~
of the Helsinki Convention

REDUCTION OF DISCHARGES AND EMISSIONS FROM PRODUCTION OF TEXTILES

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea Area from land-based sources, *by using , inter alia, Best Environmental Practice for all sources and Best Available Techniques for point sources,*

~~**RECALLING ALSO** the Ministerial Declaration of the ninth meeting of the Helsinki Commission,~~

~~**RECALLING ALSO** the Baltic Sea Declaration of 1990,~~

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING ALSO that according to Paragraph 2 of Article 2 of the Helsinki Convention land-based pollution includes also airborne pollution,

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNIZING the importance of reducing the discharges into waters and the emissions into the atmosphere from the production of textiles because of the use or creation of substances with toxic, persistent and bioaccumulative properties during the production process,

RECOGNIZING the importance of HELCOM Recommendation 13/2 concerning industrial connections to municipal sewage systems for the production of textiles,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant*

substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,

RECOMMENDS that the Governments of the Contracting Parties to the Helsinki Convention agree on the following definitions for the purposes of this Recommendation

* "Textile" means any product derived from the manufacture of natural fibres such as wool, cotton, flax and/or the manufacture of fibres synthesized and processed from petrochemicals and modified wood pulp such as polyester, nylon, polypropylene and viscose. These products can be yarns, fabrics or consumer products (e.g. garments, carpets, upholstery, technical textiles)

* "Textile Production" means the preparation of natural and man-made (semi-natural and synthetic) fibres, including both:

a) the mechanical processes such as carding, spinning, weaving, knitting or tufting, and

b) the physicochemical processes which mainly take place in aqueous ('wet') media, such as the pretreatment, the colouring or printing and the finishing of the fibres, yarns and fabrics.

The upstream delimitation is the production of the raw material from which a treatable fibre can be produced (both the growing of natural fibres and the production of (semi-)chemical fibres, such as viscose); these processes are not considered in this Recommendation.

The downstream delimitation is determined by the last process which alters the intrinsic properties of yarns and fabrics, before they are handled or reassembled into final products (clothing industry, etc.),

RECOMMENDS FURTHER to the Governments of the Contracting Parties that they take the following measures to reduce pollution from production of textiles

1. General requirements

The application of best available ~~technology~~ techniques (BAT) to the production of textiles should include the following techniques of abatement, recycling and treatment to reduce the discharges into waters and the emissions into the atmosphere:

- non-use of Chromium (VI) as oxidation agent for sulphur dyes;

- non-use of the hazardous substances polychlorinated biphenyles (PCB) and pentachlorophenol;

- non-use of arsenic, mercury and their compounds as biocides;

- substitution of hazardous substances as e.g. trichlorobenzenes and alkylphenolethoxilates (APEO);

- use of chlorinated substances as solvents only in air-closed systems with recirculation of the solvent except for use in small quantities for spot removal in order to avoid wasting of valuable produced textile. They should only be used when their overall environmental impact is considered less damaging than other methods for grease removal;

- use of hydrocarbons which contain minimized content of aromatic hydrocarbons (with a percentage of carbon atoms linked in aromatic rings of less than 1 per cent).

According to a case-by-case evaluation it should be decided whether the following techniques could be realized in the plant:

- substitution of bleaching with chlorine-containing substances (e.g. hypochlorite) by bleaching with non-chlorine-containing substances (e.g. H2O2);

- separation, concentration (e.g. ultra filtration) and reuse of synthetic sizes (e.g. polyacrylates and polyvinylalcoholes);

- no discharge into waste water of liquid or solid unused concentrates (e.g. remains of dyes, sizes or painting pastes);

- reuse of sodium hydroxide from washing water from the mercerizing process;

- separation of hot and cold waste water to establish regaining of heat;

- reuse of low contaminated washing waters by e.g. counterflow techniques for continuous processes; in discontinuous processes overflow-rinsing should be avoided (i.e. the process bath should be emptied before rinsing takes part);

- use of equipment that gains the conservation of energy, water and chemicals (e.g. controlled addition of chemicals by automatized colour-kitchen and computerized recipes).

2.*Requirements for the reduction of waste water discharges*

2.1 The following limit values should not be exceeded for discharges into surface water

	2 hr or 24 hr sampling	
Chemical Oxygen Demand (CODCr)	160 mg/l	
Phosphorous total (tot-P)	2 mg/l	
Colour [1], [2]: spectral absorption coefficient at	436 nm	7 m-1
	525 nm	5 m-1
	620 nm	3 m-1

[1] according to Section 2 of EN 27887

[2] other determination methods could be used if it can be shown that the results are comparable and equivalent

2.2 The following limit values should not be exceeded for discharges into surface waters and municipal treatment plants

Active Chlorine	1.0 mg /l [3]
Adsorbable organic halogens (AOX)	1.0 mg/l
Chromium-VI (Cr-VI)	0.2 mg/l
Chromium, total (Cr-tot)	0.7 mg/l
Copper (Cu)	0.5 mg/l
Zinc (Zn)	2.0 mg/l

[3] only be measured if hypochlorite or chlorodioxide is used in the plant

2.3 Toxicity Tests

The toxicity effect of discharges into water bodies should be determined by (at least) two toxicity tests which could be chosen out of the following four toxicity tests

- toxicity to fish;
- toxicity to algae;
- toxicity to invertebrates (*Daphniidae*);
- toxicity to bacteria.

3. *Requirements for the reduction of emissions to the air*

The following limit values should not be exceeded for emissions into the atmosphere out of the production of textiles

	if mass low kg/h	concentration mg/m^3
chlorine	$\geq$ 0.05	5
sum of volatile organic compounds	$\geq$ 3.0	150

These requirements have to be met only for textile producing plants, which

- colour flock, yarn or fabric by use of carriers;
or
- bleach yarn or fabric by use of alkalies, chlorine or compounds containing chlorine;
or
- finish textiles by more than 500 m^2 textiles/hour.

4. Analysing methods

Internationally accepted standardised sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD Guidelines) should be used whenever available,

RECOMMENDS ALSO that these measures should be implemented ~~by 1 January 1998 for new plants and by 1 January 2000 for existing plants,~~ *from the date of adoption of this Recommendation*

RECOMMENDS FURTHER that the Contracting Parties report to the Commission in year ~~2000~~ 2003 and thereafter every three years

REPORTING FORMAT FOR HELCOM RECOMMENDATION 16/10 CONCERNING REDUCTION OF DISCHARGES *AND EMISSIONS* FROM PRODUCTION OF TEXTILES

Lead Country:

Country:
Year:

1. Number, name and location of plants discharging directly into surface waters or into municipal sewers (The names of at least plants discharging into surface waters should be reported separately)

2. ***Summarized*** description of the sector including:

- application of BAT as specified in paragraph 1 of the Recommendation;
- efforts to substitute hazardous substances as specified in paragraph 1 of the Recommendation;
- efforts taken to avoid, recycle and pretreat the waste water
- actions taken to reduce discharges and emissions during the last 3 years

3. Emission data on plants discharging directly into surface waters, for each plant separately, including:

3.1 - Data on discharges directly to surface waters.

		Concentration in mg/l							
Plant	Waste water volume (m^3)	CODCr [1)]	tot-P [1)]	Active Chlorine [2)]	AOX	Cr-VI	Cr-tot	Cu	Zn

[1)] 2 hr or 24 hr sampling
[2)] Only be measured if hypochlorine or chlorodioxide is used in the plant

3.2 - Data on emissions to the air[*].

Plant	Chlorine		Sum of volatile organic compounds	
	Mass flow (kg/h)	Concentration(mg/m^3)	Mass flow (kg/h)	Concentration(mg/m^3)

[*] Only for textile producing plants, which:
- colour flock, yarn or fabric by use of carriers;
- bleach yarn or fabric by use of alkalies, chlorine or compounds containing chlorine;
- finish textiles by more than 500 m^2 textiles/hour.

3.3 - Results from toxicity tests and colour measuring.

Results from toxicity tests	
Results from colour measuring	

4.Summarized data on plants discharging directly to municipal sewers including:

- information on discharges and air emissions;
- number or percentage of plants which comply with the different requirements of the Recommendation (Please specify e.g. which parameters / requirements cause problems for compliance).

5. Summary of evaluation of compliance with the requirements of the Recommendation including:

- problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.1.14 Food industry (Recommendation 17/10)

General

HELCOM has issued one Recommendation concerning reduction of discharges from food industry.

Short comparison of HELCOM, OSPAR and EU requirements

The HELCOM Recommendation contains general requirements on eg. permitting principles which are partly covered by the Convention.

The work on the EU BREF in this field of activity has not started yet.

There are no equivalent OSPAR provisions.

Amendments made to the Recommendation

A Recommendation on the use of the substitution principle is proposed to be added (together with the Recommendation on taking into account the precautionary principle, BAT and BEP. If accepted the other preambles will be modified accordingly).

No significant modifications were made in this Recommendation.

Amendments made to the reporting format

The reporting format is modified according to the general format agreed for industrial Recommendations at LAND 1/00. The reporting is also modified to report data in a more general summarized way as there are about 3100 plants in the whole food industry and a detailed reporting on all of them is impossible.

Recommendation for issues to be considered in the future revision

The structure of the present Recommendation is (with adopted amendments) quite transparent and no immediate significant revisions are assessed necessary. It is assessed reasonable to keep a Recommendation on this sector even in near future if updated at regular intervals.

The outcome of the EU BREF, which has not started yet, should be taken into account in the future revision of the HELCOM Recommendation. The requirements on the present Recommendation which are covered by the convention itself should be looked into. General requirements (e.g. permitting) covered by the convention should be avoided in the Recommendations.

FOOD INDUSTRY

HELCOM RECOMMENDATION 17/10

~~Adopted 15 March 1995~~
having regard to Article ~~13, Paragraph b)~~
of the Helsinki Convention

~~BASIC PRINCIPLES FOR REALIZATION OF BAT AND BEP~~ ***REDUCTION OF DISCHARGES AND EMISSIONS*** **IN FOOD INDUSTRY**

THE COMMISSION

~~RECALLING~~ ~~that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), the Contracting Parties shall take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area, and in particular eutrophication processes,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available Techniques for point sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING ALSO *Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1 which are generally recognised as harmful substances,*

RECALLING FURTHER *the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNISING that plants of food industry are notable sources of discharges of organic matters and nutrients to water,

DESIRING to implement new environmental management standards in food industry environmental performance,

DESIRING ALSO to improve knowledge on food products life-cycle assessment,

DESIRING ALSO to reduce the load of organic matter and nutrients,

RECOMMENDS *to the Governments of the Contracting Parties that they apply the precautionary principle, the principle of the Best Available Techniques and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,*

RECOMMENDS that the Governments of the Contracting Parties should apply for example the following BAT and BEP measures in the different branches of food industry (see Attachment):

1. General requirements

Reduction of waste water volume and pollution load by the following in-plant measures:

a) automatic control of processes;

b) installation of cooling circuits instead of run-through-cooling;

c) use of vapour condensates for cleaning operations;

d) recycling of preheated water from heat exchangers for cleaning operations;

e) recycling of low polluted waste waters for cleaning operations;

f) multiple use of cleaning waters;

g) use of biodegradable cleaning agents;

h) decentral cleaning stations in order to shorten the pipes for cleaning agents;

i) push away of liquid products in pipes with compressed air and vacuum instead of water;

j) use of nitric acid for cleaning operations instead of other acids;

k) control of product losses by continuous waste water sampling and analyses;

l) improving the basic technology for reducing raw material losses;

m) installation of safety mechanisms to prevent overfilling;

n) use of peroxyacids instead of chlorine-containing cleaning agents and disinfectants, to avoid generation of hazardous chlorinated substances;

o) mechanical cleaning before cleaning with liquids and desinfection to minimise the use of cleaning agents and disinfectants;

p) controlled discharge of waters containing disinfectants in order to protect subsequent biological treatment;

q) collection of product residues for further use, e.g. as feed for animals and fertilisers;

r) separate collection and disposal of disinfectant rests and used concentrates;

s) separate collection and treatment of fat, blood and nutrients;

t) transportation of processed fish and sea products in a plant preferably without water;

u) equipment of floor drains with fixed sink strainers.

2.*Requirements for the reduction of waste water discharges*

2.1 After having implemented the relevant measures under 1., plants of food industry which discharge more than 25 m^3/d into water bodies, or to municipal waste water treatment plant without biological treatment including phosphorus removal, should meet the following requirements (2-hour or 24-hour values):

	2-hour or 24-hour values
COD	250 mg/l
BOD_5 (BOD_7)	25 mg/l (30 mg/l)
tot-P	2 mg/l [1)]
NH_4-N	10 mg/l [1) 2)]

[1)] for plants above 5OO m^3/d
[2)] if temperature in biological reactor is above 12 C°.

Wherever possible concentration values should be complemented with specific production-orientated load values.

By planning end-of-pipe treatment plants fulfilling the requirements above, future requirements to the reduction of tot-N (denitrification) have to be taken into account.

~~2.2 Analysing methods~~

~~Internationally accepted standardized sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.~~ (Transferred to the end of the Recommendation)

3. *Requirements for the reduction of emissions to the air*

To reduce the emissions of substances into the air the following measures have to be taken into account:

a) capsulation of devices and installations;

b) appropriate storage of substances;

c) desucking of waste gas;

d) purification of waste gas.

In single cases limit values for substances or groups of substances might be needed. Setting up limit values (e.g. for total carbon or dust) the following items should be considered:

e) waste gas concentration;

f) load of substances;

g) duration of emissions;

h) local spread-out conditions;

i) distance to next settlement;

j) measurements of smell if detection limit of analytical devices is too high.

4. Reduction of energy consumption

The recycling of heat through heat exchangers should be achieved.

Further possibilities to regain energy (e.g. generation of biogas by anaerobic treatment of highly polluted waste waters or sludge) should be evaluated.

5. Environmental management improvement

To improve the environmental management and co-operation between the plant and the permitting environmental authority and other organisations/institutions, in order to implement this Recommendation, the following measures should be taken:

a) the plant should provide a list of raw materials and chemicals including the quantities and ecotoxicological properties (safety data sheet) to the responsible environmental authorities;

b) self-controlling of the plant and its reporting should be specified by the responsible environmental authority;

c) the authorities should take into account promotion of pilot projects in order to establish examples for other plants;

d) development and exchange of information including the work of branch associations and research institutions should be intensified;

6. Analysing methods

Internationally accepted standardised sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards and OECD-Guidelines) should be used whenever available.

RECOMMENDS ALSO that this Recommendation should be implemented for new *and existing* plants as from ~~1 January 1998 and for existing plants as from 1 January 2000~~ *the date of adoption of this Recommendation* (2005 for countries in transition),

RECOMMENDS FURTHER that the Contracting Parties should report to the Commission on implementation of this Recommendation in ~~2000~~ *2003* and thereafter every three years,

DECIDES that this Recommendation should be revised in 2002 considering limitation of tot-N in the waste water from food industry.

Attachment

Branches of Food Industry

1) Milk processing

2) Production of fruit and vegetable products

3) Production of refreshing beverages and bottling of beverages

4) Processing of potatoes

5) Meat industry

6) Breweries

7) Production of alcohol and liquors

8) Production of feed from plant products

9) Production of hide glue, gelatine and bone glue

10) Production of malt

11) Fish processing industry

12) Sugar production

13) Processing of oil seed, sweat oil and nutrient fat

14) Processing of molasses

15) Production of starch

REPORTING FORMAT FOR HELCOM RECOMMENDATION 17/10 CONCERNING ~~BASIC PRINCIPLES FOR REALIZATION OF BAT AND BEP~~ *REDUCTION OF DISCHARGES AND EMISSIONS* IN FOOD INDUSTRY

Lead Country:

Country:
Year:

1. Number of plants in each branch discharging:
a) directly into surface waters and
b) directly to municipal sewers.

2. ***Summarized*** description of the sector including:
- application of BAT as specified in paragraphs 1, 3 of the Recommendation;
- waste water treatment;
- efforts to reduce the energy consumption as specified in paragraph 4 of the Recommendation;
- efforts to improve environmental management as specified in paragraph 5 of the Recommendation.

3. Emission data on plants discharging *more than 25m^3/d* directly to surface waters including:
3.1 - Data on waste water discharges to surface waters

			Concentration in mg/l				Specific load in kg/t
Plant	Branch	Q m^3/d	COD	BOD_5 (BOD_7)	TOT-P[1)]	NH_4-N [1) 2)]	BOD (COD)

[1)] for plants above 500m^3/d
[2)] if temperature in biological reactor is above 12°C.

4. Summarized data, *preferably by branch*, on plants discharging *more than 25m^3/d* directly to municipal sewers *without biological treatment*.
4.1 - Data on discharges to municipal sewers

	Concentration range in mg/l				Specific load range in kg/t
Branch	COD	BOD_5 (BOD_7)	TOT-P	NH_4-N	BOD (COD)

5. Summary of evaluation of compliance with the requirements of the Recommendation including:
- number or percentage of plants which comply with the different requirements of the Recommendation (Please specify e.g. which parameters / requirements cause problems for compliance).
- problems encountered in the implementation of the requirements and the foreseen development of the situation.

4.2 URBAN STORM AND WASTE WATER MANAGEMENT

4.2.1 Overview

There are altogether 5 Recommendations concerning reduction of pollution from urban waste waters and additionally one concerning industrial connections and point sources other than households connected to municipal sewerage systems (Recommendation 13/2). As (most of) the requirements of this Recommendation 13/2 can be found in the Convention it is proposed to be deleted, however with two exceptions: paras e) and f) of the Recommendation are proposed to be transferred to the renewed Recommendation on municipal waste water treatment.

The two Recommendations on management of stormwaters (5/1 and 17/7) are proposed to be merged into a single Recommendation. The 3 Recommendations (7/3, 9/2 and 16/9) on development of sewerage systems and treatment of municipal waste waters are proposed to be merged into another separate single Recommendation.

The result would then be two Recommendations on urban storm and waste waters:
1. Proper management of stormwater systems
2. Municipal waste water treatment

4.2.2 Proper management of stormwater systems

General

There are 2 separate Recommendations concerning the limitation of pollution of stormwater systems:

- HELCOM Recommendation 5/1 regarding limitation of oil in stormwater systems
- HELCOM Recommendation 17/7 on the reduction of discharges from urban areas by proper management of stormwater

Short comparison of HELCOM, OSPAR and EU requirements

There are no equivalent OSPAR or EU provisions (except the general requirement in EU directive 91/271/EEC on municipal wastewater treatment limit pollution due to stormwater overflows.)

Amendments made to the Recommendations

The two Recommendations were merged together. The Preambles have been changed to refer to the 1992 Convention.

Amendments made to the reporting format

The old combined reporting format for Recommendations 5/1, 7/3 and 11/2 was amended in the following way:

- Reporting of requirements of 7/3 were moved to the new suggested combined Recommendation on municipal waste waters
- The reporting of 5/1 and 17/7 were merged together (17/7 replacing the old 11/2 reporting).
- Some questions were rearranged into a more logic order.
- The old reporting format consisted mainly of questions where Contracting Parties were obliged to thick if they had implemented the requirements fully/partly/not at all or unknown. Some space was

added to describe the implemented measures and to what extent the measures had been implemented and in which cases.

- The question no. 5 was modified to get data on how many plants have more than 10 overflows per year, because there is no possibility to report for every plant separately.
- One question was left on the national regulations and guidelines

Recommendation for issues to be considered in the future revision

The Recommendations concerning stormwaters should be updated. The time between adoption of these 2 existing Recommendations has been long and they lack a common approach. All different aspects that are related to this sector should be considered simultaneously to result in a Recommendation which would cover relevant issues for HELCOM purposes.

STORMWATERS

HELCOM RECOMMENDATION XX/XX
(Supersedes HELCOM Recommendations 5/1 and 17/7)

Adopted xx 200x,
having regard to Article ~~13,~~
~~Paragraph b)~~ of the Helsinki Convention

REDUCTION OF DISCHARGES FROM URBAN AREAS BY THE PROPER MANAGEMENT OF STORMWATER SYSTEMS

THE COMMISSION,

~~**RECALLING** that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), the Contracting Parties shall take all appropriate measures to control and strictly limit pollution by noxious substances,~~

~~**RECALLING** Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,~~

~~**RECALLING ALSO** that Annex II of the Helsinki Convention defines oil as a noxious substance for the purposes of Article 6 of the Convention,~~

~~**RECALLING ALSO** Paragraph 1 of Annex III of the Helsinki Convention in which the Contracting Parties agree to treat municipal sewage in an appropriate way so that the amount of organic matter does not cause harmful changes in the oxygen content of the Baltic Sea Area and the amount of nutrients does not cause harmful eutrophication of the Baltic Sea Area,~~

~~**RECALLING FURTHER** Paragraph 3 of Annex III of the Helsinki Convention in which the Contracting Parties agree to minimize the polluting load of industrial wastes in an appropriate way in order to reduce the amount of harmful substances, organic matter and nutrients,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

BEING MINDFUL that a considerable part of oil pollution of the marine environment is caused by oil contaminated waters discharged via stormwater systems,

RECOGNIZING a need for limiting oil pollution from stormwater systems applying efficient treatment of oil contaminated waters,

RECALLING ALSO HELCOM Recommendation [7/3] concerning the reduction of discharges from urban areas by the development of sewerage systems,

RECOGNIZING the need for limiting the harmful effects caused by the stormwater discharges to the Baltic Sea,

RECOGNIZING ALSO the need for development of present sewerage systems,

DESIRING to limit pollution caused by unsuitable sewerage systems,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

A. Reduction of discharges of urban areas by proper management of stormwaters

1. (Recommendation 17/7 para. a) measures should be taken already at the source to prevent the deterioration of the quality of stormwater (e.g. efficient dry street cleaning and reduction of lead in petrol);
2. (Recommendation 17/7 para. d) depending on the characteristics of the contamination of the stormwater, possible means should be taken to minimize the volume of stormwater entering combined and separate sewer systems (minimization of the volume, reached e.g. by local infiltration systems if allowed by geological conditions);

3. (Recommendation 17/7 para. b) contaminated stormwater from heavily polluted industrial areas (loading, unloading, storing) should be treated separately; measures can be based on local research and consideration case by case;

4. (Recommendation 17/7 para. c) if a stormwater in a separate sewer system district is collected from traffic and other areas where the first flush of stormwater is highly polluted:
- flow equalization units should be provided whenever possible for the first flush of stormwater; and
- when possible this water should be treated separately in stormwater treatment facilities or in a sewage treatment plant, as appropriate;

5. (Recommendation 17/7 para. e) in areas with combined sewer systems, overflow should not be allowed more than on the average 10 times per year or limited to 10 per cent of the total flow conveyed in the sewer system (several overflow occasions during one single day are regarded as one), which aim may be reached by appropriate design of the sewerage system and by providing retention facilities[**)] ; the aim should further be to catch the first (most polluted) volume of overflow for separate treatment. In order to decrease the amount of overflowing pollutants combined sewer outflows should be equipped with some treatment facilities such as swirl concentrators.

B. Limitation of oil in stormwaters

6. (Recommendation 5/1 para. a) oily process, cooling and other waters from production plants, service stations, mechanical workshops and other plants as well as stormwaters from areas where oil is handled or

stored should not without effective water pollution control measures be connected to a stormwater system **or discharged to the recipient**;

7. (Recommendation 5/1 para. b) oily waters from plants and areas already connected to a stormwater system should without delay be investigated and measures taken accordingly, including, for instance:
- collection of oily wastes at the source;
- collection and separate treatment of oil polluted waters;
- limitation of quantity of oil polluted waters discharged to stormwater systems; and
- connection of, if necessary, pretreated waters to municipal sewers.

~~**RECOMMENDS FURTHER** that the actions taken by the Contracting Parties should be reported to the Commission one year after the adoption of this Recommendation and thereafter every 5 years.~~

[RECOMMENDS that this Recommendation will be in force ~~as from 1 January 1998~~ . *immediately*, with provisions A.2 - A.5 applying only to new and retrofitted sewerage systems (*constructed after 1 January 1998)*,]

RECOMMENDS ALSO that the Contracting Parties report to the Commission every three years starting in ~~2000~~ *200x*,

DECIDES that this Recommendation should be reconsidered in ~~2000~~ *200x*.

**) Experience shows that the easiest way to express pollution load caused by combined sewer overflow is to use the indirect figure of frequency, i.e. number of times per year, because thus it is not necessary to undertake the difficult task of determining the quality of the combined sewer outflow in each case.

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX CONCERNING LIMITATION OF POLLUTION FROM STORMWATER SYSTEMS *)				
Lead Country:				
Country:			Year:	
A. Reduction of discharges of urban areas by the proper management of stormwaters				
1. Have steps been taken to prevent and minimize the deterioration of the quality of the stormwater at the source, e.g				
a) dry street cleaning?	Yes	No	Partly	Unknown
If only partly, please give an estimation to what extent (eg. percentage)				
b) other measures? If Yes, please describe the measures.	Yes	No	Partly	Unknown
2. Are local infiltration systems used to minimize the volume of stormwater entering the combined systems? If so, describe them and your experience of applications.	Yes	No	Partly	Unknown
3. Are contaminated stormwaters treated separately?	Yes	No	Partly	Unknown
If only partly treated, please describe to what extent and in which cases/areas				
4. If a stormwater in a **separate** sewer system district is collected from traffic or other areas where the first flush of stormwater is highly polluted:				
a)Are there any flow equalization units used?	Yes	No	Partly	Unknown
If only partly used, please describe to what extent and in which cases/areas				
b)When possible is this water treated separately in stormwater treatment facilities or in sewage treatment plants, as appropriate?	Yes	No	Partly	Unknown
If only partly treated, please describe to what extent and in which cases/areas				
5. **Combined** sewer systems:				
Number of plants with more than 10 overflows in combined sewer systems per year (or overflow per cent of the total flow conveyed in the sewer system *as an average for the country*)				
Is the first (most polluted) volume of overflow caught for separate treatment?	Yes	No	Partly	Unknown

If only partly treated, please describe to what extent and in which cases/areas	

B. Limitation of oil in stormwaters				
6. Is waste oil from the production plants, service stations, mechanical works shops, handlin/storing and other sources collected in such a way that it does not enter the stormwater systems?	Yes	No	Partly	Unknown
If only partly collected, please describe to what extent and in which cases/sources				
7. Are oil polluted waste waters from production plants, service stations, mechanical works shops, handling/storing and other sources collected and treated separately before discharged to stormwater systems and muncipal sewers?	Yes	No	Partly	Unknown
If only partly collected/treated, please describe to what extent and in which cases/areas/plants				
8. If oil does enter the stormwater systems is the water then in any way treated before being discharged to the recipient?				
in accidents	Yes	No	Partly	Unknown
in daily leakage	Yes	No	Partly	Unknown
If only partly treated, please describe to what extent and in which cases/areas				
9. Are there any national regulations or guidelines for the proper management of stormwater?				

*) Supersedes HELCOM Recommendations 5/1, 7/3 and 17/7.

4.2.3 Development of sewerage systems and municipal waste water treatment

General

There are 3 Recommendations for concerning sewerage systems and treatment of municipal waste waters:

- Recommendation 7/3 concerning measures aimed at the reduction of discharges from urban areas by the development of sewerage systems
- Recommendation 9/2 concerning measures aimed at the reduction of discharges from urban areas by the use of effective methods in waste water treatment
- Recommendation 16/9 concerning nitrogen removal at municipal sewage water treatment plants

The fourth Recommendation 13/2 concerning industrial connections and point sources other than households connected to municipal sewerage systems contains one paragraph which is not covered by the provisions of the convention and that paragraph is proposed to be moved into this Recommendation. Recommendation 13/2 is handled in more detail in the chapter on general requirements for industry.

Recommendation 9/2 contains requirements on BOD and Phosphorous removal and research project to reach nitrogen removal targets and Recommendation 16/9 contains requirements on nitrogen removal and identification of nitrogen sensitive areas.

Short comparison of HELCOM, OSPAR and EU requirements

The requirements in the HELCOM Recommendations for nitrogen removal are at the same level as in the EU directive 91/271/EEC. The requirement for phosphorous removal concerns all waters in the HELCOM Recommendation whereas the EU directive concerns sensitive waters only. The EU directive also covers parameters which lack from the HELCOM Recommendation (SS, COD). The requirements in the EU Directive on BOD and P concerns also agglomerations between 2000-10 000 p.e. whereas the HELCOM Recommendation applies to agglomerations > 10 000 p.e. The OSPAR requirements are generally looser and have only reduction rate requirements for nutrients concerning agglomerations >20 000 p.e. The table on nitrogen removal (same as in the Directive) states a range for minimum reduction percentage which is not very logic.

The EU directive contains requirements on collecting systems and the prevention of leaks.

Amendments made to the Recommendations

These 3 Recommendations are merged together into a single Recommendation on municipal wastewater treatment. The requirement in 9/2 on nitrogen removal research projects are deleted as the newer 16/9 Recommendation covers nitrogen removal and research requirements. The EU Directive includes requirements on sewerage systems and therefore the corresponding HELCOM Recommendation 7/3 is proposed to be merged into the Recommendation urban (municipal) waste water treatment.

It is also proposed to add footnote 4 to concern also plants >100 000 p.e. Footnote 4 in para 3 of the proposed Recommendation recommends the most urgent plants in Countries in transition to equip plants with nitrogen removal by 2010. It would seem to be even more important to equip these bigger plants with nitrogen removal.

The Preambles have been changed to refer to the provisions of the 1992 Convention.

Amendments made to the reporting format

The reporting formats for these Recommendations were merged together.

Questions added:

- The number of people served for different size classes as it gives valuable information of the significance of the plants in the different size classes.
- The number plants in different size classes which comply with the Phosphorous and the BOD removal requirements
- The question on overflow loads was changed in order to cover information of untreated water including overflows and bypasses. This additional information makes it possible to get a picture of total loads from urban areas and the management of the sewerage system

Questions deleted:

- The question on concentration of pollutants in the waste water was deleted as mean values of concentrations of several plants is not necessary. This information would be valuable in plantwise reports.

Recommendation for issues to be considered in the future revision

The requirements on treatment efficiency should be broadened to include also overflows and by passes of urban waste waters. At the time being only requirements on reduction efficiency of treatment plants are stated in the Recommendation. The whole sewerage system and the treatment plants themselves should be regarded as an entity. The EU directive contains requirements on collecting systems and the prevention of leaks in them, this should be taken into account more effectively in the HELCOM Recommendation.

The requirement of phosphorous concentration in the effluent 1,5 mg/l is quite loose and should be considered in the next revision.

HELCOM RECOMMENDATION XX/XX

(Supersedes HELCOM Recommendations 7/3, 9/2 and 16/9)

Adopted xx 200x,
having regard to ~~Article 13,~~
~~Paragraph b)~~ of the Helsinki Convention

MUNICIPAL WASTEWATER TREATMENT

THE COMMISSION,

~~**RECALLING** Paragraph 1 of Article 6 of the convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,~~

~~**RECALLING ALSO** Paragraph 1 of Annex III of the Helsinki Convention, in which the Contracting Parties agree to treat municipal sewage in an appropriate way so that the amount of organic matter does not cause harmful changes in the oxygen content of the Baltic Sea Area and the amount of nutrients does not cause harmful eutrophication of the Baltic Sea Area,~~

~~**RECALLING FURTHER** Paragraph 3 of Annex III of the Helsinki Convention in which the Contracting Parties agree to minimize the polluting load of industrial wastes in an appropriate way in order to reduce the amount of harmful substances, organic matter and nutrients,~~

RECALLING *Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources,*

HAVING REGARD *also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,*

RECALLING *Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,*

RECALLING FURTHER *that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,*

RECOGNIZING ALSO that in an urban area the sewerage system and the sewage treatment plant must be regarded as a unit when the pollution load is dealt with. For practical reasons, however, this Recommendation covers only the treatment of the amounts of water entering the sewage treatment plant. Concerning the pollution load due to sewer overflows this is regulated in a qualitative manner in Recommendation 7/5 e). Work is ongoing to strengthen this by stating specific numbers,

RECOGNIZING ALSO the need for development of present sewerage systems,

RECOGNIZING the importance of municipal sewage as a source of pollution of the marine environment,

RECOGNIZING ALSO that nitrogen removal has been found to be necessary in many parts of the Baltic Sea Area,

RECOGNIZING ALSO that some of the Contracting Parties are of the opinion that sufficient knowledge and experience of removing nitrogen from urban wastewater in sewage treatment plants is already available.

DESIRING to limit this pollution by effective treatment of municipal sewage,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

A. Development of sewerage systems

1. (Recommendation 9/2 para. a) Urban (municipal) wastewater deriving from households (domestic wastewater) or industrial enterprises should be collected and treated before being discharged into water bodies; by-passes may only be used in emergency cases;

2. (Recommendation 13/2 para e) the sewerage system must not be deteriorated due to the content of substances in the effluent water from industries

3. (Recommendation 7/3 para. c) a separated sewerage system and/or a semi-separated sewerage system should be selected for new developments;

4. (Recommendation 7/3 para. a) sewers should be maintained and renewed in a way that infiltration and exfiltration be minimized;

5. (Recommendation 7/3 para .b) the net infiltration in major catchment areas should not exceed 100% of the dry weather flow as a yearly average.

B. Treatment of municipal waste waters

1. (Recommendation13/2 para f) limit values for substances harmful to the receiving waters which can not be treated in the municipal waste water treatment plants or which are harmful to the sewerage systems or the processes of the treatment plant should be established separately for industry and other relevant sectors discharging indirectly based on the BAT and BEP

(Recommendation 9/2 para. ~~b) domestic sewage or wastewater of similar type which is collected in a central sewerage system and treated in wastewater treatment plants, loaded with more than 10 000 person equivalents, should be treated as soon as possible and not later than 1998 by biological methods or other methods giving equivalent results, so that the treatment should result in (calculated as yearly average values with nitrification inhibitor, and calculated for total amount of influent sewage)~~

~~– (i) at least 90% reduction of BOD 5; and~~

~~– (ii) at most a concentration of BOD 5 in the effluent of the treatment plant of 15 mg/l;~~

~~(Recommendation 9/2 para. c) treatment of domestic sewage or wastewater of similar type at plants serving more than 10 000 person equivalents should result as soon as possible and not later than 1998 in effluent yearly average values of total phosphorus below 1.5 mg P/l~~. **[transferred to table in para B.1]**

2. (Recommendation 9/2 para. b and para. c) Domestic sewage or wastewater of similar type which is collected in a central sewerage system and treated in wastewater treatment plants, loaded with more than 10 000 person equivalents, should be treated as soon as possible ~~and not later than 1998~~ by biological methods or other methods giving equivalent results, so that the treatment should result in:

	reduction (%)	Concentration in the effluent (mg/l)
BOD_5	90	15 [1)]
Total phosphorous	-	1.5 [2)]

[1)] calculated as yearly average values with nitrification inhibitor, and calculated for total amount of influent sewage

[2)] calculated as yearly average value

(Recommendation 9/2 para. d~~) as a start, each Contracting Party should start research and evaluation projects as soon as possible with the purpose to give a basis for further Recommendations for nitrogen removal within three years. The project should, inter alia, include studies of process technology and cost for nitrogen removal to reach the targets:~~

~~(i) 12 mg total nitrogen/l in the effluent water or 50% reduction of total incoming nitrogen;~~

~~(ii) 8 mg total nitrogen/l in the effluent water or 75 % reduction of total incoming nitrogen;~~

~~The results of the research and evaluation projects should be reported at annual seminars held within the auspices of the Helsinki Commission~~;[covered by para 4. (requirements from newer rec. 16/9)]

3. (Recommendation 9/2 para. e) The values stated above need not be applied plantwise if a similar reduction in the total discharge of BOD_5 and phosphorus as yearly average discharge values in domestic sewage or wastewater of similar type which is collected in central sewerage systems can be documented;

4. (Recommendation 16/9 para. a) Municipal sewage treatment plants, located in areas sensitive to nitrogen, should be equipped with nitrogen removal according to the following stipulations, where values for concentration or for the percentage of reduction are applied:

Size of treatment plant	Concentration tot-N mg/l [1)] (yearly average)	Minimum [2)] percentage reduction	~~Year (end of)~~	Countries in transition
10001-50000 pe	15	70-80	~~1998~~	2020
50001-100000 pe	15	70-80	~~1998~~	2020 [4)]
>100000 pe	10 [3)]	70-80	~~1998~~	2020 *[4)]*

[1)] tot-N means the sum of total Kjeldahl nitrogen (organic N + NH4), nitrate (NO3)-nitrogen and nitrite (NO2)-nitrogen

[2)] reduction in relation to the load of the influent

[3)] alternatively the daily average must not exceed 20 mg/l N. This requirement refers to a water temperature of 12°C or more during the operation of the biological reactor of the waste water treatment plant. As a substitute for the condition concerning the temperature, it is possible to apply a limited time of operation, which takes into account the regional climatic conditions

[4)] most urgent plants should be equipped with nitrogen removal by 2010. Those plants should be specified to the Commission ~~not later than in 1997~~ *as soon as possible*. ***[This footnote is proposed to concern also plants > 100 000 p.e]***

5. (Recommendation 16/9 para. b) national and international research on the need, technology and economics of nitrogen removal should be intensified

RECOMMENDS FURTHER ~~that reports of actions taken by the Contracting Parties should be reported to the Commission one year after the adoption of this Recommendation according to the format accepted by STC 14 (1987) to the extent the Contracting Parties are able to submit the information~~

~~requested, and thereafter every five years for b) and c) para. B.1 and within three years for d) according to the revised format to be adopted by the Helsinki Commission~~.

RECOMMENDS FURTHER that the Contracting Parties report to the Commission in ~~2000~~ *200x* and thereafter every three years ~~for para. 4~~.

RECOMMENDS ALSO that the Contracting Parties re-evaluate the present Recommendation and reconsider it in ~~1995~~ *200x* taking into account new developments on national or international or EU level for Member States. National and international research on the need, technology and economics of nitrogen removal should be intensified,

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX CONCERNING MUNICIPAL WASTEWATER TREATMENT PLANTS (WWTPs) AND END-OF-PIPE DISCHARGES *)			
Lead Country:			
Country:		Year:	
A. Development of sewerage systems			
1. What type of sewerage system is:	Combined	Semi-separated	Separated
a) in use (refer the percentage for each type)			
b) chosen for new developments? (refer the percentage for each type)			
2. To what extent are sewers being renovated (e.g km/year, certain areas etc)			
Is renovation a matter for the central, regional or local governments?			
3. Are there any calculations of the net infiltration in major catchment areas?	Yes	No	Unknown
If there are any such calculations, do the results show compliance with the less than 100% infiltration recommended in the text of the Recommendation?	Yes	No	Partly
B. The use of effective methods in wastewater treatment			
Are there any limit values or standard (target) values for different substances permitted to the sewerage and/or the waste water treatment plants? If yes, please submit them (or incase of earlier submittance give reference to the earlier document)			
People served (million inhabitants) and percentage of population			
For the different size classes give the **number of plants and the number of people served**:			
	10 001 - 50 000 pe	50 001 - 100 000 pe	> 100 000 pe
At the coast of the Baltic Sea			
Within the catchment area of the Baltic Sea			
Located in nitrogen sensitive areas			
Which are located in nitrogen sensitive areas and are in compliance with nitrogen removal requirements			
Which are in compliance with phosphorous removal requirements			
Which are in compliance with BOD removal requirements			

Shares of different treatment methods, per cent of the people served:		
	Total discharges to the Baltic catchment area	Direct discharges to the Baltic Sea
No treatment		
mechanical		
biological		
chemical		
biological-chemical		
other methods		
Waste water flow, million m^3/a		
Waste water load ***of treated wastewater*** , t/a		
$BOD_{5\ ATU}$		
Phosphorous		
Nitrogen		
Reduction, per cent		
$BOD_{5\ ATU}$		
Phosphorous		
Nitrogen		
~~Combined sewer~~ **Waste water load of untreated water (overflows and bypasses)**		
volume of overflows ***and bypasses***, million m^3/a		
waste water load, t/a		
$BOD_{5\ ATU}$		
Phosphorous		
Nitrogen		
5. Results of assessments which have evaluated areas for being sensitive or non-sensitive for nitrogen		
6. Please give a map of nitrogen sensitive and non-sensitive areas.		

*) Supersedes HELCOM Recommendations 9/2 and 16/9 para.

4.3 AGRICULTURE

4.3.1 Overview

General

HELCOM has issued 10 Recommendations concerning reduction of pollution from agriculture:

- HELCOM Recommendation 7/2 concerning measures aimed at the reduction of discharges from agriculture
- HELCOM Recommendation 9/3 concerning measyres aimed at the reduction of nutrient discharges from agriculture
- HELCOM Recommendation 13/7 concerning reduction of ammonia volatilization from storages
- HELCOM Recommendation 13/8 concerning reduction of ammonia volatilization from field application of manure
- HELCOM Recommendation 13/9 concerning reduction of nitrogen, mainly nitrate, leaching from agricultural land
- HELCOM Recommendation 13/10 concerning reduction of phosphorous leaching and erosion
- HELCOM Recommendation 13/11 concerning reduction of farm waste discharges
- HELCOM Recommendation 14/4 concerning reduction of ammonia volatilization from animal housing
- HELCOM Recommendation 16/11 concerning measures to reduce pollution by pesticides from agriculture, forestry and holticulture
- HELCOM Recommendation 18/4 concerning management of wetlands and freshwater ecosystems for retention nutrients

Short comparison of HELCOM, OSPAR and EU requirements

EU has only one Directive specifically covering agricultural sources of pollution the Nitrates Directive 91/676/EEC. The Directive covers only nitrogen discharges and lists measures that are to be included in GAP codes and national action plans for vulnerable zones.

OSPAR has several Recommendations in this field and they cover measures from methods for storing and spreading of manure. The reporting of OSPAR requirements focus more on pollution load reduction for different catchment areas as a result of measures.

Short analysis of the HELCOM Recommendations on agriculture and proposal for action

The requirements of 8 of these Recommendations have been included in the amended Annex of the convention in 1998 (Amendments to Annex III of the Helsinki Convention concerning regulations on prevention of pollution from agriculture, HELCOM Recommendation 19/6).

As the provisions of the Convention can be regarded as more binding than the Recommendations themselves there is no need to keep them valid anymore. Therefore it is recommended to delete HELCOM Recommendations 7/2, 9/3, 13/7, 13/8, 13/9, 13/10, 13/11 and 16/11.

There are however some detailed requirements which are not implicitly covered by Annex III of the convention and a new combined Recommendation on agriculture has been drafted in order to cover these outstanding provisions in the Recommendations which are proposed to be deleted. These mixed

requirements could with small amendments be incorporated to Annex III, but since the procedure to amend the convention takes time a temporary general Recommendation might be needed.

Recommendation 16/11 on Measures to reduce pollution by pesticides from agriculture, forestry and horticulture on is proposed to be deleted, but some amendments are proposed to the Recommendation on forestry 20/3 to cover these requirements as Annex III does not cover forestry.

There are no provisions on ammonia volatilisation from animal housing and it is recommended to keep Recommendation 14/4 as it stands.

The new amended Annex III of the Convention partially also covers the requirements in Recommendation 18/4 concerning wetlands. Actually the most essential requirement of the Recommendation is covered by the provisions in the Annex (Para i: the restoration of shallow lakes and wetlands. Covered by regulation 2.7 c): Wetland areas should be retained and where possible restored, to be able to reduce plant nutrient losses and to retain biological diversity). The Recommendation is however proposed to be kept as it stands to keep a comprehensive Recommendation on this issue.

One problem which arises with the deletion of the agricultural Recommendations is that there is no reporting system developed for the implementation of the provisions of the convention. The reporting of the requirements of the convention is however a principal question which must be solved before a detailed reporting of the agricultural requirements are developed. But an interim reporting format covering the requirements in the convention could be developed within the project if assessed necessary by the Contracting parties.

Detailed comparison of HELCOM agricultural Recommendations with the provisions of Annex III of the Convention

The present Recommendations have been compared to the Annex III -part II of the Convention concerning regulations on prevention of pollution from agriculture. For each paragraph in each Recommendation it is indicated which regulation of Annex III covers the paragraph in question.

NEW DRAFT RECOMMENDATION (ON ISSUES IN RECOMMEDATIONS PROPOSED TO BE DELETED WHICH ARE NOT COMPLETELY COVERED BY ANNEX III OF THE CONVENTION)

HELCOM RECOMMENDATION XX/2000

RECOMMENDATION CONCERNING MEASURES AIMED AT THE REDUCTION OF EMISSIONS AND DISCHARGES FROM AGRICULTURE

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

1) household wastewater, cleaning of machines etc. should be controlled; *[Rec. 7/2, a) v.]*

2) farm animal houses and similar enclosures for animals shall be designed in such a way that ground water and surface water will not be polluted:
- floors should be made of waterproof materials;
- floors should be constructed to resist the impact of animals and tools;
- appropriate draining and collection of liquid manure should be established, [Rec. 13/11 a)]

[The chapeau is actually covered by Annex III - Part II Reg 2.3. Agricultural waste water and silage effluents: Waste water from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to storages for urine or liquid manure. The detailed requirements are however not included in the Annex as commented by Sweden.]

3) for the reduction of soil erosion e.g., reduced tillage techniques (e.g. avoidance of mouldboard plowing in autumn) should be used; *[Rec. 13/10, b)]*

4) for the reduction of pollution caused by nitrogen further distribution and increased utilization efficiency of animal manure may additionally be promoted by, e.g.:
- slurry banks for surplus manure, possibly in connection with degassing of animal manure in large scale biogas plants;
- use of large lorries, possibly in combination with small application units, *[Rec. 13/9, e)]*

5) programmes should be developed and action taken to implement measures to reduce emissions and discharges from agriculture *[covers similar provisions in several Recommendations on agriculture]*

HELCOM RECOMMENDATION 7/2

(supplemented by HELCOM Recommendations 9/3, 13/7, 13/2 and 14/4)
Adopted 11 February 1986,
having regard to Article 13, Paragraph b)
of the Helsinki Convention

RECOMMENDATION CONCERNING MEASURES AIMED AT THE REDUCTION OF DISCHARGES FROM AGRICULTURE

THE COMMISSION,

RECALLING that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), the Contracting Parties undertake to take allappropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

NOTING the increasing concentrations of nutrients in the marine environment causing negative effects on ecosystems including eutrophication and oxygen depletion,

RECOGNIZING the importance of discharges from agriculture as sources of pollution of the marine environment by nutrients,

DESIRING to limit this pollution by accomplishing special measures concerned,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

a) the farming practice should be managed under the following conditions:

(i) the storage facilities for manure and silage should be improved, including effluent control;

*[**Covered by Annex III - Part II Reg 2.3.** Agricultural waste water and silage effluents: Waste water from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to storages for urine or liquid manure.]*

(ii) the cultivation practice should be carried out with optimum use of nutrients, e.g. fertilization plan, soil mapping, timing, dosage, spreading technique, crop rotation;

*[**Covered by Annex III - Part II Reg 2.5.** Application rates for nutrients: Application rates for nutrients should not exceed the crops nutrient requirements. National guidelines should be developed with fertilizing Recommendations and they should take reference to:*

a) soil conditions, soil nutrient content, soil type and slope;
b) climatic conditions and irrigation;
c) land use and agricultural practices, including crop rotation systems;
d) all external potential nutrient sources.]

(iii) in animal husbandry, a certain area of farmland should be designated per animal to avoid harmful leaching to the environment as a consequence of manure spreading and/or animal pasturing;

*[**Covered by Annex III - Part II Reg 2.1.** Animal density: To ensure that manure is not produced in excess in comparison to the amount of arable land, there must be a balance between the amount of animals on the farm and the amount of land available for spreading manure, expressed as animal density. The maximum amount of animals should be precised with consideration taken to the amount of phosphorus and nitrogen in manure and the crops requirements of plant nutrients.]*

(iv) water protecting zones should be established along specified eutrophication sensitive water bodies, taking into account local conditions;

***[Covered by Annex III - Part II Reg 2.7.** Water protection measures and nutrient reduction areas*
a) Surface water
Buffer zones, riparian zones or sedimentation ponds should be established, if necessary.
b) Ground water
Ground water protection zones should be established if necessary. Appropriate measures such as reduced fertilisation rates, zones where manure spreading is prohibited and permanent grass land areas should be established.
c) Nutrient reduction areas
Wetland areas should be retained and where possible restored, to be able to reduce plant nutrient losses and to retain biological diversity.]

(v) household wastewater, washing water from milking, cleaning of machines etc. should be controlled;

*[Partly **Covered by Annex III - Part II Reg 2.3.** Agricultural waste water and silage effluents: Waste water from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to storages for urine or liquid manure**. Some provisions included in a new draft Recommendation**.]*

b) the knowledge about agricultural practice and environmental problems should be improved, i.e. by:
(i) informing and educating farmers and advisors on environmental effects of the use of fertilizers and agricultural practices;

*[**Covered by Annex III - Part II Reg 6** - Education, information and extension service: The Contracting parties shall promote systems for education, information and extension (advisory service) on environmental issues in the agricultural sector.]*

(ii) carrying out research work on environmental effects of farming management, cultivation practice, choice of crops, and developing the best cultivation practice from an environmental point of view;

*[**Covered by Annex III - Part II Reg 2.5.** Application rates for nutrients: Application rates for nutrients should not exceed the crops nutrient requirements. National guidelines should be developed with fertilizing Recommendations and they should take reference to:*
a) soil conditions, soil nutrient content, soil type and slope;
b) climatic conditions and irrigation;
c) land use and agricultural practices, including crop rotation systems;
d) all external potential nutrient sources.]

(iii) monitoring the losses of nutrients;

*[**Covered by Annex III - Part II Reg 5** - Environmental monitoring: The Contracting Parties shall develop projects to assess the effects of measures and the impacts of the agricultural sector on the environment]*

c) it should also be stressed that the Contracting Parties should have close cooperation and exchange of experience with regard to environmentally sound agricultural practice;

RECOMMENDS FURTHER that the Contracting Parties should report on their national measures taken in accordance with paragraphs a) and b) above by 1 March 1988.

HELCOM RECOMMENDATION 9/3

Adopted 15 February 1988,
having regard to Article 13, Paragraph b)
of the Helsinki Convention

RECOMMENDATION CONCERNING MEASURES AIMED AT THE REDUCTION OF NUTRIENT DISCHARGES FROM AGRICULTURE

THE COMMISSION,

RECALLING that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

RECOGNIZING the importance of discharges from agriculture as sources of pollution of the marine environment by nutrients,

NOTING the increasing concentrations of nutrients in the marine environment causing negative effects on ecosystems including eutrophication and oxygen depletion,

DESIRING to achieve a significant reduction of this pollution by giving additional guidelines to HELCOM Recommendation 7/2 as a first step towards this reduction,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

a) farming practice should be managed so as to favour the efficient use of the nutrients that are available in the agricultural system;

*[**Covered by Annex III - Part II Reg 2 (WHOLE)**]*

b) farms with livestock production above a certain size should require approval with regard to environmental aspects;

*[**Covered by Annex III - Part II Reg 4** - Environmental permits: Farms with livestock production above certain size should require approval with regard to environmental aspects and impacts of the farms.]*

c) farming practice with regard to manure should be in accordance with the following principles:

(i) the capacity of the storage facilities should be sufficiently large to ensure that manure need only be brought out when the plants can use the nutrients;

*[**Covered by Annex III - Part II Reg 2.2.** Manure storage: Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.]*

(ii) the ammonia evaporation from the storage and use of liquid manure (urine and slurry) should be reduced by incorporating the manure without delay into the soil when it is used on bare soil;

*[**Covered by Annex III - Part II Reg 2.4.** Application of organic manures: Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc.) shall be spread in a way that minimizes the risk for loss of plant nutrients and should not be spread on soils that are frozen*, water saturated or are covered with snow. Organic manures should be incorporated as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.]*

(iii) the application of manure on bare soil in the autumn should be restricted;

*[**Covered by Annex III - Part II Reg 2.4.** Application of organic manures: Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc.) shall be spread in a way that minimizes the risk for loss of plant nutrients and should not be spread on soils that are frozen*, water saturated or are covered with snow. Organic manures should be incorporated as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.]*

(iv) the application of manure on frozen soil should be restricted;

*[**Covered by Annex III - Part II Reg 2.4.** Application of organic manures: Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc.) shall be spread in a way that minimizes the risk for loss of plant nutrients and should not be spread on soils that are frozen*, water saturated or are covered with snow. Organic manures should be incorporated as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.]*

d) where it is possible a large part of the cultivated area should be covered by crops - for example winter seed, grass or catch crop - during the autumn and winter;

*[**Covered by Annex III - Part II Reg 2.6.** Winter crop cover: In relevant regions the cultivated area should be sufficiently covered by crops in winter and autumn to effectively reduce the loss of plant nutrients]*

e) programmes should be developed to control and monitor the effect of these measures, or any other measures taken to reduce nutrient discharges from agriculture, on the pollution load on the surface waters,
[Included in a new draft Recommendation]

RECOMMENDS FURTHER that the Contracting Parties should report on their national measures taken in accordance with this Recommendation and HELCOM Recommendation 7/2 by 1 March 1989 and at five-yearly intervals thereafter.

HELCOM RECOMMENDATION 13/7

Adopted 6 February 1992,
having regard to Article 13, Paragraph b)
of the Helsinki Convention

REDUCTION OF AMMONIA VOLATILIZATION FROM STORAGES

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING FURTHER the Ministerial Declaration of 1988 and the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area is caused by nutrient inputs from diffuse sources,

DESIRING to limit this pollution,

RECOMMENDS to the Governments of the Contracting Parties that:

a) storage capacity of farms having more than 5 animal units according to Appendix must be sufficient to allow application of manure on appropriate periods for minimizing volatilization; [***Covered by Annex III - Part II Reg 2.2.*** ***Annex more stringent as there is no size limit (Hence Appendix not needed)]***

b) slurry storages should be covered, inter alia, with floating coverages, membrane covers, solid lids or membranes, possibly in conjunction with retrieval of methane gas. Loading of storages under the slurry surface should be promoted;

c) urine storages should be covered in a way that prevents ammonia to volatilize from the storage;

[a), b) and c) ***Covered by Annex III - Part II Reg 2.2.*** *Manure storage: Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.]*

d) programmes should be developed and action taken to implement the above mentioned measures and to report on the effect of these measures or any other measures taken to reduce ammonia volatilization from storages, ***[Included in a new draft Recommendation]***

RECOMMENDS ALSO that the actions stated in a) - d) should be implemented by the Contracting Parties within 5 years,

RECOMMENDS FURTHER that the actions taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations, agricultural advice, should be reported to the Commission in 1994 and thereafter every three years.

HELCOM RECOMMENDATION 13/8

Adopted 6 February 1992,
having regard to Article 13, Paragraph b)
of the Helsinki Convention

REDUCTION OF AMMONIA VOLATILIZATION FROM FIELD APPLICATION OF MANURE

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING FURTHER the Ministerial Declaration of 1988 and the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area is caused by nutrient inputs from diffuse sources,

DESIRING to limit this pollution,

RECOMMENDS to the Governments of the Contracting Parties that:

a) slurry applied on bare soil should be directly incorporated by means of efficient equipment, e.g., direct injectors, trailing hoses with units for injection, or harrowing as soon as possible after application;

b) slurry added to growing crops should be applied by means of direct injectors or, in growing crops having a dense canopy, by means of efficient equipment, e.g.,trailing hoses;

c) urine should be applied by means of efficient equipment, e.g., trailing hoses, both on bare soil and on growing crops;

d) solid manure should be incorporated shortly after application;

[a), b), c) and d) ***Covered by Annex III - Part II Reg 2.4.*** *Application of organic manures: Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc.) shall be spread in a way that minimizes the risk for loss of plant nutrients and should not be spread on soils that are frozen*, water saturated or are covered with snow. Organic manures should be incorporated as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.]*

e) programmes should be developed and action taken to implement the above mentioned measures and to report on the effect of these measures or any other measures taken to reduce ammonia volatilization from field application of manure, ***[Included in a new draft Recommendation]***

RECOMMENDS ALSO that the actions stated in a) - e) should be implemented by the Contracting Parties within 5 years,

RECOMMENDS FURTHER that the actions taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations, agricultural advice, should be reported to the Commission in 1994 and thereafter every three years.

HELCOM RECOMMENDATION 13/9

Adopted 6 February 1992
having regard to Article 13, Paragraph b)
of the Helsinki Convention

REDUCTION OF NITROGEN, MAINLY NITRATE, LEACHING FROM AGRICULTURAL LAND

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING FURTHER the Ministerial Declaration of 1988 and the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area is caused by nutrient inputs from diffuse sources,

DESIRING to limit this pollution,

RECOMMENDS to the Governments of the Contracting Parties that:

a) artificial fertilizers and animal manure should be applied according to crop need. This principle should be promoted, e.g., by the use of:

- economic incentives used by the authorities to reduce nutrient application and to promote the development of a sustainable agriculture;
- fertilizer and crop-rotation planning and calculation of nitrogen balance, i.e., with a specification of crop need and applied amounts of nitrogen fertilizers;
- prognosis tools for nitrogen application, such as assessment of soil mineral nitrogen contents, soil nitrogen mineralization potential, or the use of calculation methods,

*[**Covered by Annex III - Part II Reg 2.5.** Application rates for nutrients: Application rates for nutrients should not exceed the crops nutrient requirements. National guidelines should be developed with fertilizing Recommendations and they should take reference to:*
a) soil conditions, soil nutrient content, soil type and slope;
b) climatic conditions and irrigation;
c) land use and agricultural practices, including crop rotation systems;
d) all external potential nutrient sources.]

b) utilization efficiencies of animal manures should be enhanced by:

- application of animal manure shortly before or during the early growing season;
- establishing of six to twelve months storage capacity for animal manure depending on farming system, climate and soil conditions;

- develop governmental programmes for financial support for farmers' investments in storage capacity;
- upper limits for application of animal manure, corresponding to 170 kg N (approximately 2 animal units) per hectare annually *); these upper limits might be exceeded in the following cases:
(i) long growing seasons,
(ii) crops with high nitrogen uptake,
(iii) high net precipitation in the vulnerable zone,
(iv) soils with exceptionally high denitrification capacity;
- promote studies on nutrient contents of animal manures and the related conversion factors to animal units,

*[**Covered by Annex III - Part II Reg 2.2.** Manure storage: Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.]*

*[**Covered by Annex III - Part II Reg 2.4.** Application of organic manures: Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc.) shall be spread in a way that minimizes the risk for loss of plant nutrients and should not be spread on soils that are frozen*, water saturated or are covered with snow. Organic manures should be incorporated as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.]*

c) utilization efficiency of artificial fertilizers should be promoted by integrated plant production **),

*[**Covered by Annex III - Part II Reg 2.5.** Application rates for nutrients: Application rates for nutrients should not exceed the crops nutrient requirements. National guidelines should be developed with fertilizing Recommendations and they should take reference to:*
a) soil conditions, soil nutrient content, soil type and slope;
b) climatic conditions and irrigation;
c) land use and agricultural practices, including crop rotation systems;
d) all external potential nutrient sources.]

d) green fields should cover 50% of the agricultural land, or the highest possible percentage with respect to climate and soil conditions,

*[**Covered by Annex III - Part II Reg 2.6.** Winter crop cover: In relevant regions the cultivated area should be sufficiently covered by crops in winter and autumn to effectively reduce the loss of plant nutrients.]*

e) further distribution and increased utilization efficiency of animal manure may additionally be promoted by, e.g.:
- slurry banks for surplus manure, possibly in connection with degassing of animal manure in large scale biogas plants;
- use of large lorries, possibly in combination with small application units,

***[Included in a new draft Recommendation]** [Otherwise **Covered by Annex III - Part II Reg 2.2.** Manure storage: Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.]*

*[**Covered by Annex III - Part II Reg 2.4.** Application of organic manures: Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc.) shall be spread in a way that minimizes the risk for loss of plant nutrients and should not be spread on soils that are frozen*, water saturated or are covered with snow. Organic manures should be incorporated as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.]*

f) programmes should be developed and action taken to implement the above mentioned measures and to report on the effect of these measures or any other measures taken to reduce nitrogen leaching from agricultural land,

RECOMMENDS ALSO that the actions stated in a) - f) should be implemented by the Contracting Parties within 5 years,

RECOMMENDS FURTHER that the action taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations, agricultural advice, should be reported to the Commission in 1994 and thereafter every three years.

Footnote:
*) The 170 kg N per hectare stems from the Nitrate Directive of the European Community.
**) In this aspect integrated plant production is a farming practice which optimizes the utilization efficiency of fertilizers through a precise determination of the optimal fertilization level and the use of appropriate crop rotations.

HELCOM RECOMMENDATION 13/10

Adopted 6 February 1992,
having regard to Article 13, Paragraph b)
of the Helsinki Convention

REDUCTION OF PHOSPHORUS LEACHING AND EROSION

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING FURTHER the Ministerial Declaration of 1988 and the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area is caused by nutrient inputs from diffuse sources,

DESIRING to limit this pollution,

RECOMMENDS to the Governments of the Contracting Parties that:

a) artificial fertilizers and animal manure should be applied according to crop need. This principle should be promoted e.g., by the use of:

- economic incentives used by the authorities to reduce phosphorus application and to promote the development of a sustainable agriculture;
- fertilizer and crop-rotation planning, and calculation of phosphorus balance, i.e., with a specification of crop need and applied amounts of phosphorus fertilizers;
- prognosis tools for phosphorus application, such as assessment of soil phosphorus content, soil phosphorus availability, or the use of calculation methods;

*[**Covered by Annex III - Part II Reg 2.5.** Application rates for nutrients: Application rates for nutrients should not exceed the crops nutrient requirements. National guidelines should be developed with fertilizing Recommendations and they should take reference to:*

a) soil conditions, soil nutrient content, soil type and slope;
b) climatic conditions and irrigation;
c) land use and agricultural practices, including crop rotation systems;
d) all external potential nutrient sources.]

b) reduction of soil erosion by means of, e.g., green fallowing, catch crops, winter crops and reduced tillage techniques (e.g. avoidance of mouldboard plowing in autumn);

[reduced tillage techniques are included in a new draft Recommendation. Other provisions covered by Annex III - Part II Reg 2.6. *Winter crop cover: In relevant regions the cultivated area should be sufficiently covered by crops in winter and autumn to effectively reduce the loss of plant nutrients.]*

c) green fields should cover 50% of the agricultural land, or the highest possible percentage depending on climate and soil conditions;

*[**Covered by Annex III - Part II Reg 2.6.** Winter crop cover: In relevant regions the cultivated area should be sufficiently covered by crops in winter and autumn to effectively reduce the loss of plant nutrients.]*

d) sufficiently broad vegetation zones (filter strips) along water courses should be considered as an additional measure;

*[**Covered by Annex III - Part II Reg 2.7** Water protection measures and nutrient reduction areas, a) Surface water: Buffer zones, riparian zones or sedimentation ponds should be established, if necessary.]*

e) programmes should be developed and action taken to implement the above mentioned measures and to report on the effect of these measures or any other measures taken to reduce phosphorus leaching and erosion, ***[Included in a new draft Recommendation]***

RECOMMENDS ALSO that the actions stated in a) - e) should be implemented by the Contracting Parties within 5 years,

RECOMMENDS FURTHER that the action taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations, agricultural advice, should be reported to the Commission in 1994 and thereafter every three years.

HELCOM RECOMMENDATION 13/11

Adopted 6 February 1992,
having regard to Article 13, Paragraph b)
of the Helsinki Convention

REDUCTION OF FARM WASTE DISCHARGES

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING FURTHER the Ministerial Declaration of 1988 and the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area is caused by nutrient inputs from diffuse sources,

DESIRING to limit this pollution,

RECOMMENDS to the Governments of the Contracting Parties that:

a) farm animal houses and similar enclosures for animals shall be designed in such a way that ground water and surface water will not be polluted:
- floors should be made of waterproof materials;
- floors should be constructed to resist the impact of animals and tools;
- appropriate draining and collection of liquid manure should be established,

*[**Included in a new draft Recommendation although (chapeau) in general covered by Annex III - Part II Reg 2.3.** Agricultural waste water and silage effluents: Waste water from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to storages for urine or liquid manure.]*

b) storages should be constructed to safeguard against unintentional spillages:

- solid manure should be stored in dung yards with waterproof floor and side walls;
- manure effluents should be drained off through outlet pipes and collected in liquid manure storages,

*[**Covered by Annex III - Part II Reg 2.3.** Agricultural waste water and silage effluents: Waste water from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to storages for urine or liquid manure.]*

*[**Covered by Annex III - Part II Reg 2.2.** Manure storage: Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months*

storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.]

c) effluents from the preparation and storage of silage should be collected and directed to storages for liquid manure,

*[**Covered by Annex III - Part II Reg 2.3.** Agricultural waste water and silage effluents: Waste water from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to storages for urine or liquid manure.]*

d) containers for liquid manure and farm waste should be made of strong material impermeable to moisture,

*[**Covered by Annex III - Part II Reg 2.2.** Manure storage: Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.]*

e) storages and containers should be made of strong materials as to resist the impact of filling and emptying operations,

*[**Covered by Annex III - Part II Reg 2.2.** Manure storage: Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.]*

f) programmes should be developed and action taken to implement the above mentioned measures and to report on the effect of these measures or any other measures taken to reduce farm waste discharges, ***[Included in a new draft Recommendation]***

RECOMMENDS ALSO that the actions stated in a) - f) should be implemented by the Contracting Parties within 5 years,

RECOMMENDS FURTHER that the actions taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations, agricultural advice, should be reported to the Commission in 1994 and thereafter every three years.

HELCOM RECOMMENDATION 14/4

Adopted 3 February 1993
having regard to Article 13, Paragraph b)
of the Helsinki Convention

REDUCTION OF AMMONIA VOLATILIZATION FROM ANIMAL HOUSING

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties undertake individually or jointly to take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING FURTHER the Ministerial Declaration of 1988, the Baltic Sea Declaration of 1990 and the Baltic Sea Environmental Declaration of 1992, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area are caused by nutrient inputs from diffuse sources,

DESIRING to limit this pollution,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

a) in order to reduce the ammonia emission from advanced livestock breeding, the overall excretion of nitrogen by livestock should be reduced by the use of

- high quality and well-composed fodder, i.e., optimized amino acid composition, a balanced carbohydrate/protein ratio or enzymatically improved digestibility of the fodder,
- advanced feeding systems, i.e., phase feeding and integrated feed evaluation;

b) in order to reduce ammonia emission and excretion of nitrogen from advanced animal husbandry (livestock rearing)

- feeding tables and systems should be developed and applied within 5 years,
- standards for the quality of commercially available fodder, fodder additives and use of on-farm produced fodder should be developed and applied;

c) in order to reduce the emitting surfaces, the manure should be removed from the stables to an outside storage as quickly as possible. The emitting surfaces should be kept as small as possible;

d) standards for drying of poultry manure as quickly as possible after excretion in housing systems where this is feasible (e.g. systems for egg lying hens) should be set within 5 years;

e) programmes should be developed and action taken to implement the above mentioned measures and to report on the effect of these measures or any other measures taken to reduce ammonia volatilization from animal housing,

RECOMMENDS FURTHER that the actions taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations, agricultural advice, should be reported to the Commission in 1997 and thereafter every three years.

HELCOM RECOMMENDATION 16/11*)

Adopted 15 March 1995
having regard to Article 13, Paragraph b)
of the Helsinki Convention

MEASURES TO REDUCE POLLUTION BY PESTICIDES FROM AGRICULTURE, FORESTRY AND HORTICULTURE

[COVERED BY ANNEX III FOR THE AGRICULTURAL PART. SOME AMENDMENTS ARE PROPOSED TO THE RECOMMENDATION FORESTRY TO COVER THE REQUIREMENTS OF THIS RECOMMENDATION ALSO FOR FORESTRY]

THE COMMISSION,

RECALLING that according to Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

RECOGNIZING the importance of agriculture as a source of pollution of the environment by pesticides,

DESIRING to limit this pollution by accomplishing special measures concerned,

RECOMMENDS to the Governments of the Contacting Parties to the Helsinki Convention that the use of pesticides in agriculture, forestry and horticulture should be managed under the following conditions in conformity with the code of conduct on the distribution and use of pesticides adopted by the FAO in 1985:

a) Application technology and practice should be designed to prevent unintentional application or run-off of pesticides to bodies of water.
Establishment of protection zones beside bodies of water should be encouraged and application by aircraft should be strictly controlled;

*[**Covered by Annex III - Part II Reg 3.4.** Application technology: Application technology and practice should be designed to prevent unintentional drift or run-off of plant protection products. Establishment of protection zones along surface waters should be encouraged. Application by aircraft shall be forbidden; exceptional cases require authorization.]*

b) Handling and storage of pesticides should be carried out so that there is no spillage or leakage to bodies of water or to the ground water. Washing of spraying equipment and disposal of pesticide containers should be strictly controlled;

*[**Covered by Annex III - Part II Reg 3.2.** Storage and handling: Storage and handling of plant protection products shall be carried out so that the risks of spillage or leakage are prevented. Some crucial areas are transportation and filling and cleaning of equipment. Other dispersal of plant protection products outside the treated agricultural land area shall be prevented. Waste of plant protection products shall be disposed of according to national legislation.]*

c) Knowledge about the environmental problems caused by pesticides should be improved by collecting and exchanging information on the presence and effects of pesticides in the marine environment of the Baltic Sea and water courses discharging to the Baltic Sea.

The codes of BEP for the use of pesticides included in Attachment 1 should be applied by the Contracting Parties;

d) The environmentally sound use of pesticides should be encouraged by informing and educating farmers and advisors along the lines indicated in Attachment 2;

*[**Covered by Annex III - Part II Reg 6** - Education, information and extension service: The Contracting parties shall promote systems for education, information and extension (advisory service) on environmental issues in the agricultural sector.]*

e) Alternative methods of control of agricultural pests and weeds should be developed and their use encouraged wherever appropriate.

*[**Covered by Annex III - Part II Reg 3.6.** Alternative methods of control: Development of alternative methods for plant protection control should be encouraged.]*

RECOMMENDS ALSO that the Contracting Parties should report to the Commission on their national measures taken in accordance with this Recommendation in 1997 and every three years thereafter,

RECOMMENDS FURTHER that information on results of investigations and approved technology should be exchanged between the Contracting Parties.

*) This Recommendation supersedes HELCOM Recommendation 8/2

HELCOM RECOMMENDATION 18/4

(This Recommendation supersedes HELCOM Recommendation 13/12)

Adopted 11 March 1997,
having regard to Article 13, Paragraph b)
of the Helsinki Convention

MANAGING WETLANDS AND FRESHWATER ECOSYSTEMS FOR RETENTION OF NUTRIENTS

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING FURTHER the Ministerial Declaration of 1988 and the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area is caused by nutrient inputs from diffuse sources, and that drained fens and bogs are an important source of nutrient discharges into the Baltic Sea,

RECOGNIZING that the 50% nutrient reduction target of the Ministerial Declaration of 1988 concerning inputs into the Baltic Sea was not achieved in most countries by 1995,

TAKING INTO CONSIDERATION that fens and bogs and other wetlands are important natural habitats for many threatened plant and animal species,

DESIRING to reduce nutrient inputs effectively,

RECOMMENDS to the Governments of the Contracting Parties that increased nutrient retention in wetland and freshwater systems should be considered through, e.g.:

(i) restoration of shallow lakes and wetlands; ***[Covered by the amended Annex III of the Convention Regulation 2.7. It is however proposed to keep this para in order to keep the Recommendation an entity]***
(ii) large-scale restoration of natural water regimes in drained fens and bogs;
(iii) encouragement of low intensity farming practices on fens and bogs used for agricultural purposes (i.e. preservation or re-establishment of natural or high water regimes, renunciation of fertilization and ploughing);
(iv) allowing natural and re-establishing of the meandering of watercourses, inter alia, taking into account the infrastructure, by means of a combination of green fallowing and the restoration of watercourses;

(v) introduction of environmentally sound practices for maintenance of watercourses;

(vi) programmes should be developed and action taken to implement the above mentioned measures and to report on the effect of these measures or any other measures taken to reduce nutrient discharges,

RECOMMENDS FURTHER that the action taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations, agricultural advice, should be reported to the Commission in 1999 and thereafter every three years.

4.4 FISH FARMING

4.4.1 Overview

There are two HELCOM Recommendations concerning fish farming:

- Recommendation 18/3 on Measures aimed at the reduction of discharges from marine fish farming
- Recommendation 20/1 on Measures aimed at the reduction of discharges from fresh water fish farming

These two Recommendations were merged into a single one to cover both marine and fresh water fish farming.

Short comparison of HELCOM, OSPAR and EU requirements

There are no equivalent OSPAR or EU provisions.

Amendments made to the reporting format

Separate reporting are suggested to be made for marine and freshwater fish farming. The reporting formats are also modified to report data in a more summarised way for the whole country for the more general questions. Pollution loads and another equivalent questions are still suggested to be made for different sea areas. The Sea Areas for the marine fish farming were, however, changed to cover greater areas than in the present Recommendation due to experiences gained from the last reporting round. For fresh water fish farming it is recommended that reporting (except for general information for the whole inland area) is made for catchment areas corresponding to the sea areas for marine fish farming.

Recommendation for issues to be considered in the future revision

The Recommendations on fish farming are fairly new and no immediate revision of these Recommendation are considered to be necessary.

Detailed analysis of the Recommendations on fish farming

The two Recommendations were compared para by para. The structure of the two Recommendations are very similar so comparison was is easy. Below it is indicated which Recommendation's text for each para is proposed to be kept (with additions or amendments indicated in italics). The differences in the paras are underlined.

The scope of the Recommendation has been highlighted in the beginning of the Recommendation (excluding farms producing less than 1000 kg fish/a and ponds using natural fertility). This is also reflected in the reporting format.

HELCOM RECOMMENDATION XX/XX

(Supersedes HELCOM Recommendations 18/3 and 20/1)

Adopted xx 200x
having regard to Article 13, Paragraph b)
of the Helsinki Convention 1974

MEASURES AIMED AT THE REDUCTION OF DISCHARGES FROM FRESH WATER FISH FARMING AND MARINE FISH FARMING

THE COMMISSION,

(20/1) **RECALLING** Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land-based sources by using, inter alia, Best Environmental Practice for all sources and Best Available Technology for point sources,

(20/1) **RECALLING ALSO** to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,

[(18/3) ~~**RECALLING ALSO** Paragraphs 3 and 4 of Annex III to the 1974 Helsinki Convention, in which the Contracting Parties agree to minimize the polluting load of industrial wastes in an appropriate way,~~]

HAVING REGARD to the Ministerial Declaration of 1988, to the Baltic Sea Declaration of 1990 and to the Baltic Sea Environment Declaration of 1992, calling, inter alia, for a substantial reduction of the load of pollutants most harmful to the ecosystems of the Baltic Sea,

[(20/1) ~~RECOGNIZING the importance of discharges, nutrients in particular, from fresh water fish farms as sources of pollution of the aquatic environment~~,]
(18/3) **RECOGNIZING** the importance of discharges and losses, nutrients and organic material in particular, from marine *and fresh water* fish farms as sources of pollution of the aquatic environment,

(20/1) **DESIRING** to limit the pollution from the fish farms located in the catchment area of the Baltic Sea ***and in the Baltic sea*** by Best Available ~~Technologies~~ *Techniques* (BAT) and Best Environmental Practice (BEP),
[(18/3) ~~DESIRING to limit the pollution from the fish farms located in the Baltic Sea or on the coast, when discharging water directly to the Baltic Sea, by Best Environmental Practice~~]

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that the following measures of BAT and BEP should be used in ***marine and*** fresh water fish farming ***(excluding small land based fish farms with a production not exceeding 1000 kg fish/year and fish ponds using natural fertility):***

1. (rec20/1) Plant operation, feeding methods and fish feed, predominantly dry, which cause minimum nutrient discharges and improve fish health and fish quality, should be used and developed.
[rec 18/3 - ~~Plant operation, feeding methods and fish feed, predominantly dry, which cause minimum nutrient discharges and losses, should be used and developed~~]

2. (rec 20/1) New types of fish farms and methods for sludge removal in fish farms should be developed and introduced so as to decrease the discharges of nutrients, organic matters and chemicals.

[rec 18/3 ~~- Methods for sludge removal in fish farms should be developed and introduced so as to decrease the discharges of nutrients, organic matters and chemicals~~]

3. (rec 20/1)The number of fish <u>in a certain</u> water volume should be <u>confirmed to water exchange rate, aeration and feeding method in order to prevent water pollution and eutrophication as well as</u> fish diseases; dead fish should be collected as soon as possible.

[rec 18/3 ~~- The number of fish /water volume should be optimized in order to prevent fish diseases; dead fish should be collected as soon as possible~~]

4. (rec 20/1=rec 18/3)Fish farming should be subject to permits or prior regulations by the competent authority or appropriate body in accordance with the following principles:

a) limits to phosphorus and/or nitrogen discharges should be given in permits or prior regulations. Limits might also be expressed as maximum amounts of phosphorus and/or nitrogen in feed or maximum allowable feed consumption;

b) future environmental effects of the proposed installation should be evaluated as part of the authorization process for intensive fish farms;

c) permits and regulations should be reviewed at appropriate intervals taking into account existing permit conditions.

5. In all fresh water fish farms and marine fish farms nutrient discharges should not exceed the annual average of:

	Phosphorous (tot-P)*	Nitrogen (tot-N)*
Fresh water fish farms (existing)	7 g	60 g
Fresh water farms (new and reconstructed)	6 g	50 g
Marine fish farms	8 g	70 g

* values per 1 kg fish (living weight) produced

The nutrient limit values (N and P) are calculated on the basis that living fish contains 0,4% of phosphorus and 2,75% of nitrogen.

~~(rec 20/1) Small land based fish farms with a production not exceeding 1000 kg fish/year should not be covered by the Recommendation~~ [Moved to the beginning of the Recommendation]

6. Regional planning should be employed as an instrument for directing fish farming activities to suitable areas and mitigating conflicts between fish farming and other uses of the water area. Fish farms should not be placed in areas reserved for nature protection, if that might conflict with the aims of protection.

Sites of fish farms should be selected and discharges from them restricted by means of objective environmental impact evaluation methods in accordance with the holding capacity of the aquatic environment affected.

7. The discharges from and the ecological effects of fish farms should be adequately supervised by competent authority or appropriate body, e.g. by means of fish farm operation records, discharge calculations, monitoring and environmental impact models. The monitoring should focus on measuring reliably and cost-effectively the impacts of fish farming on the eutrophic status, oxygen depletion and the state of the sediments in the affected area.

8. (rec 20/1) The use of bioactive chemicals and drugs at fish farms should be officially approved and effectively controlled to minimize hazards to the environment. The prophylactic use of chemicals should be avoided. Washing or drying of net cages should be used instead of application of toxic antifouling compounds. It is suggested to encourage the use of biological means to reduce the application of chemicals. ***The use of wrasse (Ctenolabrus Rupestris) instead of dichlorvos should be achieved where applicable.*** The use of chloroamphenicols shall be denied.

[rec 18/3 - ~~The use of bioactive chemicals and drugs at fish farms should be officially approved and effectively controlled to minimize hazards to the environment. The prophylactic use of chemicals should be avoided. Washing or drying of net cages should be used instead of application of toxic antifouling compounds~~. The use of wrasse (Ctenolabrus Rupestris) instead of dichlorvos should be achieved where applicable. ~~The use of chloroamphenicols shall be denied~~]

9. The transfer of cultivated fish and introduction of new species should be undertaken according to the Recommendations of EIFAC and ICES thus avoiding the possible negative effects. The interaction between cultured and wild fish should be avoided to protect the locally adapted stock.

10. Waste or waste water resulting from the handling and processing of fish should be treated, disposed of and utilized so as not to cause pollution of the Baltic Sea, surface or ground water,

11. The cooperation between the aquaculture industry and the authorities should be intensified including an elaboration of the following instruments:

a)keeping under review and the further development of BAT and BEP;

b)exchange of information;

c)overview of discharges of potentially hazardous chemicals from aquaculture;

d)control and regulation of the amounts contaminants in fish flesh and shellfish, e.g. mussels;

e)making sure that information is available on fish stock, chemicals and feed used,

f)(rec 20/1)discussions of the calculation methods used as background for issuing permits taking into account the local environmental impact.

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX*) CONCERNING MEASURES AIMED AT THE REDUCTION OF DISCHARGES FROM FRESH WATER AND MARINE FISH FARMING			
Lead Country:			
Country: _____		Year: _____	
Information should be provided differentiated into sea areas for marine fish farming and into catchment areas for inland fish farming(see footnote 1)) for questions 1, 2, 6 and 8. ***The Recommendation does not cover fish farms not exceeding a production of 1000 kg/a or fish ponds using natural fertility as feed.***			
Location 1):			
1. Cultivated species and total annual production (growth of living weight) of each species, t/a ***for plants producing more than 1000 kg/a***	Cultivated species	Annual production, t/a	
2. Number of fish farms using:		Number of fish farms	
	net cages or pens		
	floating basins or vessels		
	basins on shore discharging directly to the Baltic Sea		
	basins in fresh waters		
	others (describe)		
3. Annual mean values for fish farms	Fish farms using:	kg fish / m^3	kg feed / kg fish
	net cages or pens		
	floating basins or vessels		
	basins on shore discharging directly to the Baltic Sea		
	basins in fresh water		
	others		
5. Number of fish farms which practice sludge removal, please describe further			
6. Total feed consumption t/a, classified as		Total feed consumption (t/a)	
	dry feed (dry matter more than 80%)		
	semi moist feed (dry matter 35-80%)		
	moist (fresh) feed (dry matter less than 35%)		

7. Total mean percentage of phosphorus and nitrogen in the feed	Phosphorous in the feed (%)		Nitrogen in the feed (%)
8. Total and specific nutrient discharges	Nutrients	Load (t/a)	Specific load (g/kg fish [living weight]) produced
	tot-P		
	tot-N		
9. Measures taken to assess the impacts of fresh water fish farms on the water environment and to set limits for maximum allowable discharges from fresh water fish farms as part of the authorization process (e.g. environmental risk assessment for site selection, water quality models, objectives and investigations, permit conditions and limit values).			
10. Measures taken to supervise the discharges and environmental effects of fresh water fish farms (e.g. monitoring programmes and obligations, fresh water fish farm operation records, control visits, use of models).			
11. Name and amount of used individual chemicals out of the following groups: therapeutic chemicals, disinfectants, anaesthetics, pesticides, hormones, herbicides, algicide, antifoulants, non-nutritive feed additives.			

*) Supersedes HELCOM Recommendations 18/3 and 20/1

1) Marine fish farming: give the **Sea area** (Bothnian Bay, Bothnian Sea=**1**, Archipelago and Åland Sea=**2**, Gulf of Finland=**3** and Northern Baltic Proper, Western Gotland Basin, Gulf of Riga, Eastern Gotland Basin, Gdansk Basin, Bornholm Basin, Arkona Basin, Belt Sea, The Sound, Kattegat=**4**).
Fresh water fish farming: give the **catchment area** corresponding to the Sea areas for Marine fish farming (**1-4**);

4.5 PRODUCT CONTROL MEASURES

4.5.1 Overview

The eight (actually seven) product control Recommendations in force approach the issue roughly either from a substance point of view (3/2, 6/1) or from a product and use point of view (6/4, 6/6, 14/5, 18/5, 20/2 and 20/4). Of these Recommendations 6/4 and 6/6 approach the issue rather mixing the controlling activity and discharges into one Recommendation 6/6 being actually purely targeted towards industrial sector. Thus the Recommendations have been constructed rather diversely.

The Recommendation 3/2 is proposed to be either significantly revised by its contents or deleted as being practically implemented. The Recommendation 6/6 is proposed to be deleted because the scope of it is covered fully by industrial Recommendations and the Convention 1992. Recommendations 6/4 and 18/5 are proposed to be merged to construct a Recommendation for limiting diffuse source of a substance by diverse product control measures for further amendments.

The preambles of all Recommendations have been changed to correspond the Helsinki Convention 1992, other Recommendations in force dealing with the issue and other Conventions which have been ratified and undersigned by all Contracting Parties. The product control Recommendations consist of very different types of approaches. However, where possible, a the structure presented in chapter 3 C was introduced.

The oldest Recommendations have been substantially changed to avoid obscure overlapping with regulations in other international fora. For most of the Recommendations, limiting the revision only into structural and technical changes would have produced rather obsolete Recommendations.

The proposed reporting formats have in the beginning a question on the general implementation status, statutory implementation status and practical implementation status. Otherwise, the formats were mainly revised by changing the questions so, that answering options would be Yes/No or Yes/Partly/No. Where amounts are required to be reported, the units have been slightly changed or specified in many cases in order to enhance the comparability or the country reports. Some obsolete parts have been deleted. The revision of reporting formats of Recommendations 6/4 and 18/5 is presented for the proposed merged Recommendation. However, the LAND 02/00 concluded that at this point the merging cannot be done. Thus also slightly technically revised reporting formats for 6/4 and 18/5 are also proposed respectively.

For the reader:

- Most proposed Recommendations and reporting formats are written on a new sheet, not by editing the Recommendation in force. Thus it is useful to have the Recommendation in force next to the proposed Recommendation. Only Recommendation 14/5 and the non-merged reporting formats of 6/4 and 18/5 has been modified denoting the changes in the Recommendation in force by *cursive* and ~~overstrikes~~.

4.5.2 Recommendation 3/2 regarding the elimination of discharges of DDT

General

Two options for the Recommendation 3/2 are possible.

- Either the whole Recommendation is deleted, because *all the final uses* of the chemical are banned already in the Convention of 1992 and all the countries have in general implemented the measures requested in the 3/2, OR
- The other option is to keep the Recommendation in the form proposed here.

Of these two options *we suggest to revise, not to delete* the Recommendation. We propose, however, to abandon the reporting format, because DDT and its derivatives are not marketed or produced in the Contracting Parties and they have generally implemented the Recommendation.

Short comparison of HELCOM, OSPAR and EU requirements and amendments proposed to the Recommendation

European Union legislation has set a ban for DDT only on the *use as an active substance in plant protection products.* However, this ban is total set by the Directive 79/117/EEC amended by 85/298/EEC and 83/131/EEC. The use of dicofol is forbidden by the amendment 90/544/EEB to the 79/117/EEC in case in contains more than 1g/kg DDT or DDT related compounds.

No restrictions for **other uses** are applied in EU. Thus Helsinki Convention 1992 covers a broader ban of use than EU. Use of DDT as chemical intermediate in production is covered nowhere. EU has included DDT in the legislation setting concentration limit criteria for harmful substance residues in several food articles. This type of control is anyhow out of scope of the Recommendation 3/2. DDT is included in the scope of PIC –Directive 92/2455/EEC (import and export notification for products) and the regulation on the hazardous waste shipment EEC/259/93 (notification of transfrontier shipment). EU doesn't require reporting on DDT.

The Basel Convention on the control of transboundary movements of hazardous wastes and their disposal (1989) sets rules for notification procedure and other measures for hazardous waste import and export. All the Contracting Parties of Helsinki Convention have ratified the Convention 1992 and should thus be notifying waste containing DDT or its derivatives. This issue is taken into account in the preamble of the draft Recommendation and thus not included in the Recommendation.

OSPAR does not have specific control measures concerning DDT, but it is mentioned in the PARCOM Recommendation 94/5 (BAT and BEP for wet processes in the textile industry), where it is recommended, that the possibility of discharges of e.g. DDT coming from the textile industry should be assessed and prevented.

The following changes are proposed to the revised Recommendation:

- Recommendation to abandon the use in paragraph a) is deleted because it is included in the Annex I of the Helsinki Convention 1992.
- Paragraph b) and the part of paragraph a) concerning the production are combined into one paragraph (paragraph a) in the new Rec.). The proposed exceptions "malaria vector control and laboratory scale research purposes or as a reference standard" are more exactly defined than the exceptions on use in the Helsinki Convention 1992.
- Paragraph c) is tightened. We propose that DDT would be transported or stored only in order to destroy it in environmentally sound manner. The paragraph has the exceptions connected to exceptions in paragraph a). DDT is at the present being imported to the Baltic Sea region for the final destruction.
- Paragraph d) in Recommendation 3/2 is proposed to be deleted in line with the proposal mentioned in the summary of proposals for revisions.

- "RECOMMENDS FURTHER" is deleted to be in line with the Helsinki Convention 1992 and the proposed new Recommendation.
- To accelerate the smallest possible use of DDT globally (or a global ban), we propose that import of products treated with DDT should be recommended to be abandoned in the Baltic Sea countries. This addition is made into the proposed Recommendation.

DDT is not produced or marketed in any Baltic Sea country according to the Poland's lead country report 1999. The DDT is, however, used as an intermediate in the production of dicofol even in Europe and still used in the far Asian, Middle and South American and African countries to combat the malaria vector. DDT may be found in preparations and goods produced in the treated areas. This restriction is difficult to control, but it has information value. It reminds that the DDT problem has not been overcome in the world and that there are also other transportation mechanisms of DDT than just long range transport.

HELCOM RECOMMENDATION XX/XX

(Supersedes HELCOM Recommendation 3/2)

Adopted xx 200x
having regard to Article 20 (1), b)
of the Helsinki Convention, 1992

RECOMMENDATION CONCERNING THE ELIMINATION OF DISCHARGES, EMISSIONS AND LOSSES OF DDT AND ITS DERIVATIVES

THE COMMISSION,

RECALLING Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,

RECALLING ALSO Article 5 and Annex I of the 1992 Helsinki Convention which prohibits all the final uses of DDT and its derivatives in the Convention Area except use for medical and research purposes,

REGARDING that DDT and its derivatives as waste are under the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal (1989) subject to notification procedure and other measures in all Contracting Parties of the Helsinki Convention,

REGARDING that DDT is included in the list of substances for priority action in the hazardous substances strategy of HELCOM (Recommendation 19/5),

DESIRING to attain and implement the target set by the Kalmar Communique of the CBSS, 1996 with regard to hazardous substances,

RECOMMENDS that
a) the Contracting Parties should continue not to produce and market DDT and its derivatives whether in pure state or in mixtures except for use as malaria vector control according to WHO Recommendations and guidelines, laboratory scale research purposes or as a reference standard;
b) domestic and transfrontier shipment as well as storage of DDT and its derivatives should be allowed only for destruction of waste containing DDT and its derivatives in an environmentally sound manner; exemption is given for shipping and storage of DDT and its derivatives due to use as malaria vector control and laboratory scale research purposes or as a reference standard;
c) the Contracting Parties should take all appropriate measures to prevent import of any products treated with DDT or its derivatives (e.g. fibres, textiles, woodwork).

RECOMMENDS ALSO that the Contracting Parties inform the Commission immediately, if DDT or its derivatives are used, produced or marketed in their countries.

4.5.3 Recommendation 6/1 regarding the elimination of the use of PCBs and PCTs

General

The Recommendation, although proposed to be significantly changed, is still necessary. Only the EU countries have fully implemented the Recommendation 6/1. The use of PCBs and PCTs is restricted in the Helsinki Convention 1992.

Short comparison of HELCOM, OSPAR and EU requirements and amendments made to the Recommendation

OSPAR decision 92/3 has set a goal to finally destroy any identifiable article or waste containing PCBs or PCTs by 2010 at the latest and by 1999 for the riparian countries of the North Sea. This principle has faced difficulties in the Contracting Parties of OSPAR as having a too fast schedule.

EU's legislation of PCBs and PCTs in the scope of the Recommendation includes prohibition of the use and reuse of PCBs and PCTs and any mixture containing them more than 0,005 % by weight (Directive 89/677/EEC). The Directive 96/59/EC requires disposal of PCBs and PCTs and any mixtures containing those substances more than 0,005% by weight as soon as possible. For the equipment and the PCBs and PCTs contained therein, decontamination and/or disposal shall be effected at the latest by the end of 2010. The Directive requires the member states also to conduct inventory and labelling of such liquids and equipment, report it to Commission and update it regularly. The disposal or destruction has to be carried out under a licensed action. The incineration happens according to Directive 94/67/EC and if the substances, waste liquids, mixtures and equipment are disposed in other way, the disposal has to comply with similar environmental requirements as if incinerated.

PCBs and PCTs are included in the scope of EU's PIC –Regulation 92/2455/EC and the Basel Convention. In order to ensure the safe destruction and prevent any losses during transport of the articles or waste containing PCBs and PCTs, the export and import should happen only, if it guarantees remarkably safer destruction than in the source country. Thus we propose the paragraph b) in the draft Recommendation to cover this aspect.

There are at the present four different strategies (EU, OSPAR, UN/ECE and HELCOM) to eliminate the PCBs and PCTs. To avoid overlapping work, we have proposed that the mechanism for phasing out the PCBs and PCTs would be similar to the mechanism in the POPs Protocol (1998) of the LRTAP Convention under the UN/ECE (paragraph d in the draft Recommendation). The Protocol has not yet been undersigned or ratified by all HELCOM countries. The Protocol is not as strict as the EU's schedule for disposal.

The following changes are proposed to the revised Recommendation:

- Paragraphs a) and b) are to be combined to paragraph a) in the proposed Recommendation. The ban of production and marketing should still be included in the Recommendation because they are not included in the Convention.
- The restriction on transport and storage is to be added as paragraph b) of the proposed Recommendation. This item is in line with the ban of all marketing and the EU Directive 96/59/EC. A considerable transportation of PCBs and PCTs or liquids containing them is taking place at the moment in order to destroy or dispose the substances. It has to be undelined that this type of transport should take place only in order to dispose or destroy the substances in a more environmentally sound manner than in the place from which the substances are being transported.
- The proposed paragraph c) is in line with the Recommendation 19/5 and the Convention 1992.
- The proposed paragraph d) is similar to the mechanism for PCBs and PCTs in the POPs Protocol (1998) of the LRTAP Convention under the UN/ECE (see rationale for inclusion above in the previous part).
- The inventory, labelling, collection and disposal activities launched by the Contracting Parties to

implement the Recommendation 3/2 should be implemented fully. It has not so far happened according to the lead country report 1999 of Denmark. Thus the draft Recommendation refers to the Recommendation in force.

Amendments made to the reporting format

The reporting format was only partly revised to reflect the proposed draft Recommendation. The detailed reporting format is still useful to monitor the phase out of the substances. The detailed reporting format is proposed to be left out only after the countries have implemented the Recommendation.

HELCOM RECOMMENDATION XX/XX
Supersedes Recommendation 6/1
Adopted xx 200x
having regard to Article 20 (1), b)
of the Helsinki Convention, 1992

RECOMMENDATION CONCERNING THE ELIMINATION OF PCBs AND PCTs

THE COMMISSION,

RECALLING Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,

RECALLING ALSO Article 5 and Annex I of the 1992 Helsinki Convention which prohibits all the uses of polychlorinated biphenyls (PCBs) and polychlorinated terphenyls (PCTs), except in existing closed system equipment until the end of service life or for research, development and analytical purposes,

REGARDING that PCBs and PCTs as waste are under the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal (1989) subject to notification procedure and other measures in all Contracting Parties of the Helsinki Convention,

REGARDING that the PCBs and PCTs are included in the list of substances for priority action in the hazardous substances strategy of HELCOM (Recommendation 19/5),

DESIRING to attain and implement the target set by the Kalmar Communique of the CBSS, 1996 with regard to hazardous substances,

NOTING the actions initiated by the Contracting Parties to the Helsinki Convention in accordance with HELCOM Recommendation 6/1 regarding the elimination of the use of PCBs and PCTs,

NOTING ALSO that there is no new use or production of PCBs or PCTs in the Contracting Parties to the Helsinki Convention, but that the safe phase out the of the use of old PCB –containing articles has not yet been totally completed,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that:

a) PCBs or PCTs or equipment/articles containing these substances should not be produced or marketed in the Baltic Sea states;
b) domestic or transfrontier shipment and storage of any articles or waste containing PCBs or PCTs should be carried out only for destruction of the PCBs or PCTs in an environmentally sound manner;
c) hazardous substitutes of PCBs and PCTs should be substituted with less hazardous or non hazardous substances;
d) For the elimination of any identifiable PCBs and PCTs, Contracting Parties shall make determined efforts designed to lead to
    i. the elimination **of the use** of identifiable PCBs and PCTs in equipment containing substances in volumes greater than 5 dm^3 and having a concentration of 500 ppm PCBs or PCTs or greater, as soon as possible, but no later than 31 December 2010, or 31 December 2015 for countries in transition economy,

ii. the **destruction** in an environmentally sound manner of all PCBs and PCTs referred to in paragraph i) and other PCBs and PCTs in concentration of more than 50 ppm, as soon as possible, but no later than 31 December 2015, or 31 December 2020 for countries in transition economy;
iii. the destruction, decontamination or disposal in an environmentally sound manner.

RECOMMENDS ALSO that the national programmes for identifying, labelling, collection, disposal and destruction recommended in the HELCOM Recommendation 6/1 should be continued unless unnecessary,

RECOMMENDS ALSO that exceptions to the paragraphs a), b) and d) above could, however, be granted for research, development and analytical purposes.

RECOMMENDS FURTHER that the measures taken according to this Recommendation should be reported to the Commission every 3 years starting from 200x.

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX CONCERNING THE ELIMINATION OF THE PCBs AND PCTs			
Lead Country: Denmark			
Country:			
General implementation status:			
Is the Recommendation implemented in the country in terms of legal and other administrative measures? (Yes/Partly/No) Specify			
Is the Recommendation implemented in the country in the practice? (Yes/Partly/No) Specify			
1) Measures to limit or reduce production and marketing of PCBs and PCTs			
	by statutory order:	(Yes/No) Specify	
	based on other administrative measures	(Yes/No) Specify	
	based on information campaigns:	(Yes/No) Specify	
2) Transboundary and domestic shipment			
Is there any transboundary or domestic shipment of articles or waste containing the PCBs or PCTs? (Yes/No/If Yes, for what purpose?)			
Is there any transboundary or domestic shipment of the PCBs or PCTs? (Yes/No/If yes, for what purpose?)			
3) List the hazardous substitutes still in use			
	Substance	Approximation of the amounts marketed at the present (tn)	
4 i) Is there time table to destroy liquids containing more than 50 ppm PCBs and PCTs? (Y/N; specify)			
4 ii) Is there time table to destroy, decontaminate or dispose equipment which have contained more than 5 dm3 or more than 500 ppm PCBs and PCTs? (Y/N; specify)			

National programmes to identify PCB-containing articles in use			
	finished	(Y/N):	
	ongoing	(Y/N):	
	planned	(Y/N):	
National programmes to label PCB-containing articles in use			
*	finished	(Y/N):	
*	ongoing	(Y/N):	
*	planned	(Y/N):	
Controlled collection of PCBs and PCTs			
*	statutory obligation to deliver waste to reception facility	(Y/N)	
*	statutory obligation to deliver containers to re-ception facility	(Y/N)	
*	duty of notification of waste	(Y/N)	
*	duty to keep records on collected amounts	(Y/N)	
*	import/export of PCBs and PCTs is registered	(Y/N)	
Treatment of PCB/PCT-containing articles			
*	at refuse dumps for chemical waste	(Y/N)	
*	at ordinary refuse dumps	(Y/N)	
*	central treatment plants for hazardous substances established	(Y/N)	
*	at incineration plants for house refuse	(Y/N)	
*	by chemical conversion (chlorine removal)	(Y/N)	

Equipment containing PCBs and PCTs			
*	liquids are collected prior to treatment	(Y/N)	
*	equipment is flushed prior to treatment	(Y/N)	
*	containers/equipment is disposed of in mines	(Y/N)	
*	retrieved liquids are destructed at tempera-tures above 1200 degrees Celsius	(Y/N)	
*	retrieved liquids are destructed at tempera-tures below 1200 degrees Celsius	(Y/N)	
Waste oils containing PCBs and PCTs			
*	waste oils are destructed at temperatures above 1200 degrees Celsius	(Y/N)	
*	waste oils are destructed at temperatures below 1200 degrees Celsius	(Y/N)	
Anything else:			

4.5.4 Recommendation 6/4 concerning measures aimed at the reduction of mercury resulting from dentistry and Recommendation 18/5 concerning measures aimed at the reduction of mercury pollution resulting from light sources and electrical equipment

General

The Recommendations 6/4 and 18/5 are targeted to reduce the non point source pollution of mercury from three different use category. Recommendations 6/4 and 18/5 are proposed to be merged in order to reduce the number of Recommendations and to construct a single Recommendation for non point source pollution reduction measures of a single substance. This proposed Recommendation can then be amended by additional uses in the future. Another logical option for the future would be to separate each use pattern to its own Recommendation. That option is, however, not in line with the terms of reference of this project. The Recommendation 6/4 is in general implemented in all Contracting Parties by administrative means, but amalgam is still used in the dentistry.

Short comparison of HELCOM, OSPAR and EU requirements

OSPAR has several Recommendations concerning restriction mercury discharges from several sources (Recommendations 81/1 and 89/3) like dentistry, batteries, thermometers, chlor-alkali industry, electrical equipment and light sources. It has also agreed on a more specific Recommendation 93/2 concerning separation of mercury from waste water of dentistry. EU doesn't have direct counterpart with HELCOM Recommendation 6/4, but it regulates by eco-labelling scheme the development of mercury free light sources (Commission Decision 99/568/EEC) defining the limits of 0,7 mg or 7,5 mg Hg in single ended light bulbs and 10 mg Hg in double ended light bulbs as criteria for receiving an eco-label.

The following changes are proposed to the revised Recommendation:

The draft Recommendation merges the contents of the Recommendations 6/4 and 18/5 together and specifies the former Recommendations slightly. Thus a Recommendation concerning diffuse pollution of mercury will be formed. Poland made a comment on that the uses covered by the Recommendations in force are very different and thus merging would not be feasible. However, the Recommendations 6/4 and 18/5 do not contain such specific technical measures for each use pattern which could not be covered by a merged proposed Recommendation. If more use pattern specific technical Recommendations are intended to be added in the future, the two Recommendations should rather be separated into three different Recommendations (which is not in the line of the project).

Paragraphs a) and b) in the proposed Recommendation include the substitution principle and facilitation of the substitution by administrative and technical means. The deadline of the Recommendation 18/5 a) for substitution cannot be directly transferred into the proposed Recommendation. Setting a new deadline should however, be discussed because the Contracting Parties have not implemented the Recommendation 18/5 a).

Paragraphs c), d) and e) wrap up the contents of the waste management and eco-labelling measures of the Recommendations in force.

Amendments made to the reporting format

The reporting format is revised according to the proposed merged Recommendation. We anyhow propose, that the reporting of the proposed Recommendation will be conducted in connection of future reporting of the Convention 1992 and future reporting according to the Recommendation 19/5 (hazardous substances strategy) if such reporting action is to be made. Such reporting could then include a much more thorough inventory of all diffuse sources of mercury than what is possible in the scope of the present Recommendations concerning mercury. The LAND 2 meeting did conclude to elaborate the Recommendations further separately at this point but accepted the merging proposal. To help the further elaboration, new, slightly modified reporting formats of the both Recommendations are also presented here.

HELCOM RECOMMENDATION XX/XX

(Supersedes HELCOM Recommendations 6/4 and 18/5)

Adopted xx 200x
having regard to Article 20 (1), b)
of the Helsinki Convention, 1992

RECOMMENDATION CONCERNING MERCURY FROM DIFFUSE SOURCES

THE COMMISSION,

RECALLING Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,

RECALLING ALSO Article 5 and Annex I of the 1992 Helsinki Convention which recognizes heavy metals as priority substances for action to reduce pollution in the Convention Area,

REGARDING that waste containing mercury is under the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal (1989) subject to notification procedure and other measures in all Contracting Parties of the Helsinki Convention,

REGARDING that mercury is included in the list of substances for priority action in the hazardous substances strategy of HELCOM (Recommendation 19/5),

DESIRING to attain and implement the target set by the Kalmar Communique of the CBSS, 1996 with regard to hazardous substances,

RECOGNIZING the relative importance of dentistry, electric equipment and light sources as the source of pollution by mercury,

RECOGNIZING ALSO that the Contracting Parties have legal measures in place to to ensure that mercury containing waste is collected and mercury containing waste water is pretreated in the dentistry,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention:

to take all appropriate measures to substitute mercury with less or non hazardous substances or techniques in activities and products causing diffuse pollution, especially in dentistry, light sources and electric equipment;

a) to take all appropriate administrative and technical measures to abandon the marketing and use of mercury containing tooth fillings, light sources and equipment as soon as possible;
b) to further facilitate with all appropriate measures
    i) efficient collection of waste containing mercury,
    ii) separation of mercury from waste water in dentistry;
c) to further enhance with all appropriate measures the recovery of mercury from waste;
d) to support the development of mercury free alternatives by ECO-labelling,

RECOMMENDS FURTHER that the Contracting Parties report every three years to the Commission on the implementation, starting 200x using the given reporting format.

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX CONCERNING MERCURY FROM DIFFUSE SOURCES (for the merged proposal)

Country:
General implementation status:
a. Is the Recommendation implemented in the country in terms of legal or other administrative measures? (Yes/Partly/No) Specify
b. Is the Recommendation been implemented in the country in practice? (Yes/Partly/No) Specify

1. Are the amalgam tooth fillings still used in the dentistry in your country? (Yes/No) Specify the restrictions and initiatives.

2. Are the light sources with mercury still used in Your country? (Yes/No) If yes, specify in which light sources mercury is used. Specify the restrictions and initiatives concerning the mercury content.

3. Is the electrical equipment containing mercury still used in Your country? (Yes/No) Specify the restrictions concerning the mercury content.

4. Describe the collection and recovery systems of mercury containing waste (respectively for dentistry, light sources and electrical equipment if necessary) in Your country. Specify the legislative and other administrative measures concerning the collection and/or recovery.

5. Describe any other problems.

REVISED REPORTING FORMAT FOR HELCOM RECOMMENDATION 6/4 CONCERNING MEASURES AIMED AT THE REDUCTION OF USE OF MERCURY IN DENTISTRY	
Lead Country: Estonia	
1. Country	
2. General implementation status:	
a. Is the Recommendation implemented in the country in terms of legal or other administrative measures? (Yes/Partly/No) Specify	
b. Is the Recommendation been implemented in the country in practice? (Yes/Partly/No) Specify	
~~2. Information on pollution control legislation prescribing reduction of mercury discharges from dentistries to meet HELCOM Recommendation 6/4~~	
3. Indicate the approximate share of mercury free alternatives in tooth fillings today (% of fillings, denote the year(s) of evaluating the share). Specify where the amalgam fillings are still used.	
4. Is there waste and waste water separation and collection in the dentistries? (Yes/Partly/No) Specify the legislative obligations:	

Additional information:
~~Possible reduction in mercury content in excessive sludge at municipal waste water treatment plants and in the environment (seawater, lakes, sediments, fish with indication of the sampling area)~~

REVISED REPORTING FORMAT FOR HELCOM RECOMMENDATION 18/5 CONCERNING MEASURES AIMED AT THE REDUCTION OF MERCURY POLLUTION RESULTING FROM LIGHT SOURCES AND ELECTRICAL EQUIPMENT

~~1.~~ Country: .....

1. General implementation status:
a. Is the Recommendation implemented in the country in terms of legal or other administrative measures? (Yes/Partly/No) Specify
b. Is the Recommendation been implemented in the country in practice? (Yes/Partly/No) Specify

2. Amounts of mercury containing light sources sold in your country (in units per year)

~~type of light source .....~~

~~fluorescent:.....~~

~~compact fluorescent:.....~~

~~mercury vapour high pressure:.....~~

~~metal halide vapour: .....~~

~~sodium vapour high pressure:.....~~
~~other types: .....~~

3. Existing/planned national regulations or restrictions of mercury content in light sources and electrical equipment components

type of regulation or restriction.....

obligatory from: .....

limitations of mercury content in different types of light sources:
..... mg/unit

restriction of use of mercury in specific electrical equipment components:
.....

~~4. Measures taken /planned to be taken in order to limit mercury content in light sources referred to in paragraph b (i) of the Recommendation~~

~~type of measures:.....~~

~~achieved/expected results:.....~~

~~time perspective:.....~~

~~problems: .....~~

~~5. Measures taken/planned to be taken in order to minimize the use of mercury in electrical equipment components~~

~~type of measures: .....~~

~~achieved/expected results: .....~~

~~time perspective: .....~~

~~problems: .....~~

4. ~~6.~~ Existing/planned measures to facilitate the organisation of an effective collection and recovery system for electrical equipment containing components with mercury

type of measures:.....

obligatory from:.....

problems:.....

5. ~~7.~~ Planned collection and/or recovery systems:

problems: .....

4.5.5 Recommendation 6/6 concerning limitation of discharges of cadmium from land-based sources

General

Use of cadmium and its compounds are banned as pesticides in the Helsinki Convention. Cadmium is also a priority substance in the HELCOM and OSPAR hazardous substances strategies. The scope of the Recommendation 6/6 is to control the use and discharges of cadmium in point sources. It is not a real product control measure but rather an industrial Recommendation. The scope of it is presently covered thoroughly by the industrial Recommendations 16/6, 20E/6 and the Helsinki Convention. Thus we propose deletion of this Recommendation.

Short comparison of HELCOM, OSPAR and EU requirements

The use of cadmium is restricted or prohibited in several uses under amendment 91/338/EEC of the "substances Directive" 76/769/EEC. For other EU measures in the scope of the Recommendation, see the comparison for Recommendations 16/6 and 20E/6. PARCOM Recommendation 84/2 for reducing the cadmium pollution recognises the need for measures to regulate cadmium in several uses. However, OSPAR has agreed on measures for point sources (PARCOM Decision 85/2) and cadmium in batteries.

Reasoning for the deletion

The paragraphs of the Recommendation are covered by Recommendations 16/6, 20E/6 and the Helsinki Convention 1992 as follows:

- Paragraph a(i): Electroplating industry is covered by the Recommendation on metal surface treatment (16/6) also in the new version proposed by this project.
- Paragraph a(ii and iii): Pigment and stabiliser production are covered by the Recommendation on chemical industry (20E/6) also in the new version proposed by this project.
- Paragraph b): Covered by Recommendations 16/6 and 20E/6 (technical measures to reduce cadmium discharges, discharge limits) and the Helsinki Convention 1992, where BAT and BEP are defined. Coverage prevails in the Recommendations proposed by this project.
- Paragraph c): Covered by 20E/6) also in the new version proposed by this project.

We propose the deletion of the Recommendation to be in line with the terms of reference of this project.

Recommendations for the issues to be considered in future revisions

We propose that Recommendations, which concern substances and thus cover plenty of pollution sources should not contain specific Recommendations on technical measures (like in the 6/6 paragraph b) of emission and discharge limitation. Instead, use of BAT and BEP would be recommended in general, if necessary. The technical measures should be either documented or recommended elsewhere in other Recommendations, BREF or guideline covering a specific activity. With such approach the adaptation to technical development would be more flexible.

We suggest to consider elaboration of new Recommendation concerning limitation of diffuse sources of cadmium. Such a work should be carried out in the HELCOM Hazardous Substances Group.

4.5.6 Recommendation 14/5 concerning the reduction of diffuse emissions from used batteries containing heavy metals (mercury, cadmium, lead)

General

Recommendation 14/5 is proposed to be changed towards the EU legislation in force. The scope of the Recommendation is in general controlling the whole life cycle of the batteries. Thus the word "used" is proposed to be deleted from the title. Also the "heavy metals" is replaced by "mercury, cadmium or lead" according to the comments of Sweden in the whole Recommendation to avoid misunderstandings.

Short comparison of HELCOM, OSPAR and EU requirements and amendments made to the Recommendation

OSPAR Recommendation 90/2 concerns batteries containing cadmium and mercury. It has similar requirements in terms of collection with the HELCOM Recommendation. In some aspects it is more detailed than the Recommendation 14/5.

A general Recommendation of the substitution principle is proposed to be sustained in the paragraph a). Amendment 98/101/EEC to the EU Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances pose stricter requirement to the mercury content of the batteries (0,0005 % of weight) than the Recommendation 14/5. This amendment is proposed to be added to the Recommendation to the paragraph b) (use restriction) and paragraph d) (labelling requirements). The labelling requirements in the Directive are similar enough with the Recommendation 14/5 to be sustained except the second proposed bullet which seems to be obsolete (comments of Sweden and Finland).

The changes in the draft Recommendation in comparison to the Recommendation 14/5 are denoted with cursive (to be added) and overlinings (to be deleted).

Amendments made to the reporting format

The reporting format was revised according to the general revision format.
The items 5-7 have been changed after proposals and pointing out the difficulties by Sweden.

HELCOM RECOMMENDATION XX/XX

Adopted xx 200x
having regard to Article 20 (1), b)
of the Helsinki Convention, 1992

RECOMMENDATION CONCERNING ~~REDUCTION OF DIFFUSE EMISSIONS FROM~~ ~~USED~~ BATTERIES CONTAINING ~~HEAVY METALS (~~ MERCURY, CADMIUM ~~AND~~ OR LEAD ~~)~~

RECALLING Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,

RECALLING ALSO Article 5 and Annex I of the 1992 Helsinki Convention which recognises heavy metals as priority substances for action to reduce pollution in the Convention Area,

REGARDING that waste containing mercury, cadmium or lead is under the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal (1989) subject to notification procedure and other measures in all Contracting Parties of the Helsinki Convention,

REGARDING that heavy metals are included in the list of substances for priority action in the hazardous substances strategy of HELCOM (Recommendation 19/5),

DESIRING to attain and implement the target set by the Kalmar Communique of the CBSS, 1996 with regard to hazardous substances,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Commission that:

a) batteries containing ~~heavy metals~~ *mercury, cadmium or lead* should be substituted by less hazardous batteries to the extent possible aiming at, in the long run, a complete ceasing of the use of ~~heavy~~ *these* metals;
b) placing of batteries containing more than 0,0005 % of mercury on the market would be prohibited as soon as possible with the exception for button cells and batteries composed of button cells with a mercury content less than 2 %;
c) recovery or safe disposal of spent batteries containing ~~heavy metals~~ *mercury, cadmium or lead* should be applied in order to avoid contamination of the environment,
d) legislation concerning batteries containing ~~heavy metals~~ *mercury, cadmium or lead* should be implemented regulating labelling and collection of used batteries and,
labelling requirements should comply with existing international standards and refer to batteries:
    - more than *0.0005%* ~~0,025 %~~ mercury by weight*;*
    - more than 0.025% cadmium by weight;
    - more than 0.4% lead by weight;

RECOMMENDS FURTHER that the Contracting Parties report every three years to the Commission on the implementation starting 200x using the given reporting format.

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX CONCERNING BATTERIES CONTAINING MERCURY, CADMIUM OR LEAD

Lead Country:

Country:

Year:

1. General implementation status:

- Is the Recommendation implemented in the country in terms of legal and other administrative measures? (Yes/Partly/No) Specify.
- Is the Recommendation implemented in the country in practice? (Yes/Partly/No) Specify.

2. Is the Recommendation in paragraph b) of the Recommendation implemented? (Yes/Partly/No) Specify:

3. Has a collection system of used batteries been implemented? (Yes/Partly/No) Specify.

4. How big portion of the batteries in the end of service life containing mercury, cadmium or lead are collected approximately at the present (denote the year when data obtained)?

5. Describe the types of batteries and uses of batteries, where the mercury, cadmium or lead are still used:

6. Amount of batteries sold per year in (denote the year):

a) Total amount of all batteries (in tonnes/year)
b) Total amount of batteries containing mercury over 0,0005 % (in tonnes/year):
c) Nickel-cadmium, sealed batteries (in tonnes/year)
d) Nickel-cadmium, open batteries (in tonnes/year)
e) Lead containing batteries (in tonnes/year)

7. How the collected batteries are treated at the present? (Recovery, storage, disposal etc..) Specify for mercury, cadmium and lead respectively when necessary.

8. Have labelling requirements for batteries in the paragraph d) of the Recommendation been implemented? (Yes/Partly/No) Specify.

4.5.7 Recommendations 13/13 and 20/2: Approval of pesticides ("plant protection products") for the use in the catchment area of the Baltic Sea

General

The terms of reference for the project included only the revision of Recommendation 13/13 which has recently been revised by the 20/2. Nevertheless we took freedom to propose improval of the reporting format of 20/2.

Short comparison of HELCOM, OSPAR and EU requirements

The Recommendation 13/13 has been superseded by the Recommendations 20/2 and amendment to the Annex III of the Convention 1992 (Recommendation 21/1).

The Recommendation (in 13/13) to establish plant protection product approval criteria specific to the Baltic Sea conditions has not been implemented by the Recommendation 20/2 but the criteria are similar to the corresponding EU Directives (PPP-, ground water and surface water Directives).

Amendments made to the reporting format

The reporting format was revised to serve better the information gathering on the pesticide use and approval in the Baltic Sea conditions. The reporting made under the PPP –Directive (see the extract under) doesn't serve the scope of HELCOM, thus a reporting requirements covering more information are proposed to be maintained.

PPP –Directive (91/414/EEC) Article 12 on the exchange of information requires that

" 1. Within a period of one month at the end of each quarter at least, Member States shall inform each other and the Commission in writing of any plant protection products authorised of withdrawn, in accordance with the provisions of this Directive, indicating at least:

-the name or business name of the holder of the authorisation,
-the trade name of the plant protection product,
-the type of preparation,
-the name and amount of each active substance which it contains,
-the use or uses for which it is intended,
-the maximum residue levels provisionally established where they have not already been set by the Community rules,
-where relevant, the reasons for withdrawal of an authorisation,
-the dossier needed for the evaluation of the maximum residue levels provisionally established.

2. Each Member State shall draw up an annual list of the plant protection products authorised in its territory and shall communicate that list to the other Member States and the Commission.

In accordance with the procedure laid down in Article 21 a standardised information system shall be set up to facilitate the application of paragraphs 1 and 2."

REPORTING FORMAT FOR HELCOM RECOMMENDATION 20/2

Return to Lead Country: Denmark

Reporting Country: _____

For the year: _____

1. Is the Recommendation implemented in the country in terms of legal or other administrative measures? (Yes/Partly/No)

[2. Is the Recommendation implemented in the country in the practice? (Yes/Partly/No)]

3. Amount of pesticides produced per year during the previous three years (kg active substance), if available:

Fungicides
Herbicides
Insecticides (incl. acaricides and molluscicides)
Plant growth regulators
Repellents
Soil disinfectants
other pesticides _____
Sum

4. Amount of pesticides sold per year during the previous three years (for domestic use, without export) (kg active substance):

Fungicides
Herbicides
Insecticides (incl. acaricides and molluscicides)
Plant growth regulators
Repellents
Soil disinfectants
other_____
Sum

5. Size of the
a) total agricultural area (km2)
b) agricultural area on which the pesticides ~~products~~ are applied (exclude the area of organic farming and other pesticide free farming):

Agriculture
Fruit farming
Gardening/Greenhouses

6. Size of the
a) total forestry area (km2) in the country
b) forestry area (km2) on which the products are applied, if available.

7. List of approved active substances contained in the approved plant protection products at the moment:

Active substance(s)
Intended use(s) (fungicide, herbicide, insecticide, etc.)
~~*Specify the reason for approval of those substances banned by HELCOM as pesticides*~~

8. List of active substances contained in withdrawn (e.g. from ecological, commercial reasons) plant protection products:

Active substance(s)
~~*Intended use(s)*~~

Reason for withdrawal if withdrawal is based <u>especially on the environmental conditions in the Baltic Sea Area</u> ~~stricter criteria than the EU plant protection product Directive's (91/414/EEC) Uniform Principles.~~

9. List of active substances banned as pesticides by law (list only those which are not included in the HELCOM's banned pesticides list):

Active substance(s)
Intended use(s)
Reason for "ban"

10. Is there criteria specific to Baltic Sea area's natural conditions used in the approval? (Y/N; specify)

11. How often are the approved products to be re-registered?

4.5.8 Recommendation 20/4 concerning antifouling paints containing organotin compounds

General

The approach of this Recommendation is in use of any antifouling systems where organotin is used concentrating however to paints used in marine environment. Two different versions of the Recommendation are proposed for discussion. The version A would tighten the Recommendation towards the goal agreed in IMO Assembly Resolution 1999 for the basis of restricting the organotin compounds in all antifouling systems for ships. The version B is slightly updated version, where the Recommendation is changed towards the EU legislation.

Helsinki Convention 1992 prohibits the use of organotin containing paints in vessels under 25 m and fish net cages.

Short comparison of HELCOM, OSPAR and EU requirements

OSPAR has adopted a PARCOM Recommendation 87/1 on the use of tributyltin compounds. Its scope is in antifouling paints, not in organotin compounds in general although the title states otherwise. The Recommendation includes a ban on the retail sale or the use of organotin paints for pleasure boats and fish net cages. It also urges to consider restrictions on the use of organotin compounds in anti-fouling paints for the sea-going vessels and for underwater structures as well as to develop a quality standard for organotin compounds in marine and coastal waters. The PARCOM Recommendation 88/1 urges to develop procedures and technology to reduce the amount of organotin compounds reaching the aquatic environment because of docking activities. Neither Recommendation includes reporting obligations, which would be still valid.

EU prohibits by the Directive 76/769/EEC and its amendments 89/677/EEC and 99/51/EEC the use of organotin compounds as antifouling biocides:

- In free association antifouling paint in any vehicle, structure, appliance and equipment;
- For boats of a length less than 25 m;
- In vessels for use on inland waters;
- In any appliances or equipment totally or partly submerged;
- In any appliances or equipment used for fish or shellfish farming;
- In treatment of industrial waters;

The Directive also prohibits the marketing of organotin compounds as antifouling biocide to the public and allows the placing on the market only in packages greater than 20 litres and only for the professional use.

To conclude, OSPAR measures cover the use of the compounds slightly wider, where as EU Directives cover the compounds more widely than the Recommendation 20/4.

Amendments made to the Recommendation

Version A:
A regulation to ban antifouling paints/systems containing organotin compounds in ships is being negotiated in IMO. The IMO Assembly Resolution 1999 agreed to have the ban of the substance for the use in ships as the ultimate goal of the negotiations. This goal is proposed to be transferred into the new Recommendation paragraph a). Nevertheless, the IMO convention will not cover any other uses of organotin compounds in antifouling paints in the marine environment. Thus paragraph b) is proposed in order to cover the gap.

Version B:
In the version B the EU legislation is proposed to be transferred into the Recommendation as being more exact than the Recommendation 20/4. The general Recommendation on substitution principle is proposed to be added (paragraph a in the draft Recommendation). Paragraph b) stays in principle unchanged.

Paragraphs c) – e) are similar to EU measures on the use restrictions of organotin compounds in antifouling paints. The paragraph f) corresponds to the paragraph c) in the Recommendation 20/4. It covers the other uses of antifouling paints with organotin in general, e.g. treatment of water in closed systems in industry. The Recommendation on providing data on concentrations in the marine environment is proposed to be deleted, but some of the obligations are sustained in the reporting format.

Amendments made to the reporting format

The reporting format was reconstructed according to the proposed new structure for all reporting formats of product control Recommendations. The yes/partly/no –answering option was added. The reporting formats are also made to correspond the proposed two versions.

Recommendations for issues the to be considered in future revisions

Organotin compounds, especially tributyltin compounds are endocrine disrupting chemicals in addition of being highly acutely toxic. Organic tin compounds are also priority hazardous substances in the hazardous substances strategy of OSPAR The restrictions of use of these substances in other products than antifouling biocides will be considered in the near future. We urge HELCOM to consider a restriction for all uses in antifouling systems by amending the Annex I of the Helsinki Convention 1992.

HELCOM RECOMMENDATION XX/XX option A)
This Recommendation supersedes HELCOM Recommendation 20/4

Adopted xx 200x
having regard to Article 20 (1), b)
of the Helsinki Convention, 1992

RECOMMENDATION CONCERNING ORGANOTIN COMPOUNDS IN ANTIFOULING SYSTEMS

THE COMMISSION,

RECALLING Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,

RECALLING ALSO Annex I of the Helsinki Convention, according to which pesticides, such as fungicides, herbicides, insecticides, slimicides and chemicals used for the preservation of wood, timber, wood pulp, cellulose, paper, hides and textiles belong to the priority groups of harmful substances for the purposes of Article 5 of the Convention,

RECALLING ALSO Article 5 and Annex I of the 1992 Helsinki Convention prohibits the use of organotin compounds for antifouling paints for pleasure craft under 25 m and fish net cages,

RECALLING FURTHER Article 8 of the 1992 Helsinki Convention, according to which the Contracting Parties shall take measures as set out in Annex IV to protect the Baltic Sea Area from pollution from ships,

RECALLING FINALLY Article 9 of the 1992 Helsinki Convention, according to which the Contracting Parties shall take special measures in order to abate harmful effects on the marine environment of the Baltic Sea Area caused by pleasure craft activities,

HAVING REGARD to the Ministerial Communiqué 1998, calling to implement the HELCOM Recommendation 19/5 on HELCOM Objective with Regard to Hazardous Substances,

DESIRING to attain and implement the target set by the Kalmar Communique of the CBSS, 1996 with regard to hazardous substances,

RECOMMENDS that the Governments of the Contracting Parties to the Helsinki Convention take all appropriate measures to ban the use of antifouling systems containing organotin compounds

a) in all vessels operating mainly in the Convention area;
b) in partly or totally submerged structures, appliances and equipment;

RECOMMENDS FURTHER that the Contracting Parties report every three years to the Commission on the implementation, starting 200x using the given reporting format.

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX CONCERNING ORGANOTIN COMPOUNDS, option A	
Lead Country: Germany	
Country:	
1	**General implementation status:**
	Is the Recommendation implemented in the country in terms of legal or other administrative/guiding measures? (Yes/Partly/No) Specify:
	Is the Recommendation implemented in the country in practice? (Yes/Partly/No) Specify:
2	**Amounts of organotin compounds marketed in the Convention area at the present (as Sn tn/year; denote the exact year):**
	a) as total b) for the use in the Convention Area c) for export
3	**Amounts of *other chemical antifouling systems* marketed at the present:**
	a) Total (as tn active substance/a) b) Names of active substances and the amounts marketed respectively (as tn active substance/a) If possible, separated according to types of use and coating. Types of coating may be a soluble or insoluble matrix (conventional), ablative with a polishing co-polymer or self-polishing co-polymer coatings. If available, information should be given on the probable leaching rate of the different active substances included in the paint formulation.
4	**Which *non-chemical antifouling systems* are used? If possible, separated according to types of method, types of use, extent of usage of these methods.**
5	**What kind of projects have been or are planned to be implemented to develop chemical and/or non-chemical alternatives to organotin antifouling systems? What is the timetable for planned projects?**
6	**Concentrations of organotin compounds in the marine environment:**
i)	Where and for what purpose organotin compound concentrations are measured in your country (don't include data measured in HELCOM monitoring programs)?
ii)	Give a short overview of where to obtain the complete data or provide the documents if available.

HELCOM RECOMMENDATION XX/XX option B)
This Recommendation supersedes HELCOM Recommendation 20/4

Adopted xx 200x
having regard to Article 20 (1), b)
of the Helsinki Convention, 1992

RECOMMENDATION CONCERNING ORGANOTIN COMPOUNDS IN ANTIFOULING SYSTEMS

THE COMMISSION,

RECALLING Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea caused by harmful substances,

RECALLING ALSO Annex I of the Helsinki Convention, according to which pesticides, such as fungicides, herbicides, insecticides, slimicides and chemicals used for the preservation of wood, timber, wood pulp, cellulose, paper, hides and textiles belong to the priority groups of harmful substances for the purposes of Article 5 of the Convention,

RECALLING ALSO Article 5 and Annex I of the 1992 Helsinki Convention prohibits the use of organotin compounds for antifouling paints for pleasure craft under 25 m and fish net cages,

RECALLING FURTHER Article 8 of the 1992 Helsinki Convention, according to which the Contracting Parties shall take measures as set out in Annex IV to protect the Baltic Sea Area from pollution from ships,

RECALLING FINALLY Article 9 of the 1992 Helsinki Convention, according to which the Contracting Parties shall take special measures in order to abate harmful effects on the marine environment of the Baltic Sea Area caused by pleasure craft activities,

HAVING REGARD to the Ministerial Communiqué 1998, calling to implement the HELCOM Recommendation 19/5 on HELCOM Objective with Regard to Hazardous Substances,

DESIRING to attain and implement the target set by the Kalmar Communique of the CBSS, 1996 with regard to hazardous substances,

RECOMMENDS that the Governments of the Contracting Parties to the Helsinki Convention:

a) take effective measures to eliminate such pollution, especially for substituting organotin compounds with less or non hazardous compounds or technical measures in antifouling systems;
b) include in the measures taken a ban on the retail sale or use of antifouling systems containing oganotin compounds;
c) take appropriate measures to prohibit the use of antifouling systems containing organotin compounds in under water or submerged structures, appliances and equipment;
d) take appropriate measures to prohibit the use of antifouling systems containing organotin compounds in any vessels, structures appliances and equipment in the inland waters;
e) ban the use of organotin compounds in free association antifouling paint;
f) consider the need for restrictions on other uses of organotin compounds in antifouling systems;

RECOMMENDS FURTHER that the Contracting Parties report every three years to the Commission on the implementation, starting 200x using the given reporting format.

REPORTING FORMAT FOR HELCOM RECOMMENDATION XX/XX CONCERNING ORGANOTIN COMPOUNDS, option B	
Lead Country: Germany	
Country:	
1	**General implementation status:**
	Is the Recommendation implemented in the country in terms of legal or other administrative/guiding measures? (Y/N)
	Is the Recommendation implemented in the country in practice?
2	**Is the retail marketing of organotin containing antifouling biocides banned? (Y/N); Specify the administrative measures for banning retail marketing**
3	**Use of organotin compounds:**
i)	Are organotin antifouling biocides used in boats of a length less than 25 m? (Y/N); Specify the administrative measures for banning such use
ii)	Are the organotin antifouling biocides used in underwater structures, appliances or equipment? (Y/N); Specify the administrative measures for banning such use
iii)	Are the organotin antifouling biocides used in inland waters in vessels, structures, appliances or equipment? (Y/N); Specify the administrative measures for banning such use
iv)	Are the organotin compounds used in free association antifouling paints? (Y/N); Specify the administrative measures for banning such use
v)	Is the use of organotin compounds used in antifouling biocides restricted otherwise? (Y/N); Specify the administrative measures
vi)	Is the use of organotin compounds in general restricted/controlled otherwise? (Y/N); Specify the administrative measures (e.g. approval of biocide products, ban of use in sea going vessels)
4	**Amounts of organotin compounds marketed (as Sn tn/a):**
i)	a) in soluble matrix antifouling biocides (conventional), b) in insoluble matrix antifouling biocides (conventional, contact leaching), c) in ablative antifouling biocdes with a polishing co-polymer d) self-polishing co-polymer antifouling biocides e) as total in antifouling biocides If available, information should be given on the probable leaching rate of tin included in the different organotin antifouling paints and on possible other biocides included in the paint formulation.
ii)	in other products

3	**Amounts of *other chemical antifouling paints* marketed:**
	c) Total (as tn actives substance/a) d) Names of active substances and the amounts marketed respectively (as tn active substance/a) If possible, separated according to types of use and coating. Types of coating may be a soluble or insoluble matrix (conventional), ablative with a polishing co-polymer or self-polishing co-polymer coatings. If available, information should be given on the probable leaching rate of the different biocides included in the paint formulation.
4	**Which *non-chemical antifouling protection methods* are used? If possible, separated according to types of method, types of use, extent of usage of these methods.**
5	**What kind of projects have been or are planned to be implemented to develop chemical and/or non-chemical alternatives to organotin antifouling paints? What is the timetable for planned projects?**
6	**What technical measures have been taken and are planned to eliminate pollution from antifouling paints? (e.g. paints with lower leaching rate, measures during painting, paint removal, cleaning, waste disposal, run-off, avoiding of dumping of dredged material highly contaminated with Sn or pre-treatment of dredged material, etc.)**
7	**Concentrations of organotin compounds in the marine environment:**
i)	Where and for what purpose organotin compound concentrations are measured in your country (don't include data measured in HELCOM monitoring programs)?
ii)	Give a short overview of where to obtain the complete data or provide the documents if available.

4.6 VARIOUS FIELDS OF ACTIVITY

4.6.1 Overview

The rest of HELCOM TC Recommendations are presented in this chapter and they consist of the following Recommendations:

- One Recommendation on forestry: HELCOM Recommendation 20/3 concerning reduction of nutrient and other pollutants leaching from forestry land
- Two Recommendations on transport:
  - HELCOM Recommendation 9/4 concerning reduction of emissions of lead from combustion of leaded gasoline
  - HELCOM Recommendation 17/1 concerning reduction of emissions from transport sector affecting the Baltic Sea
- One Recommendation on offshore activities: HELCOM Recommendation 18/2
- One Recommendation on waste incineration: HELCOM Recommendation 16/8 on limitation of emissions into the atmosphere and discharges into water from incineration of household waste.

4.6.2 Forestry

General

HELCOM has issued one Recommendation 20/3 on nutrients and other pollutants leaching from forestry and the content of the Recommendation is proposed to be kept as it stands.

Short comparison of HELCOM, OSPAR and EU requirements

There are no equivalent OSPAR or EU requirements

Amendments made to the Recommendation

Recommendation 16/11 on Measures to reduce pollution by pesticides from agriculture, forestry and horticulture was in the first draft proposed to be deleted as requirements on pesticides are included in Annex III. Annex III covers however only agriculture which in our opinion can be regarded to cover also horticulture, but in any case not forestry. The Recommendation on forestry 20/3 restricts the use of pesticides to exceptional conditions but does not include requirements on the application techniques and storing as Recommendation 16/11 (and the Annex). In order to cover these issues some amendments to include these requirements are proposed to the Recommendation on forestry.

Amendments made to the reporting format

Sweden has proposed to include some questions on the length of shoreline without sufficient buffer-strips:Point 9.
b) Total length (km) of new (annual) shorelines with unsufficient bufferstrips
c) Total length (km) of shorelines with unsufficient bufferstrips.
The reason for the inclusion is the following (Swedish proposal):
“You need to know not only what is left according to a) but also an estimate of neglected shorelines according to b). This has to be reported for new intervals of time (annually?).

Then, if you like a figure according to c) this means that you need information about the so to say incoming length of new shorelines unsufficient bufferstrips equal to (b) and you have to have a limit when old shorelines are not leaking any more. Such a limit could be for example a certain tree height in combination with a certain density of trees. Anyhow c) is difficult to monitor. Maybe it is easier to focus on a) and b) in the proposal above."

As Sweden mentions it is difficult to get any data on point c) and therefore we propose to include point b) in the reporting format.

Recommendation for issues to be considered in the future revision

This is a quite recent Recommendation and the requirements have to be implemented by 2002. It is therefore proposed the Recommendation to be looked into after the next reporting round to see which issues are to be considered worth to be revised. The reporting as it stands now does not give a picture of actual pollutant loads from forestry land and this aspect should be kept in mind in the future revision. The division into sub-areas could be limited to larger areas (in the same way as proposed for fish farming).

HELCOM RECOMMENDATION 20/3

Adopted 23 March 1999
having regard to Article 13, Paragraph b)
of the Helsinki Convention 1974

REDUCTION OF NUTRIENTS AND OTHER POLLUTANTS LEACHING FROM FORESTRY LAND

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution,

RECALLING ALSO HELCOM Recommendations dealing with the possible environmental impacts of intensive forestry and of drainage of wetlands in particular that;
HELCOM Recommendation 18/4 ("Managing wetlands and fresh water ecosystems for retention of nutrients") recommends that increased nutrient retention in wetland and fresh water systems should be considered through e.g. large-scale restoration of natural water regimes in drained fens and bogs;

HELCOM Recommendation 15/1 ("Protection of the coastal strip") recommends that in the protected coastal strip intensive forestry and intensive farming including drainage be restricted;
HELCOM Recommendation 15/5 ("System of coastal and marine Baltic Sea Protected Areas (BSPA)") recommends that management plans be established for each BSPA to ensure nature protection and sustainable use of natural resources and that these management plans shall consider all possible negatively affecting activities, such as e.g. intensive forestry.

RECALLING FURTHER the Ministerial Declaration of 1988 and the Baltic Sea Declaration of 1990, calling, inter alia, for a substantive reduction of the inputs caused by diffuse sources,

RECOGNIZING the fact that a substantial part of the eutrophication problems observed in the Baltic Sea Area is caused by nutrient inputs from diffuse sources,

RECOGNIZING ALSO the general principles of sustainable forestry confirmed by the Ministerial Conference on the Protection of Forests in Europe (Helsinki 1993) as "stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regenerative capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems."

RECOGNIZING FURTHER that this concept of sustainable forest management should be understood to
include maintaining the quality and protection of surface water and groundwater systems.

KEEPING IN MIND that a further reduction of deposition of air borne pollutants (especially nitrogen, acidic sulphur compounds and toxic heavy metals) into forest ecosystems and forest soils is a necessary
precondition for the long term efficiency of measures in the forestry sector.

DESIRING to limit pollution from forest management and other anthropogenic load leaching from forestry land.

RECOMMENDS to the Governments of the Contracting Parties that the following practices should bepromoted in forest management, taking into account the best environmental practice (BEP) and the best available *techniques* (BAT):

a) Sufficient buffer strips (zones), to minimize leaching of nutrients and other pollutants, should be determined according to the latest available scientific knowledge, taking into account the characteristic of the soils, the shape of the landscape, the hydrological conditions, etc. These should be left between the shoreline of sea, lakes, streams and brooks and sites of forestry operations such as clear felling, scarification and prescribed burning (site preparation), fertilizing and spreading of pesticides;

b) Large clear felling areas should be avoided. The size and the shape of clear felling areas should be planned with great care and consideration to site conditions and local conditions in order to reduce the release of nutrients into water; this includes the obligation of the Contracting Parties to specify the selected size(s) of clear felling areas by reporting on the underlying national regulations and measures;

c) In maintenance of drainage systems water protection should be taken into account;

d) The first-time drainage of wetlands in natural state should only take place where the leaching of nutrients is expected to be minimized and if it is supported by an environmental impact assessment, except for drainage projects of limited size, time and impact;

e) The deep ploughing of restocking sites on mineral soils should be restricted to minor areas where alternative methods would be excessively expensive and ineffective or environmentally undesirable;

f) The use of pesticides in forestry - for example the control of woody weeds by foliar application in the afforestation of former farmlands - should be restricted only to exceptional conditions and unavoidable minimum *taking into account the following provisions*;

- application technology and practice should be designed to prevent unintentional application or run-off of pesticides to bodies of water.
- application by aircraft should be strictly controlled;

- handling and storage of pesticides should be carried out so that there is no spillage or leakage to bodies of water or to the ground water. Washing of spraying equipment and disposal of pesticide containers should be strictly controlled; *[These 3 paras are proposed to be included from Recommendation 16/11 to cover these issues also for forestry and 16/11 could be deleted.]*

g) Readily soluble fertilizers should be applied as little as possible and should be used according to the needs of plants and not during weather conditions favourable to ground water or surface water pollution (e.g. frozen or water saturated soils, snow etc.;

h) The fertilizing of naturally nutrient rich forest sites as well as nitrogen fertilization in areas saturated with air borne nitrogen (exceedance of critical loads and/or levels) should be stopped. This does not apply to measures for the purpose of soil protection or to safeguard forests endangered by soil acidification where alternative methods would be excessively expensive and ineffective;

i) The time between harvest and regeneration should be minimized and management of forests should be encouraged to keep the forests vigorous and well growing in order to reduce the release of nutrients,

RECOMMENDS ALSO that the actions in a) - i) should be implemented by the Contracting Parties not later than in the year 2002,

RECOMMENDS FURTHER that the actions taken by the Contracting Parties, e.g. economic incentives, Recommendations, regulations and forestry advice, should be reported to the Commission in 2000 and thereafter every six years. Reports should as far as possible include the best possible estimates of the amount of leaching of nutrients and pollutants caused by forest management. Additionally, national regulations concerning the application of paragraph b) should be reported to the Commission one year after adoption of the Recommendation at the latest.

REPORTING FORMAT FOR HELCOM RECOMMENDATION 20/3 CONCERNING REDUCTION OF NUTRIENT AND OTHER POLLUTANT LEACHING FROM FORESTRY LAND FOR THE YEAR 2000

Lead Country: Finland

Country: ..... Year: .....

Sub-area*) .....

1. Total volume and annual increment of growing stock of timber.

2. Total area of the regeneration cuttings (includes clear cutting, seed tree and shelter-wood cutting)

3. Total area of the scarification (tilling, ploughing, etc.) of regeneration cutting sites.

4. Total area of the new drainage of wetlands in natural state.

5. Total number and area (estimation when accepted by the national legislation) of drainage for forestry (both new and remedial ditching areas).

6. Total number and area of drainage with buffer zones and/or silt traps.

7. Total use of phosphorus and nitrogen in forest fertilization.

8. Total use of herbicides and pesticides in forestry.

9. ***a)***Total length (km) of the new (annual) shoreline buffer strips which have been left untouched between the shores of the sea, lakes, streams or brooks, and forestry practice sites. This obligation has to be fulfilled on the basis of the national legal system.
b) Total length (km) of new (annual) shorelines with unsufficient bufferstrips, if available.

10. National regulations and measures concerning the specification of the selected size(s) of clear felling areas.

*) Bothnian Bay, Bothnian Sea, Archipelago and Åland Sea, Gulf of Finland, Northern Baltic Proper, Western Gotland Basin, Gulf of Riga, Eastern Gotland Basin, Gdansk Basin, Bornholm Basin, Arkona Basin, Belt Sea, The Sound, Kattegat

4.6.3 Transport

General

HELCOM has issued two Recommendations on transport:

- HELCOM Recommendation 9/4 concerning reduction of emissions of lead from combustion of leaded gasoline
- HELCOM Recommendation 17/1 concerning reduction of emissions from transport sector affecting the Baltic Sea

The Recommendation concerning reduction of lead has been implemented in most of the Contacting countries. In 2003 only the Russian Federation will be a bigger user of leaded gasoline and even they will probably reach the 80 % level of unleaded gasoline in 2002.

Short comparison of HELCOM, OSPAR and EU requirements

The EU Directive 98/70/EC contains similar provisions as Recommendation 9/4 on reduction of lead emissions and only unleaded fuel should be marketed by the beginning of this year in EU countries**.** Recommendation 17/1 is more general and stresses the need for the introduction of BAT (vehicles and fuels), polluter pays principle and asks for sustainable transportation systems.

There is a follow-up project on transport going on under HELCOM PITF under the lead of Germany. The aim of the project is to come up with a proposal for a new Recommendation on guidelines for environmentally sustainable transportation systems.

There are no equivalent OSPAR requirements

Amendments made to the Recommendations

No amendments were made to Recommendation 9/4 as the requirements in the Recommendation are still valid for some Contracting Parties. No amendments were made to Recommendation 17/1.

Amendments made to the reporting format

No amendments were made to Recommendation 9/4.

Proposal for revision

Recommendation 9/4 is already implemented in most of the Baltic sea countries, 5 countries have no leaded fuel on the market. From 2003 the Russian Federation will be the last significant user of leaded fuel, but will probably by 2002 reach an 80 % level of unleaded fuel use. The marketing of unleaded is already prohibited in St. Petersburg, but in neighbouring regions it can be bought. Due to the fact that leaded fuel is still in use in some of the countries the Recommendation 9/4 is still relevant as long as it is not fully implemented by all the Contracting Parties. We also think that a revision is not needed as only one country is foreseen to continue marketing of unleaded fuel to some (restricted) extent. If there is doubt that the contracting parties will not abandon leaded gasoline (as foreseen at the moment) a deadline for total prohibition on the use of leaded fuel could be included in the next revision. The reporting of the Recommendation should in the next reporting round only be required by Contracting parties which have not yet implemented it fully.

There is no need for immediate revision of Recommendation 17/1 as it is closely connected to the foreseen Recommendation on sustainable transportation systems and it should be looked into in that context.

4.6.4 Offshore activities

General

HELCOM has issued one Recommendation concerning offshore activities 18/2.

Short comparison of HELCOM, OSPAR and EU requirements

There are no equivalent specific EU provisions. OSPAR have 3 different decisions and two Recommendations for offshore installations. The OSPAR and HELCOM requirements cover partly different aspects. Almost all requirements in the HELCOM Recommendation is covered by the amended Annex to the Convention.

Amendments made to the reporting format

No amendments have been made to the reporting format. This issue has to be decided when the reporting of provisions in the Convention is agreed.

Proposal for revision

As most of the requirements in the Recommendation are covered (at least in a general way) by the amended Annex to the Convention the Recommendation is obsolete to a great extent. It is therefore proposed to delete the Recommendation. In accordance with the agricultural sector one problem which arises with the deletion of the offshore Recommendation is that there is no reporting system developed for the implementation of the provisions of the convention. The reporting of the requirements of the convention is however a principal question which must be solved. The development of the reporting of offshore activities covered by the convention could be a task for the Sea Based Pollution Group.

Detailed comparison of HELCOM Recommendation on offshore installations with the provisions of Annex VI of the Convention

The present Recommendation have been compared to the Annex VI of the Convention concerning regulations on prevention of pollution from offshore activities. For each para in each Recommendation it is indicated which regulation of Annex VI covers the para in question.

HELCOM RECOMMENDATION 18/2

(This Recommendation supersedes HELCOM Recommendation 9/5 as from 1 January 1998 for new installations and as from 1 January 2001 for existing installations.)

Adopted 12 March 1997 having regard to Article 13, Paragraph b) of the Helsinki Convention

OFFSHORE ACTIVITIES

THE COMMISSION,

RECALLING that according to Article 10 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), the Contracting Parties shall take all appropriate measures in order to prevent pollution of the marine environment of the Baltic Sea Area resulting from exploration or exploitation of its part of the seabed and the subsoil thereof or from any associated activities thereon, and ensure that adequate equipment is at hand to start an immediate abatement of pollution in that area,

RECALLING ALSO that the regulations in Annex IV to the Helsinki Conventions 1974 and 1992 apply to fixed and floating platforms to the extent discharges and emissions relating to the normal operation of ships are concerned,

RECALLING ALSO that the discharge regulations in Annex IV to the Helsinki Conventions 1974 and 1992 do not apply to the release of harmful substances directly arising from the exploration, exploitation and associated offshore processing of seabed mineral resources,

RECALLING ALSO that offshore exploration and offshore exploitation of oil and gas are the activities likely to result in discharges of oil and noxious substances which cause pollution of the marine environment,

RECALLING ALSO that offshore exploration and offshore exploitation of oil and gas are the activities likely to result in emissions to the atmosphere of substances and groups of substances such as PAHs, organic micro-pollutants, N0x and other substances which cause pollution of the marine environment,

RECALLING ALSO HELCOM Recommendation 17/1, paragraph III.7, calling for limitation of sulphur content in diesel fuel,

RECOGNIZING the increasing interest in offshore activities in the Baltic Sea Area,

DESIRING to prevent pollution from offshore activities by eliminating or reducing the associated discharges and emissions by means of Best Available Technology and Best Environmental Practice,

DESIRING ALSO to have adequate information on the impact on the Baltic Sea Area of offshore activities,

TAKING INTO ACCOUNT that the provisions in Article 12 and Annex VI of the Helsinki Convention 1992, relating to the exploration and exploitation of the seabed and its subsoil, have to be implemented by the Contracting Parties when the Convention enters into force,

RECOMMENDS that the Governments of the Contracting Parties, as from 1 January 1998 for new installations and as from 1 January 2001 for existing installations, take measures as follows:

a) the exploration or exploitation activity in the Baltic Sea Protected Areas (BSPA) should be excluded;

b) the area in which any offshore exploration or exploitation activity is proposed to begin, should be
environmentally assessed before the activity is permitted to start. In the case of exploitation the outcome of this assessment should be notified to the Commission. While offshore exploration or exploitation activities are in progress, the sea-bed, water column and benthos around the site should be monitored as appropriate in view of the environmental conditions of the area concerned (see para a) of the Attachment to this Recommendation);
[Para b) is covered by Annex VI of the Convention, Regulation 3.1:
An environmental impact assessment shall be made before an offshore activity is permitted to start.
In case of exploitation referred to in Regulation 5 the outcome of this assessment shall be noticed to the Commission before the offshore activity is permitted to start.]

c) the use of oil-based drilling muds should be avoided. If this is not possible, the oil-based drilling muds and cuttings arising form the use of oil-based drilling muds should not be discharged in the Baltic Sea Area but taken ashore for final treatment and/or disposal in an environmentally acceptable way;
[Para c) is covered by Annex VI of the Convention, Regulation 4.1:. The use of oil-based drilling mud or muds containing other harmful substances shall be restricted to cases where it is necessary for geological, technical or safety reasons and only after prior authorization by the appropriate national authority. In such cases appropriate measures shall be taken and appropriate installations provided in order to prevent the discharge of such muds into the marine environment.]

d) drilling cuttings arising from the use of water-based drilling muds should preferably be treated in waste water treatment plants ashore. Discharges of drilling cuttings arising from the use of water-based drilling muds are not permitted in specifically sensitive parts of the Baltic Sea Area (see para e) of the Attachment to this Recommendation). Discharge of such cuttings in other parts of the Baltic Sea Area could be permitted only provided that:

(i) the mud has been shown to be of low toxicity in accordance with paragraph b) of the Attachment to this Recommendation;

(ii) none of the substances listed in Annex II to the Helsinki Convention 1974 and in Annex I, paragraph 1.2 to the Helsinki Convention 1992 are deliberately added as a constituent to the mud;

(iii) the content of heavy metals in the mud is minimized; the concentration of Hg and Cd does not exceed 1 mg/kg in the whole mud; and

(iv) the mud residues of cuttings are reduced and recycled using the best available solids control technology;
[Para d) is covered by Annex VI of the Convention, Regulation 4.2& 4.3: *4.2* ***Oil-based drilling muds and cuttings arising from the use of oil-based drilling muds should not be discharged in the Baltic Sea Area taken ashore for final treatment or disposal in an environmentally acceptable manner.***
4.3. The discharge of water-based mud and cutting shall be subject to authorization by the appropriate national authority. Before authorization the content of the water-based mud must be proven to be of low toxicity.]

e) the use of diesel oil-based muds should be prohibited.

However, diesel oil may be added to drilling muds in the following exceptional circumstances and on the condition that the mud used is disposed of ashore:

(i) in work-over operations (see para c) (i) of the Attachment to this Recommendation);

(ii) in well stimulation and completion techniques (see para c) (ii) of the Attachment to this Recommendation); and

(iii) in emergency drilling operations with water-based muds (see para c) (iii) of the Attachment to this
Recommendation) ;

f) the discharge of production water and displacement water should be prohibited unless the oil content is less than 15 mg/l (see para d) of the Attachment to this Recommendation).

If compliance with this limit value cannot be achieved by the use of Best Environmental Practice and Best Available Technology, the appropriate national authority may require adequate additional measures to prevent possible pollution of the marine environment of the Baltic Sea Area and allow, if necessary, a higher limit value
which should, however, be as low as possible and in no case exceed 40 mg/l; the oil content should be measured as provided in sub-paragraph b) above.

The BOD of the production water should be monitored and the need for treatment to reduce BOD in specifically sensitive areas carefully assessed;
[Para f) is covered by Annex VI of the Convention, Regulation 5.b & 5.c: 5.b) the discharge of production water and displacement water is prohibited unless its oil content is proven to be less than 15 mg/l measured by the methods of analysis and sampling to be adopted by the Commission;
5.c) if compliance with this limit value cannot be achieved by the use of Best Environmental Practice and Best Available Technology the appropriate national authority may require adequate additional measures to prevent possible pollution of the marine environment of the Baltic Sea Area and allow, if necessary, a higher limit value which shall, however, be as low as possible and in no case exceed 40 mg/l; the oil content shall be measured as provided in sub-paragraph b) above;]

g) all chemicals and materials should be taken ashore and may be discharged only exceptionally.

A permit should be required for each specific discharge category. Permits should only be issued after an evaluation of the discharge category, the environment around the discharge location and after toxicity testing where appropriate;
[Para g) is covered by Annex VI of the Convention, Regulation 5.a: all chemicals and materials shall be taken ashore and may be discharged only exceptionally after obtaining permission from the appropriate national authority in each individual operation;]

h) all ship and air traffic to offshore installations should be planned with due regard to animals sensitive to disturbance;

i) the incineration of gas in torches should be such that the emission of total carbon and oil droplets into the atmosphere is minimized,

RECOMMENDS FURTHER that the Contracting Parties should report to the Commission on implementation of this Recommendation in the year 1999 and thereafter every 3 years,

DECIDES that the provisions on the sulphur content in fuel oils used on offshore units will be agreed upon by HELCOM 19 in 1998,

DECIDES ALSO that this Recommendation should be reconsidered in 1999, especially concerning reduction of pollution regarding internal combustion engine facilities and the classification of chemicals used in platforms.

a) The environmental sensitivity of the area around an installation should be assessed before, during and after the operation with respect to the following:

(i) the importance of the area for birds and marine mammals;

(ii) the importance of the area for fishing or as spawning grounds for fish and shellfish, and for aquaculture;

(iii) the recreational importance of the area;

(iv) the characteristics of the sediment measured as grain size distribution, dry matter, ignition loss, total hydrocarbon content and Ba, Cr, Pb, Cu, Hg and Cd content;

(v) the abundance and diversity of benthic fauna and the content of selected aliphatic and aromatic hydrocarbons.

If relevant information on the site for a new installation already exists, no new advance assessment is necessarily required (particularly in relation to a) (i) - (iii). As regards the provisions in a) (iv) and (v), sampling is suggested to be performed at distances of 100, 500 and 1000 m on both sides of the installation in the prevailing current direction and at right angles to this.

As regards exploration activities the studies prescribed in a) (iv) should be carried before and after the operation; the studies prescribed in a) (v) are not required.

As regards exploitation activities the studies prescribed in a) (iv) and (v) should be carried out before operation starts, at appropriate intervals during operation and after finishing it.

These requirements should be regarded as a minimum requirement and may be made more stringent if the nature of the area so requires.

b) The toxicity of water-based muds should be assessed by testing the effect of the water-soluble fraction of the whole mud prepared by stirring for 20 hours in a closed system, followed by 2 hours rest to allow separation and then sampling from the middle layer on:

- photosynthesis in one species of marine algae (e.g. Skeletonema costatum);

- growth of the larvae of a marine bivalve (e.g. Mytilus edulis);

- reproduction of a marine crustacean (e.g. Acartia tonsa);

- egg-larvae test with a marine fish (e.g. Clupea harengus).

The EC50 96 h for any of these tests should exceed 10 000 mg/kg.

The following supplementary tests are also recommended:

- biodegradability test (according to OECD guidelines);

- bioaccumulation test (detection of lipophilic substances with a chromatographic method).

c)

(i) Work-over operations:

Producing wells sometimes require remedial measures, e.g. additional preparation of the casing or modifications to the lining or casing, for which oils are necessary. These operations do not involve drilling or the production of cuttings.

(ii) Well stimulation and completion techniques:

When a well has been drilled it is necessary to perforate the casing into the reservoir and sometimes to open up fissures within the reservoir. These operations are carried out at pressure and solid-free fuel oils are often necessary.

(iii) Emergency drilling operations:

If stuck pipe conditions occur with water-based muds then diesel oils may be used to free the drill string.

d) The oil content in discharges should be measured using the IR-technique at the three absorption maxima at approximately 2925, 2960 and 3025 cm-1. Analyses should be made on the non-polar part of the extract.

e) Below are examples of areas which should be regarded as specifically sensitive parts of the Baltic Sea Area:

(i) confined or shallow areas with limited water exchange;

(ii) areas characterized by rare, valuable or particularly fragile ecosystems.

4.6.5 Waste incineration

General

HELCOM has issued one Recommendation (16/8) on limitation of emissions into the atmosphere and discharges into water from incineration of household waste.

Short comparison of HELCOM, OSPAR and EU requirements

The new EU Directive on waste incineration will soon be adopted The comparison of the requirements to the HELCOM requirements are partially difficult as the scope is wider in the EU directive and eg the limit values for waste water discharges are expressed as concentrations mg/l in the Directive and in mg/tonne incinerated waste in the HELCOM Recommendation. The limit values for air emissions are generally stricter in the Directive. There are also limit values for other additional parameters compared to the HELCOM Recommendation. The preparation of the EU BREF under the IPPC Directive for this sector will begin in 2001.

There are no equivalent specific OSPAR provisions.

Amendments made to the Recommendation

No amendments were made as it is regarded that the adoption of the EU Directive in this field should be awaited.

Amendments made to the reporting format

No amendments have been made to the reporting format.

Recommendation for issues to be considered in the future revision

The requirements in the EU directive should be taken into account in the revision of the Recommendation both for new and existing installations. The way the limit values are expressed should be considered to be changed into the same way as in the Directive to simplify comparison of requirements and future reporting. It should be considered if additional parameters should be covered.

The outcome of the EU BREF should be taken into account in future revision of the BAT and BEP provisions of the Recommendation.

Attachment 1: HELCOM Recommendations issued by the Technological Committee grouped by fields of activity

1. INDUSTRY

1.1 General requirements (HELCOM Recommendations 9/8, 13/2, 13/5)
1.2 Pulp and paper (HELCOM Recommendations 16/4, 17/8, 17/9)
1.3 Iron and steel industry (HELCOM Recommendations 11/7, 13/4, 17/5)
1.4 Metal surface treatment (HELCOM Recommendation 16/6)
1.5 Oil refineries (HELCOM Recommendation 6/2)
1.6 Chloralkali industry (HELCOM Recommendation 6/3)
1.7 Production and formulation of pesticides (HELCOM Recommendation 14/2)
1.8 Glass industry (HELCOM Recommendation 14/3)
1.9 Chemical industry (HELCOM Recommendation 16/5)
1.10. Leather industry (HELCOM Recommendation 16/7)
1.11 Textile industry (HELCOM Recommendation 16/10)
1.12 Food industry (HELCOM Recommendation 17/10)

2. MUNICIPALITIES

2.1 Limitation of pollution from stormwater systems (HELCOM Recommendations 5/1, 17/7)
2.2 Municipal wastewater treatment plants (WWTPs) and end-of-pipe discharges (HELCOM Recommendations 7/3, 9/2, 16/9)

3. AGRICULTURE

(HELCOM Recommendations 7/2, 9/3, 13/7, 13/8, 13/9, 13/10, 13/11, 14/4, 16/11, 18/4)

4. FISH FARMING

4.1 Marine fish farming, Fresh water fish farming (HELCOM Recommendation 18/3, 20/1)

5. PRODUCT CONTROL MEASURES

5.1 DDT (HELCOM Recommendation 3/2)
5.2 PCBs and PCTs (HELCOM Recommendation 6/1)
5.4 Cadmium from land-based sources (HELCOM Recommendation 6/6)
5.5 Antifouling paints containing organotin compounds (HELCOM Recommendation 20/4)
5.6 Approval of pesticides (HELCOM Recommendation 13/13 superseded by 20/2)
5.7 Used batteries (HELCOM Recommendation 14/5)
5.8 Mercury from dentistry, light sources and electrical equipment (HELCOM Recommendation 6/4, 18/5)

6 VARIOUS

6.1 Nutrients and other pollutants leaching from forestry (HELCOM Recommendation 20/3)
6.2 Transport (HELCOM Recommendation 9/4, 17/1)
6.1 Offshore activities (HELCOM Recommendation 18/2)
6.3 Incineration of household waste (HELCOM Recommendation 16/8)