

BALTIC SEA ENVIRONMENT PROCEEDINGS

No. 88

THE BALTIC SEA JOINT COMPREHENSIVE ENVIRONMENTAL ACTION PROGRAMME (JCP) - TEN YEARS OF IMPLEMENTATION -

HELSINKI COMMISSION
Baltic Marine Environment Protection Commission
2003

For bibliographic purposes this document should be cited as:
HELCOM, 2003
The Baltic Sea Joint Comprehensive Environmental Action Programme (JCP)
- Ten years of implementation -
Baltic Sea Environ. Proc. No. 88

Information included in this publication or extracts thereof are free for citing on the condition that the complete reference of the publication is given as stated above.

Copyright 2003 by the Helsinki Commission
- Baltic Marine Environment Protection Commission -

ISSN 0357-2994

**THE BALTIC SEA JOINT COMPREHENSIVE
ENVIRONMENTAL ACTION PROGRAMME (JCP)
- TEN YEARS OF IMPLEMENTATION -**

Contents

Contents	1
Executive Summary.....	3
PART 1 Review of ten years of implementation	5
Establishment and organisation.....	6
Objectives and activities	7
Financing	7
Reporting	8
JCP implementation.....	9
1. Policies, Laws and Regulations	10
2. Institutional Strengthening and Human Resource Development	11
3. Investment Activities Addressing Point and Non-point Source Pollution	12
3.1 Investments.....	12
3.2 Point source pollution.....	14
3.2.1 Combined Municipal and Industrial Waste Water Treatment	15
3.2.2 Industry.....	16
3.3 Non-point source pollution	17
3.3.1 Agriculture	17
3.3.2 Transport.....	19
4. Management Programmes for Coastal Lagoons and Wetlands	20
5. Applied Research.....	22
6. Public Awareness and Environmental Education	22
Changes to the JCP and PITF	24
1. Updating and Strengthening the JCP	24
2. Review of HELCOM and PITF	24
Relations with Baltic 21 and other organisations	25
Regional Workshops.....	27
Developments concerning Hot Spots and pollution load reductions.....	27
Conclusions	30
Annex 1 List of JCP Hot Spots by November 2002	33
Annex 2 Pollution load reductions at deleted JCP Hot Spots (November 2002)	41
Annex 3 Pollution reductions per receiving area (t/year)	51
Annex 4 Published reports.....	55
Annex 5 Map of JCP Hot Spots	59
PART 2 Evaluation of the PITF Regional Workshops	61
Baltic Sea Environment Proceedings (BSEP)	69

Executive Summary

The half-way stage has now been reached in the 20-year implementation period of the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP). The political situation around the Baltic Sea is changing again, making a status assessment timely. This report provides an overview of the activities conducted during the last ten years.

The JCP was established in 1992 and provides a practical basis for realising the objectives of the Helsinki Commission.

The HELCOM Programme Implementation Task Force (PITF) has been co-ordinating the implementation of the JCP as an autonomous body within the HELCOM framework. The PITF comprises representatives from the European Union and all the countries in the Baltic Sea drainage basin as well as International Financial Institutions and international governmental and non-governmental organisations.

The main objective of the JCP is to support both "preventive" and "curative" measures in the Baltic drainage basin, and to restore the ecological balance of the Baltic Sea by reducing pollution loads. Identifying and cleaning up pollution Hot Spots is an important part of this work.

The JCP has six main complementary elements:

1. Policies, Laws and Regulations
2. Institutional Strengthening and Human Resource Development
3. Investment Activities Addressing Point and Non-point Source Pollution
4. Management Programmes for Coastal Lagoons and Wetlands
5. Applied Research
6. Public Awareness and Environmental Education.

At the establishment of the JCP in 1992 the total costs of the Programme were estimated at 18 billion Ecu. In 1999 it was estimated that total funding of 10 billion would still be needed to finance the necessary measures at all the Hot Spots.

Financing the JCP has been possible thanks to the shared vision of the Programme, sustained political and public commitment, and the development of strong partnerships between the co-operating parties. Financial support for the Programme to date provides a record of action demonstrating the linkage of environmental priorities established under the JCP with a range of financial resources obtained from many different sources.

In the former countries in transition, where affordability is still a critical constraint on investments, the use of co-financing, combining loans from the International Financial Institutions and grants from the European Union and bilateral donors, has been vital.

The main implementation activities conducted during the first ten years of the Programme implementation are described in Lead Party progress reports and project reports as well as in the Activity Inventories related to Hot Spots, and in Annual Reports. This report provides an overview of the activities so far carried out in relation to the six JCP elements mentioned above.

The report also describes the changes which have taken place in the JCP and PITF, as well as relations with other organisations and programmes. There are many different actors in the field complementing each other. Some overlap in activities is unavoidable,

so close co-ordination and exchange of information is called for. So far the JCP/PITF has followed developments quite passively, but a more proactive role might strengthen HELCOM in the future.

Ten Regional Workshops and one bilateral meeting have been conducted covering all the countries participating in the JCP/PITF. The overall aim of the workshops was to present information and data on the Hot Spots to provide a basis for a detailed discussion of individual Hot Spots with a view to their future deletion from the List of Hot Spots.

Participants in the workshops included representatives from local, regional and national levels and the so-called "Hot Spot owners". The workshops provided an overview of the environmental situation in general and the status of Hot Spots in the countries/regions concerned, as well as information about the needs and possibilities for accelerating the implementation of the JCP towards the deletion of more Hot Spots. Part 2 of this report consists of an evaluation of the PITF Regional Workshops summarising the "lessons learnt". National Thematic Reports based on the workshops have also been published.

Some of the main activities, and possibly the most visible, have been the investment activities concerning point-source and non-point source pollution since the adoption of the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) and the establishment of the HELCOM Programme Implementation Task Force (PITF). Many investment and remediation projects have been conducted in relation to the identified and listed Hot Spots. These activities have resulted in the formal deletion of many Hot Spots. Out of the 132 original Hot Spots a total of 46 had been deleted, and three partly deleted, by the end of 2002.

Estimates of pollution load reductions have been made for the purposes of this report. Specifications of Hot Spots, information about deletion and load reductions as percentages and as tonnes/year are given for each deleted Hot Spot, along with the investments until deletion.

These estimates show that by their deletion the deleted Hot Spots have contributed to a 21% reduction in the BOD load, 25% in the COD load, 22 % in the tot-N load, 27% in the tot-P load, 89% of the AOX load, and 4% and 3% of the NO_x and SO_x loads, respectively.

The implementation of the JCP has been going on for ten years, meaning that we are now half-way through the implementation period. Major progress can be observed, as reflected by:

- decreasing discharges and emissions from Hot Spots
- the increasing number of Hot Spots deleted
- additional actions which will result in further reduction of pollution, e.g. the implementation of Annex III to the Convention (Agriculture), the development of Codes of Good Agricultural Practice, etc.

This progress has been made possible by wide-ranging support for the JCP implementation from all the PITF Members and Observers.

PART 1

Review of ten years of implementation

Establishment and organisation

The Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) was established in 1992 and provides a practical basis for realising the objectives of the Helsinki Commission. A brief overview of the history of the JCP is provided in Table 1.

1989	Liberalisation in Eastern Europe leads to closer contacts between all the countries around the Baltic Sea and increased commitment to environmental co-operation.
1990	The Baltic Sea Declaration is signed in Ronneby, Sweden, by Heads of Governments and High Political Representatives. The Declaration defines the JCP as a tool for the implementation of the 1974 Helsinki Convention
1992	The Diplomatic Conference of the Helsinki Commission approves the JCP's 20-year programme of action, anticipating phased strategic investment throughout the region with an estimated total cost of about 18 billion ECU.
1998	The JCP is reviewed and updated.

Table 1: The history of the JCP

In addition to the ten HELCOM Contracting Parties, the JCP involves the Governments of Belarus, the Czech Republic, Norway, Slovak Republic and Ukraine, the Council of Europe Development Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the Nordic Environment Finance Corporation, the Nordic Investment Bank, the World Bank and the International Baltic Sea Fishery Commission as members. A range of non-governmental organisations also take active part in the activities as observers.

The Programme Implementation Task Force (PITF) has been co-ordinating the implementation of the JCP as an autonomous body within the HELCOM framework. The PITF includes representatives from the European Union and every country in the Baltic Sea drainage basin as well as international financial institutions and international governmental and non-governmental organisations.

In 1992 a total of 132 especially polluting sites and areas within the Baltic Sea catchment area were identified by an international group of scientists, engineers, environmental managers, bankers and representatives of national authorities of the countries in the catchment area. These were included in an official "List of Hot Spots". The locations of the Hot Spots are described in Table 2.

During the course of the JCP implementation, some Hot Spots have been split into Sub-Hot Spots in order to facilitate the management and identification of pollution reduction measures. At some Hot Spots pollution has already been successfully reduced, leading to deletion from the list. The List of Hot Spots as of November 2002 is presented in Annex 1.

Locations of the 132 JCP Hot Spots (1992)	
Belarus	3
Czech Republic	3 (1)
Denmark	4
Estonia	13 (1)
Finland	10
Germany	9 (1)
Latvia	10 (1)
Lithuania	16 (1)
Poland	37 (3)
Russia	19 (2)
Sweden	12
Ukraine	1

Table 2: Polluting sites included in the "List of Hot Spots" in 1992. The total sum is 137 because five Hot Spots are shared between countries (indicated in brackets)

A Preparatory Group (PG) subordinated to the PITF has been organising Regional Workshops together with the countries involved in the JCP in order to review Hot Spot activities and the implementation of the JCP, and to produce Thematic Reports.

Objectives and activities

The main objectives of the JCP are to support both "preventive" and "curative" measures in the Baltic drainage basin, and to restore the ecological balance of the Baltic Sea by reducing pollution loads. This involves identifying pollution sources and carrying out measures to reduce the inputs of organic matter, nutrients and other harmful substances. Identifying and cleaning up pollution Hot Spots is an important part of this work.

The JCP has six main complementary elements:

1. Policies, Laws and Regulations
2. Institutional Strengthening and Human Resource Development
3. Investment Activities Addressing Point and Non-point Source Pollution
4. Management Programmes for Coastal Lagoons and Wetlands
5. Applied Research
6. Public Awareness and Environmental Education.

After a review of the work of HELCOM in 1999, it was decided to incorporate the implementation of elements 1, 2, 5 and 6 into the daily work of HELCOM, thereby leaving elements 3 and 4 (planning and investment) as the focus for the PITF.

Financing

Alleviating pollution at Hot Spots involves considerable investments. At the establishment of the JCP in 1992 the costs of the Programme were estimated to be 18 billion Ecu. In 1999 it was estimated that a total funding of 10 billion would still be needed to finance the necessary measures at all the remaining Hot Spots.

Financing the JCP has been possible thanks to the shared vision of the Programme, sustained political and public commitment, and the development of strong partnerships between the co-operating parties. Financial support for the Programme to date provides a record of action demonstrating the linkage of environmental priorities established under the JCP with a range of financial resources provided by many different sources.

In practice, financing has been agreed between the owners responsible for the Hot Spots, governments, donors, national banks, the private sector and international financial institutions. HELCOM has no special financial resources for the implementation of the JCP, but relies on contributions from the Contracting Parties and donor projects. Most investments come from domestic sources.

At the Regional Workshop in Cracow in September 2001 it was stated that foreign investment in Poland had been relatively low (about 6%) while most investment originated from the enterprises themselves (46%). Other contributions have come from ecological funds (25%), national state and commercial banks (13%) and state investments (5%) and other sources (5%). State investments had been decreasing in recent years. It is not clear whether the example of Poland is representative of the situation in the other Baltic Sea countries.

In the former countries in transition, where affordability is still a critical constraint on investments, the use of co-financing, combining loans from the International Financial Institutions and grants from the European Union and bilateral donors, has been vital. When grants are also available, projects can be larger, allowing greater impacts and reducing the effective cost to the co-operating government or investors. This approach also reduces the impacts in terms of the adjustment of tariffs for services, thus decreasing potential adverse impacts on populations with low or fixed incomes.

Reporting

Reporting on the results and activities of PITF has always been considered vital. The aims of reporting are:

- to increase awareness and get public support for the implementation of the JCP
- to produce information for decision-makers, in particular in the field of investments
- to reflect results and ongoing work, in order to help identify problems and deficiencies.

Hot Spot Activity Inventories and Annual Reports on activities under Elements 1, 2, 4, 5 and 6 were published from 1993. From 1996, the Annual Reports were published including selected parts of Activity Inventories, which were also published in separate editions. Since 1998, the Annual Report has contained the whole Activity Inventory as well as a comprehensive chapter on municipal and industrial waste water treatment based on Swedish Lead Party Reports. The Hot Spot Status questionnaires that form the basis for these inventories have repeatedly been changed to include extended or improved information.

The Annual Report from 1999 is the most recent of these publications, since it was found that the Regional Workshops convened by the Preparatory Group together with the Hot Spot countries in the period from May 2000 till October 2002 provided sufficient detailed information about developments at the Hot Spots. The reports prepared by each country also provide detailed pictures of the situation. The Preparatory group has

prepared an overall evaluation of the round of Regional Workshops (included in Part 2 of this publication).

Additional means have been used to inform the public about the work of the PITF and progress with the JCP (e.g. BSEP, HELCOM News and the HELCOM website as well as special brochures and posters etc. published for various occasions).

JCP implementation

The Programme Implementation Task Force (PITF) had by the end of 2002 convened a total of 19 meetings. Since 2000 the PITF has only held annual meetings.

The main implementation activities conducted during the first ten years of the Programme implementation are described in Lead Party progress reports and project reports as well as in Activity Inventories related to Hot Spots, and in Annual Reports.

During the first meetings, Lead Party roles were established for the co-ordination of the individual elements of the Programme. Table 3 lists the Lead Parties responsible. It is worth noting that NGO observers have also taken an active approach and have contributed significantly to the implementation of the Programme.

Programme element	Lead Party
1. Policies, Laws and Regulations	Germany (1993-) ICLEI (1993-95)
2. Institutional Strengthening and Human Resource Development	Germany (1993-) ICLEI (1993-95) UBC (1993-) INEM (1997-99)
3. Investment Activities	
* Point Source Pollution	
Municipal and Industrial Wastewater treatment	Sweden (1993-)
Industrial Pollution Control	Finland (1993-)
* Non-point Source Pollution	
Agriculture	Poland (1993-99) Germany (1999-)
Traffic	Germany (1993-2001)
4. Management Programmes for Coastal Lagoons and Wetlands	WWF (1993-)
5. Applied Research	EC and TC*) assisting (1993-99) Sweden and Latvia (1998-)
6. Public Awareness and Environmental Education	CCB (1993-94) Finland (1994-99)

Table 3: Lead Party responsibility for the individual JCP elements

*) EC: Environmental Committee, TC: Technological Committee of the Helsinki Commission

The approaches adopted within the different elements have differed considerably. Some Lead Parties have worked with direct contact between members, while others have had permanent working groups which met to discuss current issues. Special projects, with appointed Project Managers and Project Teams meeting as appropriate, have also been important.

The main outcomes of the implementation of the JCP are described below in relation to the respective Programme elements.

1. Policies, Laws and Regulations

This Programme element was set up to focus on policy and regulatory activities, aiming at the establishment of a long-term environmental framework for all of the Baltic Sea States. One of its most important aspects concerns the legal arrangements that form a background for investment activities in the environmental sector.

During the course of the JCP implementation there has been a major drive towards the implementation of EU regulations in most of the transitional countries involved in the PITF. Conformity with EU legislation and international norms has been a fundamental goal for these EU accession countries.

Most of these countries have also improved their use of economic instruments to obtain resources for environmental protection measures in general, and particularly for waste water treatment. The implementation of economic instruments has raised several concerns, however, due to the likelihood of indirect negative social impacts. PITF 2 established an ad hoc Working Group on the Use of Economic Instruments (PITF-Economy) with Sweden as Lead Country. This group was dissolved after reporting to PITF 4 in 1994.

From the beginning, the focus has been on the exchange of experience and the transfer of know-how by means of seminars, training programmes, study visits and the preparation of different manuals and guidelines.

According to the findings of the "Recommendations for Updating and Strengthening of the JCP" (1998) the Lead Party Germany analysed the real needs in the countries concerned in order to facilitate effective support and assistance from potential donors or third parties. It was concluded that the background for investment activities now seems to exist in almost every country. This meant that the main purpose of the implementation of this Programme element had been achieved.

HELCOM EXTRA 99 concluded when reorganising the work of HELCOM that the remaining aspects of Programme element 1 could be dealt with through co-operation between Observer Organisations and the Secretariat as part of HELCOM's routine work. Nevertheless, the Lead Party has maintained its responsibility for supporting the Secretariat's work in this respect.

Because of the importance of transboundary water management, Germany hosted a Round Table meeting in Vilnius in June 1999 in co-operation with the World Bank and Lithuania. This round table brought together experts from all over the Baltic Sea region, resulting in the fruitful exchange of relevant experiences. The discussions involved representatives from organisations including the ECE Water Convention, the European Commission, the Lake Peipsi/Chudskoe Ozero Project, the Neva-Ladoga Basin Water Management Administration, Odra River Co-operation, Daugava River and Lielupe River Co-operation, Nemunas River and Kursiu Lagoon Co-operation, and Vistula

Lagoon and Bug River Co-operation. The Vilnius Recommendations were formulated to provide a basis for further developments in this field.

Some of the issues under this Programme element 1 are closely associated with issues within Programme element 2. Consequently, elements 1 and 2 have been dealt with together by the Lead Party, Germany.

2. Institutional Strengthening and Human Resource Development

The main challenge in implementing this Programme element has been to build up the organisational and human resource capacities necessary to develop effective management systems and to plan, design and operate pollution control measures, including follow-up and monitoring.

The expertise available for environmental and legal issues has been insufficient in the countries in transition, particularly at regional and local level. There was a considerable need for financing and the transfer of know-how for the establishment of public infrastructures and the training of experts. The process of decentralisation of environmental management to regional and local levels further highlighted these deficiencies. In some cases there was a risk that although environmental legislation might be in place, it might not be effective due to a lack of enforcement from a weak administrative network. Programme activities were therefore designed to help define and strengthen the role of both central and local government authorities in new and evolving legal frameworks.

An extensive range of contacts and networks has been established around the Baltic Sea, including twinning arrangements between cities and regional administrations, networks between organisations, and contacts between schools. Such environmental contacts have been of major importance with regard to human resource development.

Projects supported by EBRD, EIB, NEFCO and the World Bank have included significant elements to enhance the institutional strengthening of water and waste water utilities, with support from a variety of bilateral donors.

The Union of Baltic Cities (UBC) has undertaken a wide range of programmes to support the transfer of experience between countries in the region. The Baltic Sustainable Cities Programme, and the associated Municipal Environmental Auditing Project and Local Agenda 21 activities, are good examples of multilateral activities for institutional strengthening and human resource development. The ICLEI's ECO-Cities Programme and the Manual on Good Environmental Practice are other such examples.

The International Network for Environmental Management (INEM) has been developing the institutional capacity of business organisations, and promoting sound environmental management in enterprises. Related activities have included seminars, the distribution of information on case studies and activities in different countries, the Environmental Management Internship Exchange Programme, an Environmental Good Housekeeping Guide and Eco Mapping activities.

Taking into account the "Recommendations for the Updating and Strengthening of the JCP", the Lead Party Germany analysed the real needs of the countries concerned. This analysis led to the result that the necessary arrangements had been finalised. In line with the findings of the HELCOM Review Steering Group it was decided that this Programme element (2) no longer needs to be permanently established. The

underlying aspects should in future be observed by co-operating Observer Organisations and the Secretariat as part of their routine work. Nevertheless, the Lead Parties were still prepared to assist in this work.

3. Investment Activities Addressing Point and Non-point Source Pollution

3.1 Investments

Special attention has been given within the JCP to investment activities concerning point-source pollution and non-point source pollution. This emphasis is reflected in the estimated costs of more than 17 billion ECUs for the implementation of the proposed measures. Originally 132 Hot Spots were identified within the catchment area of the Baltic Sea. The investments needed for these Hot Spots were estimated at approximately 10 billion ECUs in 1992.

HELCOM PITF has prepared a series of annual reports, each including a review of ongoing investment activities. These reviews, known as "Activity Inventories", have been based on answers to questionnaires on the Status of Hot Spots in each country. The latest systematically collected data on investments was presented in the Seventh Activity Inventory, as published in the Annual Report 1999. The Inventory presents this data in several tables. An overview of these tables is given in Table 4 below.

Table No.	Information presented
Table 1	Activities at the Hot Spots
Table 2	Estimated costs and allocated/reserved resources
Table 3	Number of Hot Spots and the status of information received
Table 4	Updated information not received
Table 5	Removed Hot Spots
Table 6	Inventory table on Hot Spots
Table 7	Waste water discharges from reported Hot Spots
Table 8	Air emissions from reported Hot Spots
Table 9	Inventory table on waste water discharges and air emissions
Table 10	Activity at the Hot Spots by country
Table 11	Activity at the Hot Spots by site type
Table 12	Activity at the Hot Spots and inventory table on Investments

Table 4: Overview of information tables in the Seventh Activity Inventory

The data presented in the Seventh Activity Inventory was primarily based on additional and updated information received through answers to a questionnaire distributed to the HELCOM PITF Contact Persons in July 1999, and on earlier similar activity inventories. The questions for the Seventh Activity Inventory concerned discharges and emissions, the status of measures taken or planned, expected actions, and technical assistance and investments provided to implement the JCP. The main scope of these questions was the same as in earlier inventories, but more information was included regarding the costs of technical assistance (TA) and investments.

Tables 5 and 6 summarise the estimated costs as calculated in 1992, the updated estimates from 1999 (the most recent estimates available), the resources so far allocated or reserved, and remaining TA/investment costs by sector and by country.

Sector	Number of Hot Spots	1992 estimates for investment costs	1999 estimates for investment costs	Allocated or reserved resources	Remaining TA or investment costs
		Million EURO	Million EURO	Million EURO	Million EURO
Agricultural	17	2,683	2,433	3	2,260
Coastal lagoon	5	120	111	32	249
Industrial	36	1,981	894	116	777
Municipal	54	4,465	4,029	1,294	2,736
Waste treatment	3	176	29	17	13
Total	115 (remaining Hot Spots)	9,425	7,495	1,462	6,034

Table 5: Estimated costs and allocated/reserved resources by sector (Seventh Activity Inventory)

Country	Number of Hot Spots	1992 estimates for investment costs	1999 estimates for investment costs	Allocated or reserved resources	Remaining TA or investment costs
		Million EURO	Million EURO	Million EURO	Million EURO
Belarus	3	31	8	0	8
Czech	2	114	114	0	114
Czech/Poland	1	-	-	-	-
Denmark	4	313	340	240	100
Estonia	10	1,538	534	11	524
Estonia/Latvia	1	20	20	0	20
Finland	4	258	48	12	36
Germany	5	175	165	60	105
Latvia	9	417	95	42	42
Lithuania	15	497	452	120	332
Lithuania/Russia	1	30	30	0	30
Poland	34	4,023	3,178	465	2,712
Poland/Germany	1	20	29	29	0
Russia	16	1,371	1,941	166	1,775
Russia/Poland	1	20	2	2	0
Sweden	7	385	324	310	25
Ukraine	1	214	214	4	210
Total	115 (remaining Hot Spots)	9,425	7,495	1,462	6,034

Table 6: Estimated costs and allocated/reserved resources by country (Seventh Activity Inventory)

According to the information received in 1999, some 20 % (EUR 1.5 billion) of the estimated TA/investment costs for the remaining 115 Hot Spots had at that time been allocated or reserved. The 1999 estimate for the total costs of EUR 7.5 billion was based on the answers to the questionnaire for the Inventory. The new estimate was lower than the original estimate of the Joint Comprehensive Environmental Action Programme issued in 1992 (EUR 9.4 billion), possibly due to more accurate investment estimates and because of the deletion of a number of Hot Spots from the list following the successful completion of investment programmes.

The 1999 report further concluded that the allocation of resources had been fastest in the waste treatment sector, the municipal sector and the coastal lagoons sectors where the proportions of the TA/investment needed that had already reportedly been allocated were 61%, 33%, and 29%, respectively. For the industrial sector the proportion was 13% and for the agricultural sector 0%. This figure for the agricultural sector did not reflect the real allocation of resources, because figures for agricultural Hot Spots were only given in a few cases.

In the industrial sector, progress had been better than expected, based on the allocation of resources in this sector (especially concerning waste water discharges). Waste water discharges were reduced by 55% to 83% between 1992 and 1998. The allocated resources as reported represented only 13% of the estimated funding needs. This may indicate that investments have been efficient, and that less financing would be required for the completion of the Programme than originally anticipated. Some industrial operations have been shut down, and consequently required less financing than was originally estimated.

In the municipal sector, reported reductions in waste water discharge reduction had been moderate compared to the resources allocated. The reductions in waste water emissions had varied from 24% to 53% between 1992 and 1998, and 33% of the necessary funding had reportedly been allocated. No reductions in air emissions in the municipal sector were reported by 1999.

In the agricultural sector, neither the allocation of resources nor emissions were reported consistently enough for conclusions to be drawn on their efficiency. Very few emission figures were available, and most of the figures were from 1992.

In the solid waste treatment sector, there are only three Hot Spots. Only one of them reported emissions (N and P). Some 61% of the necessary funds had reportedly been allocated. Nitrogen emissions had been significantly reduced, but there were no evident reductions in phosphorus emissions.

The 1999 report concludes that a total sum of EUR 1.5 billion had been reserved or allocated. In addition to this sum, about EUR 410 (Mill) had been invested in the Hot Spots removed from the list.

During the Regional Workshops conducted in 2000-2002, new information on investments was presented. Annex 2, which describes the pollution load reductions obtained at the deleted Hot Spots, contains investment data from these Hot Spots.

3.2 Point source pollution

Initially, the Lead Party Sweden, together with Finland, the Lead Party for Industry, arranged a workshop to structure tasks and to develop a strategy for this work. The Parties faced major challenges in identifying common and practical problems at the Hot

Spot level, and in organising seminars discussing the problems e.g. twinning arrangements between Western and Eastern waste water treatment organisations.

In the municipal sector, the workshop noted unresolved institutional questions, including ownership, administration and management, fees and cash flows, as well as difficulties in obtaining loans and government guarantees. An unwillingness to prioritise environmental investments was also seen as a major issue.

Major impediments identified in the industrial sector included the slow rate of privatisation, uncertainties related to ownership, and an unwillingness among investors to take over landfills, old waste water treatment facilities and polluted sites.

Point sources of pollution were considered to make up the core of the JCP, and the related projects received the most wide-ranging assistance from the PITF members, IFI's and the European Commission.

3.2.1 Combined Municipal and Industrial Waste Water Treatment

There were originally 54 Municipal or Municipal/Industrial Hot Spots designated in 1992. At some Hot Spots there may be one or more municipal or combined waste water systems, including sewerage networks and treatment plants (existing or planned).

During the two Regional Workshops in Poland, it was proposed that certain Hot Spots should be split into several Sub-Hot Spots in order to facilitate their management and actions to reduce the pollution. This raised the total number of listed Hot Spots and Sub-Hot Spots to 59, of which now 14 have subsequently been deleted. The deleted Hot Spots are situated in Poland (6), Germany (6), Denmark (1) and Sweden (1).

In 1996 and 1999, the Lead Party Sweden elaborated comprehensive reports in which estimates were made of pollution loads and the reductions obtained. Due to incomplete reporting from the Hot Spots, it was difficult to calculate these reductions, but there were indications that BOD and P discharges were decreasing.

The 1999 report presented sums of the discharges and reductions reported from Hot Spots for each of the sub-basins of the Baltic Sea. The main conclusions were as follows:

- *Gulf of Finland:*

On the basis of the data submitted, the total discharges of treated waste water into the Gulf of Finland from three St. Petersburg and two Estonian Hot Spots increased by approximately 17 million cubic meters (Mm³) between 1997 and 1998. Discharges of untreated waste water meanwhile increased by approximately 24 Mm³. Discharges of BOD, phosphorus and nitrogen, into the Gulf of Finland from the Hot Spots reported increased between 1997 and 1998: for BOD by 26,400 tonnes, for phosphorus by 80 tonnes and for nitrogen by 22 tonnes. It was not possible to determine whether total discharges into the Gulf of Finland had increased or decreased, due to a lack of data.

- *Gulf of Riga:*

Discharges of treated waste water into the Gulf of Riga from Hot Spots reported both in 1997 and 1998 had decreased by 73 Mm³, while discharges of untreated waste water had increased by 48 Mm³. The amounts of BOD, phosphorus and nitrogen discharged from these Hot Spots decreased between 1997 and 1998; by 6,350 tonnes, 130 tonnes and 660 tonnes, respectively.

- *Eastern Gotland Basin including Gdansk Basin:*

Discharges of both treated and untreated waste water into the Eastern Gotland Basin from Hot Spots reported both in 1997 and 1998 increased by 10 and 18 Mm³ respectively. Discharges of BOD and nitrogen decreased by 50 and 1,300 tonnes respectively, while discharges of phosphorus increased by 59 tonnes.

The trends presented in the report were solely based on data that had been submitted both in 1997 and 1998. Due to the lack of data from a number of Hot Spots, it was not possible to establish trends for all Hot Spots, or to determine whether total discharges into the specific catchment area had decreased or increased.

The situation has changed since the 1999 Annual Report. The data that formed the basis of the 1999 report was incomplete, although the trends it indicated may have been correct, reflecting improved monitoring and the fact that more waste water had been fed into sewerage systems without any real improvements in waste water treatment. More recently, new treatment plants have been finalised, resulting in substantial load reductions and also in the deletion of several Hot Spots in this area.

3.2.2 Industry

Out of the 132 originally listed Hot Spots, 50 were industrial sites. Additionally, many industries are connected to municipal sewerage systems listed as municipal Hot Spots. Out of the 50 industrial Hot Spots, 37 are located in the countries in transition, including nine classified as "priority Hot Spots". At least three pulp and paper mills and two food processing plants have been closed in these countries, and production has decreased at several other plants as well.

Certain industrial Hot Spots have been split into Sub-Hot Spots, as was the case for some municipal Hot Spots, in order to facilitate their management and actions to reduce the pollution. This resulted in a total of 59 industrial Hot Spots/Sub-Hot Spots. But by the end of 2002, 32 of these sites had been deleted. The deleted industrial Hot Spots are situated in Estonia (2), Finland (6), Latvia (1), Poland (16), Russia (1) and Sweden (6).

The 1999 Annual Report states that more financial aid was evidently given to the industrial sector outside the Hot Spots List than to the Hot Spots themselves. This indicates that it has been easier to find local motivation and resources to invest in small enterprises and relatively modern facilities, rather than in large installations where considerable investments are needed to modernise the whole manufacturing process.

In addition to the financial aid given to local enterprises, support has also been given to western enterprises establishing new production facilities in the former countries in transition. Certain existing production plants have been taken over by western enterprises. The process of privatisation has been slow, however, with uncertainties over ownership adding to the problems. Land reform is an important part of this process. There has also been a general unwillingness among investors to take over out-dated installations and polluted sites.

The 1999 report concludes that one of the key factors related to progress in project preparation and implementation is political and financial commitment at the national and local levels. The international partners require long-term commitments before they will be prepared to participate in projects. Since public support has been critical in sustaining political commitment, public awareness should be improved, particularly with regard to the Hot Spots.

The report provided comments which seem still valid. Investment studies should only be prepared when a clear commitment exists from the national government, and when potential sources of domestic and foreign finance are identified. The need for closer regional co-operation between riparian countries was also stressed.

A successful project should have clear definitions, goals and objectives. Detailed evaluations and reviews of alternatives will provide better project designs. Project management, enterprise management and operational training should be included. An interactive process between technical and financial analysis is required due to the key importance of affordability. It is also important to adopt a realistic implementation period, and anticipate potential changes in customs duties and taxes.

Private sector investments in projects or Hot Spots should be stimulated. Private sector involvement has so far been limited. The legal frameworks and institutional infrastructures in the former countries in transition have now become more defined and stable, so the private sector may find investments in these countries more attractive today. Environmental audits should be included in the privatisation process in order to clarify the legal basis for operational and liability questions related to polluted sites and their renovation, and to help assess cost levels accordingly.

Effective regulation and enforcement are also vital to ensure that industries meet environmental requirements. Developments of this capacity at national and local levels still need strengthening, and could be a priority in terms of the use of donor funds within the industrial sector. Support should also be given to improve the professional training of personnel from industrial enterprises. Hence, project management, enterprise management and operational training may be included in environmental investment projects.

3.3 Non-point source pollution

3.3.1 Agriculture

Controlling runoff and emissions from agricultural land and livestock operations is a critical element of the immediate and long-term strategy to restore the ecological balance of the Baltic Sea. This is because of the significant impacts of the runoff of manure, fertilizers and pesticides on surface waters and groundwaters, as well as the emissions of nutrients and pesticides into the atmosphere and finally the sea.

The most significant problems in the implementation of the agricultural runoff and livestock operation components of the JCP in the former countries in transition have been associated with the restitution of private property, the privatisation and restructuring of the agricultural sector, and the elaboration of national agricultural policies and legislation, including appropriate economic instruments, government grants and loan systems for the agricultural sector. In other countries or parts thereof the problems mostly relate to intensive animal husbandry and intensive crop production, with high usage of fertilisers and pesticides.

Large areas of the Baltic Sea catchment area have been identified as agricultural Hot Spots. The List of JCP Hot Spots established in 1992 contained 16 Agricultural Hot Spots. The List also contains five Coastal Lagoons/Wetlands Hot Spots which are influenced by agricultural activities and where relevant management programmes are needed. Out of these 21 Hot Spots, 13 are located in the former countries in transition. So far five Hot Spots have been deleted from the List: two in Estonia, one shared by

Estonia and Latvia, one in Latvia and one in Germany. The main reasons for deletion have been remarkable decrease in agricultural activities in Estonia and Latvia due to economic recession.

During the initial stages of JCP implementation, the Lead Party Poland arranged expert meetings on a "Programme for the reduction of pollution entering the Baltic Sea from agricultural activity and rural settlements", and also prepared a report on Good Agricultural Practise Codes, which are now being implemented.

A Project Team on Agriculture (PTA) was subsequently established. The PTA finalised its main tasks by elaborating an Annex on Agriculture for the Helsinki Convention, and Codes of Good Agricultural Practice (GAP), as well as a review of monitoring projects related to agriculture in the Baltic Sea catchment area. The Annex on Agriculture was adopted at the HELCOM Ministerial Meeting in March 1998. The GAP Codes were almost finalised by the end of 1999, and have been adopted everywhere except Russia, where a set of Codes should be finalised through a Russian-German co-operation project.

The PTA supported the preparation of the Baltic Agenda 21 work in 1998, and attempted to ensure that additional work in the Baltic 21 context would not overlap with the PTA's own work. Concerning the Baltic 21 Sector Agriculture, a sector report was elaborated under the leadership of Sweden and HELCOM. Different programmes and actions were proposed for implementation over the coming years and decades. Poland took the lead role in this sector, together with HELCOM. The sector report "Sustainable development of the agricultural sector in the Baltic Sea Region" was published in the Baltic Sea Environmental Proceedings Series (BSEP No. 74).

In 1999, HELCOM PITF's continued commitment towards reducing pollution caused by agricultural activities was confirmed, and an Analysis Group was established with Denmark as Lead Party. The Analysis Group was to report and propose to PITF how to proceed, in particular on dividing the work related to agriculture between HELCOM and Baltic 21, and on the possible establishment of a HELCOM body on agriculture. The resulting agreement on the division of work between PITF and Baltic 21 was endorsed by PITF 14 and the Baltic 21 Senior Officials Group (SOG 11).

In 1999, PITF 15 adopted a proposal by the new Lead Party Germany to establish an ad hoc Working Group on Agriculture (WGA), including its Terms of Reference, objectives and work plan. The WGA was scheduled to operate for three years, and one of its main tasks was to tackle nutrient loads from agricultural sources. The Land-based Pollution Group (HELCOM LAND) was invited to share responsibility for the WGA with PITF.

The main topics considered in this work were:

- Status of the implementation of Annex III to the Convention
- Review of efforts in relation to agricultural Hot Spots
- Differentiation between agriculture and related business
- Harmonisation of HELCOM Recommendations (agriculture)
- Monitoring
- Co-operation with other organisations
- Information about research projects in the field of agriculture.

The meetings of the Working Group on Agriculture have provided a forum for the exchange of information and experiences between the Contracting Parties, and have made good progress. The main results are a report prepared by a Danish project

“Assessing the Status of the Implementation of Environmental regulations on agriculture in the Baltic and partly the North Sea areas”, the synthesising of HELCOM Recommendations on agriculture into a new “Umbrella Recommendation on Agriculture” and a Norwegian report on “Nutrient losses from agriculture in the Nordic and Baltic countries”. Furthermore, the WGA has provided comments and advice regarding measures for the deletion of agricultural Hot Spots and convened thematic seminars of relevance to agriculture. Due to the different views of the Contracting Parties on the needs and content of a definition of “agriculture”, no agreement has been reached on such a definition.

As part of the implementation of the JCP, a number of projects to reduce pollution from agriculture have been or are still being implemented. The outcome has indicated a high potential for successfully introducing, at the field level, effective measures to assist farmers in reducing agricultural runoff.

Despite some progress in controlling pollution from agriculture, there is still an urgent need to take further action in order to achieve substantial reductions. Measures need to be taken at the policy level in combination with concrete field programmes.

3.3.2 Transport

The JCP aims to support activities to reduce air pollution from mobile sources, including emission control technologies for vehicles, inspection programmes for improved engine tuning and the maintenance of control systems. Transportation vehicles emit large quantities of CO, CO₂, NO, VOC and metals. Of special concern for the Baltic Sea are nitrogen and lead. About 300,000 tonnes of nitrogen is deposited annually into the Baltic Sea via the atmosphere (30% of the total nitrogen input).

During the initial stages of JCP implementation, several workshops and seminars were arranged. Germany and Latvia arranged a seminar in Riga on “Certification, registration and enforcement of vehicles, and the inspection and maintenance of in-use vehicles”. This was followed by a workshop organised by Finland and Estonia in Pärnu on “Organisation and technical requirements for the public transport; traffic impact assessment as a part of Physical Planning”.

In February 1998, a policy and technology oriented Project on Transportation was established. This was built upon HELCOM Recommendation 17/1 "Reduction of Emissions from Transport Sector Affecting the Baltic Sea" which called for the integration of environmental considerations into transportation planning and policies. The project developed guidelines and recommendations for investments in infrastructure to support sustainable, less polluting transport systems in the HELCOM PITF countries.

At the PITF's request, the Lead Party Germany presented proposals on how to proceed, including the option of a new HELCOM Recommendation, after consultation with the IFIs, Baltic 21 and taking into account other comments. Following this request, Germany started a follow-up project in order to promote the implementation of draft guidelines for environmentally sustainable transportation investment decision-making in the Baltic Sea region, both at country and multilateral financial institutions level. The draft guidelines proposed:

- changes in project appraisal (general)
- changes in economic and financial appraisal
- changes in current environmental assessment practice

- financing more sustainable transport projects
- public participation in policy making and planning to be framed for potential application as a new HELCOM Recommendation.

PITF 15 approved the proposal to elaborate a draft HELCOM Recommendation, and welcomed possible political support from Baltic 21. It also endorsed the publishing of the project report "Transport Sector Investment Decision-Making in the Baltic Sea Region" in the Baltic Sea Environment Proceedings (BSEP No. 79).

In 2000, the Lead Party Germany informed PITF 17 that it had failed to attain agreement on the draft HELCOM Recommendation "Environmentally sustainable transportation investment decision-making" in negotiations with the IFI's, and that the draft had been forwarded to HELCOM LAND for further consideration. In the following PITF meeting, Germany reported on this outcome that some countries were evidently against the draft Recommendation, and that the IFI's were not concerned. Germany did not want to continue as Lead Party. It was concluded that it seemed impossible to reach a consensus on the text, and PITF 18 decided to refrain from further work on this issue.

The pollution problems caused by transport are very important, particularly regarding atmospheric nitrogen loads. Discussions during meetings and seminars have increased the awareness of problems and some guidelines and advice have been produced, but the overall results of the efforts on transport seem somewhat disappointing. The unattainability of consensus on the Recommendation, as described above, indicates that the responsible actors are still reluctant to change the shape of their transport policies.

4. Management Programmes for Coastal Lagoons and Wetlands

Wetlands and coastal lagoons are environmentally sensitive and economically valuable areas. They serve as important buffers in the transport of contaminants to the Baltic Sea, by acting as natural traps and providing variable levels of natural treatment for biodegradable wastes, especially with respect to nutrients. They also provide vital habitats for a great variety of fauna and flora, including many migratory birds.

A Working Group on Management Programmes for Coastal Lagoons and Wetlands (HELCOM PITF-MLW) was established in 1993, with the WWF functioning as Lead Party and providing the Secretariat. The group initially met twice a year, and since 1998 once a year.

The group's activities focused on five coastal areas around the Baltic Sea. Each area had its own Area Task Team (ATT), who had to develop a management plan in close co-operation with the local, regional and national authorities. The key target areas were:

- The Matsalu Bay in Estonia
- The Gulf of Riga, shared by Estonia and Latvia (later sub-divided into the Käina-Bay and Engure-Kemeri areas)
- The Curonian (Kursiu) Lagoon, shared by Lithuania and the Kaliningrad Oblast in Russia
- The Vistula Lagoon, shared by the Kaliningrad Oblast and Poland
- The Oder/Odra Lagoon, shared by Poland and Germany.

The common overall objectives of these management plans are as follows:

- to provide information on the most urgent and pressing environmental and conservation problems in each Task Area;
- to provide a mechanism for closer co-ordination and integration between environmental concerns and major economic activities in the Areas concerned;
- to provide national, regional and local authorities with guidelines for sustainable and ecologically sound development in the coastal areas covered by the plans.

The long-term goal of the above ATT activities was to contribute to ensuring the environmental balance of the Baltic Sea through the elaboration and implementation of Integrated Coastal Zone Management (ICZM) plans for sustainable development in the coastal areas. Technical Guidelines for Integrated Coastal Zone Management were developed in order to support this work. Seminars and conferences were co-sponsored by the HELCOM PITF MLW.

The five Integrated ICZM Plans were finalised, covering the environmentally sensitive and economically valuable areas mentioned above. Each Plan provides a synthesis of data as well as an overview of potential problems, thus significantly improving the foundation for wetland planning in these areas. The Management Plans were adopted by HELCOM PITF MLW and HELCOM PITF in 1996, and PITF further requested that national Governments accept them. The acceptance of local and national authorities has been achieved to a great extent, already reflecting a certain degree of commitment by Governments.

Altogether, for the recipient countries, the MLW process constituted a significant step forward in the development of techniques for the purposes of applied nature conservation, the involvement of public into the planning process, and for better understanding of sustainable development in general. Also, it provided an opportunity for direct bilateral co-operation between scientists, planners, and decision-makers.

An internationally recognised ICZM expert serving as Peer Reviewer for the management plans noted that the plans differed in quality, and recommended that they should be upgraded in terms of operationalisation and the wider involvement of the public in the decision-making process, in order to provide a good basis for implementation. Consequently, it was agreed to upgrade the existing management plans, and to improve the institutional environment for their implementation. This interim period was also used for the preparation of lists of potential implementation projects, and for seeking funding from donors.

During the implementation phase, many activities and projects have been conducted and some are still on-going. The Estonian Ministry of Environment joined their efforts on implementing ICZM planning principles in Käina Bay and Matsalu into one area: Väinameri.

HELCOM PITF approved in 1999 a proposal by the HELCOM PITF MLW to dissolve the Working Group and to continue activities related to coastal lagoons and wetlands within the framework of the newly established Nature Conservation and Coastal Zone Management Group. Regarding the issue of spatial planning, PITF stressed the need for further co-operation with VASAB 2010, and encouraged the MLW representatives and VASAB to co-operate on country level with the spatial planning authorities.

5. Applied Research

The Programme element "Applied Research" was included in the JCP as a supportive activity to facilitate the implementation of the JCP.

At the initial stage of JCP implementation, the HELCOM Environment and Technological Committees (EC and TC) were invited to take a lead in co-ordinating this Programme element. In the absence of any specific problem-oriented needs, the work of the Environment and Technological Committees in this respect was restricted to their continuous activities in monitoring and assessing the state of the marine environment, and evaluating pollution loads entering the Baltic Sea from land-based sources and in atmospheric deposition.

Under this Programme element, seminars and workshops have been conducted on issues such as Cost-Effective Methods for Water Protection, Cost-Effective Methods for Waste Water Management and Planning and Construction of Waste Water Treatment Plants.

After discussing the usefulness of the Programme element, and considering the advice of the project on Up-dating and Strengthening the JCP, it was decided to keep this Programme element. The focus should henceforth be on research related to cost-effective measures and critical loads (mainly with respect to eutrophication), as well as on problems regarding data reliability which need to be solved to facilitate the implementation of the JCP.

Consequently, the Programme element has aimed to build up the knowledge base needed to develop solutions, and widen and deepen the understanding of critical problems. Priority applied research tasks include environmental trends, special issues of system ecology, the evaluation of critical loads, environmental health problems, and issues in key sectors such as agriculture and transportation. Additional issues recommended for applied research included least-cost approaches, biological effect monitoring, the strengthening of monitoring systems, and the dissemination of information.

Following HELCOM EXTRA 1999, the PITF 15 meeting invited the newly established Monitoring and Assessment Group (HELCOM MONAS) to take responsibility for the JCP element "Applied Research", and to report to PITF.

A World Bank/GEF funded project has been discussed under this element. The "Baltic Sea Regional Project" focuses on living marine resources, non-point source pollution from agriculture, the strengthening of monitoring systems and the development of indicators. It is due to start in June 2003.

6. Public Awareness and Environmental Education

This Programme element aims to develop a broad and sustainable base of support for the implementation of the JCP. Public awareness is needed to obtain support for actions by localities, municipalities and national governments. Both public awareness and environmental education are needed to develop widespread understanding and popular support for long-term activities within the Baltic Sea and its catchment area.

A Working Group on Public Awareness & Environmental Education was established in 1993. The aim was to integrate Public Awareness and Environmental Education (PA&EE) in the process of implementing the other JCP elements. Initially the group met

twice a year, and since 1998 only once a year. In the early stages, a Sub-group "Funding for the projects", with Sweden as Lead Party, produced a list of useful www-links related to EU support for environmental activities, and distributed information on foundational and corporate support for environmental programmes in Europe.

National reports on PA&EE activities formed the basis of discussions and identification of a variety of priority projects. Many projects aimed at PA & EE have been conducted in different countries. These projects were at least bilateral, and normally included NGOs such as CCB, WWF and ECAT.

Examples of PA&EE projects include:

- Strategic Guidelines for Improving Public Awareness and Environmental Education in the Baltic Sea Area (Finland)
- PA&EE Strategy and Research Programme Development in the Baltic Region (Latvia)
- Nature Watch Baltic (WWF)
- PA&EE Manager Training (CCB)
- Publications - future needs for books, booklets and other material, seminars and fairs (Poland)
- Regional Forum: Restoring Baltic Environment and Public Awareness (Latvia)
- Baltic Master Degree Course on Environmental Management (Latvia).

Additionally, Finland prepared a report "Raising environmental awareness in the Baltic Sea area" and ICLEI conducted a Manual Project "ICLEI's Guide to Environmental Management for Local Authorities in Central and Eastern Europe". The goal of this project was to assist local authorities in decision-making related to the environment.

As Lead Party, Finland established contacts with BEENET (the Baltic Environmental Education Network), BFU (the Baltic Floating University), UNESCO and other organisations, according to the mandate of the Working Group on PA& EE, and sought involvement in the PITF Projects on Agriculture and Transportation and in the Integrated Coastal Zone Management Plans. Agriculture and Transportation are still items with high political priority, but broad public support is needed before targets can be agreed between the Contracting Parties.

The 11th meeting of the Working Group on Public Awareness and Environmental Education mainly focused on consequences arising from the outcome of HELCOM EXTRA 99. In order to avoid the watering down of the goals for PA&EE as formulated in the JCP when transforming the JCP's PA&EE activities into the new HELCOM structure, it was recommended that the goals of this Programme element (6) could be incorporated into the coming activity of the new HELCOM component on information and communication. In order to preserve the experience gained by the Working Group, HELCOM and the Secretariat were offered assistance in their work related to public awareness and environmental education, through the establishment of a network of advisors, for example.

The PITF decided in 1999 to dissolve the Working Group. Baltic 21 expressed the view that the activities of an advisory network might be included in Joint Action No. 7 under Baltic 21, if the scope of its work was broadened to include sustainable development.

The state of implementation is not satisfactory in all countries. Such instruments as "Public hearings" still have to be developed in some countries. Environmental education should also be more effectively integrated into all educational programmes,

starting with elementary schools and including secondary schools, colleges, universities, etc.

Changes to the JCP and PITF

1. Updating and Strengthening the JCP

The Heads of Governments of the Baltic Sea States expressed at the Visby Summit in May 1996 a desire to update and strengthen the JCP. Following this decision, the HELCOM Programme Implementation Task Force (PITF) adopted the Terms of Reference for a Project on Updating and Strengthening of the JCP in October 1996. Poland offered to act as Lead Party for this Project and to provide the Project Manager and the Project Secretary.

The Terms of Reference for the project focused on the following issues: assessment of current environmental conditions in the Baltic Sea region; review of progress achieved in implementation of the JCP, reviewing lessons learned from this process, evaluation of emerging trends in the region; and providing a proposal for updating and strengthening the Programme, including recommendations concerning the financing of future activities.

The Project "Updating and Strengthening of the JCP" was finalised in February 1998, and a Special Meeting of HELCOM PITF adopted the final report "Recommendations for Updating and Strengthening" (Baltic Sea Environment Proceedings No. 72). The Recommendations and a background document were forwarded to HELCOM 19 in March 1998. The Ministers duly endorsed the Recommendations for Updating and Strengthening of the Programme for implementation.

The review process reconfirmed the soundness of the basic approach of the JCP, although limited adjustments were made to its structure and content, largely related to the role of HELCOM and PITF, Programme co-ordination and special support, major actions in the Programme elements, and actions to address emerging issues.

In May 1998, PITF considered actions to implement the Recommendations for Updating and Strengthening the JCP. A Consultation Meeting between the Secretariat and interested delegations in September 1998 allowed more precise formulation of the actions required by members, observers and the Secretariat, in order to facilitate and accelerate the implementation of the JCP. In November 1998, PITF 13 approved a set of Guidelines to be taken into account when implementing the Recommendations for Updating and Strengthening the JCP.

2. Review of HELCOM and PITF

At HELCOM 19, the Commission decided to undertake a review of the work of HELCOM, its subsidiary bodies and PITF, with the objective of identifying constraints to the effective implementation of the Helsinki Convention, and in order to recommend appropriate changes to the institutional framework and/or operations of HELCOM, its subsidiary bodies and PITF in the light of new political, economic and environmental circumstances in the Baltic Sea region.

A report prepared by the Review Steering Group containing the main findings from the undertaken analysis and relevant recommendations for improvement was presented to

HELCOM 20. The high level session at HELCOM 20 adopted several Recommendations of which the following were most relevant to the JCP and PITF:

- “- The Heads of Delegation, taking into account the objectives of the Helsinki Convention, the JCP and other developments in the Baltic Sea Area, as well as the future tasks outlined in this Report, should propose a set of specific priorities which will guide the operation of HELCOM in the short and medium term, and a strategic vision for its future development.
- The PITF should retain its present structure and concentrate on Programme element 3 of the JCP. It should be serviced by staff of the Secretariat.”

Based on these Recommendations, draft proposals were elaborated and finalised by a Joint Meeting of the Heads of Delegations to HELCOM and the Chairmen and the Secretariat of the Helsinki Commission together with the Enlarged HELCOM Review Steering Group in July 1999, and then forwarded to HELCOM EXTRA 99.

In September 1999, HELCOM EXTRA decided on priority areas and the outline of a Working Programme for HELCOM for the years 2000 – 2002, and also established new Subsidiary bodies. The Commission additionally dealt with the relationship between PITF and HELCOM, confirming that PITF would retain its autonomy within the framework of HELCOM, and would include in its daily work and overall responsibility the following elements of the JCP, with the understanding that co-operating observer organisations will continue their supporting efforts:

- element 1 "Policies, laws and regulations"
- element 2 "Institutional strengthening and human resources development"
- element 5 "Applied research"
- element 6 "Public awareness and environmental education".

This consequently meant that PITF would henceforth focus its efforts on element 3 of the JCP "Investment activities" for point and non-point source pollution, and on planning and investment activities under element 4 "Management programmes for coastal lagoons and wetlands", taking into account the decisions by the HELCOM ministerial session in 1998 concerning the updating of the JCP.

Relations with Baltic 21 and other organisations

The Environment Ministers of the Baltic Sea region decided at their informal meeting in Saltsjöbaden in October 1996 to develop an Agenda 21 for the Baltic Sea Region, as requested by the Heads of Governments of the Baltic Sea States in Visby in May 1996.

HELCOM 18 resolved in March 1997 to co-operate closely with the Baltic 21 process, pending the availability of resources. Agriculture, transport and public awareness were the main common issues dealt with by both HELCOM and Baltic 21. HELCOM was involved in the preparation of the Baltic Agenda 21 action programme, and took the lead role together with Sweden regarding the agriculture sector. The sector report on agriculture summarising this work has been published in the Baltic Sea Environmental Proceedings Series (BSEP No. 74).

Additional Baltic 21 activities relate to spatial planning, energy, transboundary water management, waste and chemicals, oil handling in the Baltic, atmospheric deposition and nature conservation, and co-operation on these issues requires action by all HELCOM Committees and HELCOM PITF.

The close co-operation between the Baltic 21 Senior Officials Group (SOG) and the HELCOM PITF was demonstrated by a back-to-back meeting held in December 1997 in Køge, Denmark.

The joint session agreed that:

- The JCP and the Agenda 21 for the Baltic Sea region should be seen as complementary programmes, taking into account their different objectives;
- Agriculture, transport and public awareness are issues that concern both HELCOM and Baltic 21. The importance of continuing close co-operation on agricultural issues was particularly underlined;
- Both programmes should be conducted in close co-operation in order to guarantee the efficient use of limited resources and to avoid any duplication of work.

In 2001 a Joint *ad hoc* Baltic 21/HELCOM Working Group was established with the aim of examining the division of work between Baltic 21 and HELCOM. The group presented its report "Recommendations for co-ordination and complementarity of Baltic 21 and HELCOM policies and activities" to HELCOM 22. After the approval of this report and its recommendations, additional sector-related recommendations were elaborated by the Joint *ad hoc* Working Group.

Of similar interest as Baltic 21 are the complementary activities of the Project Preparation Committee (PPC) and its Secretariat within the EBRD. The PPC is a networking mechanism established in 1993 under the Environment for Europe process. Its main objective is to improve co-ordination and co-operation between international financial institutions, donors and the countries of Central and Eastern Europe and the Newly Independent States in identifying, developing and financing environmental investment projects. Following the Recommendations for Updating and Strengthening of the JCP, it was decided that the resource mobilisation activities of HELCOM PITF should continue and be co-ordinated with the PPC to facilitate the effective and timely matching of domestic resources, loans and grants to support the preparation and implementation of projects on an accelerated basis.

The PPC supports the JCP Programme element "Investment Activities" by organising regional meetings. The Baltic Donors Meeting which was held in October 1998 in Riga, Latvia, was invited to share information and comments with HELCOM PITF and to use HELCOM PITF as a forum for discussion on investment activities in the Baltic Sea region.

Some exchange of information has also been arranged with the Environmental Action Programme for Central and Eastern Europe (EAP TF) under the OECD, whose targets and approach are similar to those within HELCOM. The areas covered by the programme are also partly the same as those under the JCP. Co-operation was deemed to be useful to avoid any overlapping of activities, and to keep all parties informed on ongoing and planned work.

Concerning links to global environmental programmes, the PITF and the UNEP/GPA (Global Programme of Action) have considered items of mutual interest. Subjects on which information should be shared and co-operation is necessary include the global assessment of the marine environment, the development and use of an indicator system for reporting on implementation, the mobilisation of financial resources, and public awareness and environmental education. It has become clear, however, that co-operation in the Baltic Sea region and the implementation of the JCP are advanced compared to similar processes in many other regions on the globe.

Finally, the Northern Dimension Initiative, the Action Plan, the Northern Dimension Environmental Partnership (NDEP) and the newly established Environmental Support Fund also provide a certain overlap of interests with the JCP as regards the financing of environmental projects. However, no direct contacts have as yet been made with these organisations.

In conclusion it must be noted that there are many different actors in this field, both complementing and supplementing each other. Some overlapping activities seem unavoidable, and this calls for the free exchange of information and close co-ordination. So far the JCP/PITF has been relatively passive, and just followed such developments. A more proactive role in this respect might strengthen HELCOM in future.

Regional Workshops

On the advice of HELCOM HOD 2 a Preparatory Group (PG) was established in order to help PITF to reconsider its focus of activities.

The Preparatory Group proposed a series of Regional Workshops. The overall aim of these workshops was to present information and data on the Hot Spots as the basis for a detailed discussion of Hot Spots with a view to future deletion from the List of Hot Spots.

By the end of October 2002, ten Regional Workshops and one bilateral meeting had been conducted, covering all the countries participating in the JCP/PITF. Participants in the workshops included representatives from local, regional and national levels and the so-called "Hot Spot owners". The workshops gave an overview of the environmental situation in general, and the status of Hot Spots in the countries/regions concerned, as well as exchanging information about the needs and possibilities for accelerating the implementation of the JCP towards the deletion of more Hot Spots.

With reference to the conclusions of the round of Regional Workshops, the Preparatory Group presented a report "Evaluation of the PITF Regional Workshops" to PITF 19. The report summarises the "lessons learnt" after the completion of all the Regional Workshops (see Part 2 of this report). Several national Thematic Reports based on these workshops have also been published.

Developments concerning Hot Spots and pollution load reductions

Since the adoption of the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) and the establishment of the HELCOM Programme Implementation Task Force (PITF), investment activities concerning point-source and non-point source pollution have been amongst the most prominent and significant activities. Many investment and remediation projects have been conducted in relation to the identified and listed Hot Spots. These activities have subsequently resulted in the formal deletion of many Hot Spots.

Over the past decade several Hot Spots have been redefined, and in several cases divided into Sub-Hot Spots. These actions have facilitated the management and evaluation of these Hot Spots, as well as the identification of remediation actions needed.

One much debated issue has been the development of Criteria for the Inclusion and Deletion of Hot Spots in the List of Hot Spots. In May 1999, the “Criteria for Inclusion and Deletion of Hot Spots: Procedures and Guidelines for Inclusion and Deletion of Hot Spots” were adopted by PITF 14. This document establishes a replicable mechanism for Hot Spot addition or deletion, and provides a mechanism for setting targets for the planning and implementation of investment activities at the Hot Spots.

1. Number of deleted Hot Spots

Due to the development a total of 149 Hot Spots and Sub-Hot Spots have been designated. Of these 54 had been deleted from the List of Hot Spots by the end of 2002 (Table 7), leaving 95 still to be deleted. A total of 46 of the original 132 Hot Spots have been deleted, with three only partly deleted.

Year of deletion	Hot Spot No.	Number deleted	Cumulative number
1994	2, 3, 4, 5, 11, 12, 13, 126	8	8
1995	114, 116	2	10
1996	81.2, 98.3, 131	3	13
1997	16, 29, 35, 121	4	17
1998	8, 68	2	19
1999	-	-	19
2000	37, 123	2	21
2001	30, 36, 43, 76.1, 80, 105, 111 ^{PL} , 118	8	29
2002	1, 9, 40, 75, 76.2, 77, 78, 79, 81.1, 83.2, 90, 91, 92, 96, 98.1, 99.1, 101, 102.1, 102.2, 102.3, 106, 111 ^{cz} , 115, 117, 120, 130	26	54 Deleted in total

Table 7: Number of deleted Hot Spots/sub-Hot Spots by the end of 2002

In certain cases the political will to work towards the deletion of Hot Spots seems to be missing – maybe reflecting an aim to maintain a high political profile for the Hot Spots and environmental policy at national level. It inevitably takes some time before projects are prepared, with financing put in place and measures implemented, leading to conditions that make proposals for deletion timely. A steady increase in the deletion of Hot Spots can nevertheless be observed. If these trends continue, the chances are good for the deletion of nearly all the remaining Hot Spots before the planned JCP finalisation in 2012.

2. Review of applications for Hot Spot deletion

For the purpose of this report, estimates of pollution load reductions have been made. All the documents forming the basis for the Hot Spot deletions accepted by the PITF have been reviewed, in order to estimate the pollution load reductions obtained through the investment activities implemented at the deleted Hot Spots/Sub-Hot Spots. This means that the reductions obtained at those Hot Spots which have not yet been deleted are not accounted for even if some reductions have taken place. Consequently, the real reductions must be supposed to be larger.

A general observation during the reviews of applications for Hot Spot deletion is that there has been a change from a pollution load approach to a more technology oriented approach.

During the first years of JCP implementation, countries provided data for pollution before and after the remediation, allowing reductions to be easily calculated in most cases. More recently, applications have described in detail the technologies implemented, along with the reductions in concentrations compared to HELCOM Recommendations. Often the overall emission flow or size is not indicated, so it is not possible to estimate the pollution load. In such cases load reductions have been calculated (1991-98) using data from the Annual Report 1999.

3. Pollution load reductions

The validity of the data is in some respects debatable. It can be supposed that the quality of monitoring data has improved during the period, due to improved planning and monitoring methods. In situations where Hot Spots have been divided into Sub-Hot Spots, it can be difficult to verify the relationship between the reported data in the deletion document and the data provided in the Annual Report 1999. Also, in a few cases the load data for the Sub-Hot Spot could not be determined, and consequently no estimates could be made for reductions.

The results of the review are shown in Annex 2, which shows for each deleted Hot Spot the Hot Spot's specifications, information about investments and subsequent deletion, and the load reductions as percentages and as tonnes/year.

The overall estimation of the total pollution load reductions indicates the reductions obtained at the moment of deletion from the Hot Spot List. Subsequently production may have increased or decreased, which may have increased pollution loads in some cases; although in other cases new technology or BAT may have been introduced, leading to further reductions in loads even where production has increased.

The pollution load reductions at individual Hot Spots have been summarised for each "catchment area" on the List of Hot Spots (Annex 3). Also the total reductions obtained for each parameter are shown in Annex 3. Taking into account the uncertainty of the estimations, pollution load reduction totals can be calculated as shown in Table 8.

Parameter	Load reduction (tonnes/year)	Parameter	Load reduction (tonnes/year)
BOD	117,000	Dust	22,200
COD	221,600	Metaliferous dust	40
tot-N	33,400	Fe	7,580
tot-P	5,100	Cr	10
SS	6,400	Zn	9,040
AOX	5,900	Pb	240
NOx	4,900	Cd	60
SOx	8,600	Cu	160
NO2	50	As	10
SO2	4,100	Chlorine	6,870
CO	3,500	Sulf.acid	19,880
S	1,400	Fluoride	10

Table 8: Pollution load reductions obtained from deleted Hot Spots (Nov. 2002)

The pollution loads (waste water discharges/air emissions) from reported Hot Spots in 1991 (Annual Report 1999) and the estimated load reductions obtained by the deleted Hot Spots are shown in Tables 9 and 10.

Year	BOD	COD	tot-N	tot-P	AOX	NOx	SOx
1991	564,200	874,700	150,800	18,700	6,600	131,300	338,700

Table 9: Pollution load (t/year) in 1991

Year	BOD	COD	tot-N	tot-P	AOX	NOx	SOx
2002	117,000	221,600	33,400	5,100	5,900	4,900	8,600

Table 10: Pollution load reductions (t/year) obtained from deleted Hot Spots (Nov. 2002)

The 1991 load must be considered as the “original” (reported) load when the JCP was initiated. It can be seen that the deleted Hot Spots (at the time of deletion) have contributed to a 21% reduction of the BOD load, 25 % of the COD load, 22 % of the tot-N load, 27 % of the tot-P load, 89% of the AOX load, and only 4% and 3% of the NOx and SOx loads, respectively.

These percentages do not correspond to the percentages mentioned in the Annual Report 1999, which calculated reductions at all 132 Hot Spots, including Hot Spots not yet deleted. Moreover, this data was not reviewed by the LAND/PITF meetings.

4. Investments

The investments made at the Hot Spots are shown in Annex 2. There seems to have been a change in the quality of the data provided when the Contracting Parties apply for deletion. In recent years, less information has been provided regarding the investments made. The total sum of all the investments reported to PITF amounts to about 1,114 million Euros. This must be considered as an absolute minimum, because information is missing from 20 Hot Spots.

Conclusions

Since the establishment and the first meeting of the JCP Programme Implementation Task Force in Finland in November 1992, the HELCOM PITF parties have met 19 times. The frequency of meetings has been reduced to one meeting per year since 2000 following the transferral of some of the original JCP elements to other HELCOM subsidiary bodies.

The Minutes of the PITF Meetings give a comprehensive record of all activities and documents considered during the meetings. The Information documents provided for the meetings also describe other activities of relevance to the JCP, as well as events conducted in other forums.

The implementation of the JCP has been going on for ten years, and we are half-way through the implementation period. Major progress can be noted in many areas, as has been described above.

This progress is most clearly reflected by:

- decreasing discharges and emissions from Hot Spots
- the increasing number of Hot Spots deleted from the list
- the initiation of additional actions which will result in further reductions in pollution, such as the implementation of Annex III to the Convention (Agriculture), and the development of Codes of Good Agricultural Practice.

This progress has been made possible by the high level of general support for JCP implementation from all PITF Members and Observers. However, it must be noted that during the last few years a lack of interest in the work of HELCOM PITF has become increasingly evident.

One reason for this may be the latest review of the HELCOM structure, and the consequent decision by HELCOM EXTRA 99 to include in HELCOM's daily work and overall responsibility four of the main Programme elements of the JCP (element 1: "Policies, laws and regulations"; element 2: "Institutional strengthening and human resources development"; element 5: "Applied research"; and element 6: "Public awareness and environmental education"). This has meant that the PITF now only deals with the specific investment issues. This may have been an unfortunate decision, because these other issues affect many sectors and have wide-ranging importance. Following their transfer to the direct responsibility of subsidiary bodies of HELCOM, these issues have more or less disappeared from many agendas, because nobody feels particularly responsible for them.

The question of investments at Hot Spots and their deletion still creates major public interest, but such investments are also being dealt with in several other forums. The EU accession countries have for some years greatly focused on striving to conform to EU requirements and involvement in support programmes run by the EU, while other international and bilateral programmes also play a major role in individual national investment programmes. This has created the impression that the development takes place outside the HELCOM PITF, and that PITF merely registers the results. One mistake might have been that PITF has not been able to establish itself as the major regional player or even as the main co-ordinator in the Baltic Sea region, who other programmes and activities would refer to in order to link up and supplement their ongoing activities.

On the other hand, the JCP inevitably had to adjust to the changing political, economic and environmental conditions in the countries concerned, and this has necessitated the updating of the role and working methods of HELCOM PITF. In 2002, a Working Group on JCP Implementation Monitoring and Facilitation (JIMF) was established, and a proposal for the future continuation of the JCP will be presented for decision at the Ministerial HELCOM Meeting in June 2003.

Annex 1

List of JCP Hot Spots by November 2002

List of JCP Hot Spots in the Baltic Sea catchment area

(the shaded lines indicate the Hot Spots deleted from the list as per 20 November 2002)

Key	Priority Hot Spots	Location	Country	Site name	Site type
Bothnian Bay					
1		Bothnian Bay	Sweden	Rönnskärsverken	Industry (Metal Smelter)
2		Bothnian Bay	Finland	Metsä-Botnia Oy Kemi	Industry (Pulp & Paper)
Bothnian Sea					
3		Bothnian Sea	Sweden	Husum Kraft Mill (1)	Industry (Pulp & Paper)
4		Bothnian Sea	Sweden	Östrand (1)	Industry (Pulp & Paper)
5		Bothnian Sea	Sweden	Vallvik (1)	Industry (Pulp & Paper)
6		Dalälven River	Sweden	Dalälven	Mining Waste
7		Bothnian Sea	Finland	Outokumpu Group Harjavalta	Industry (Metal Smelter)
8		Bothnian Sea	Finland	Kemira Oy Vuorikemia	Industry (Titanium oxide)
Archipelago and Åland Seas					
9		Arch & Åland Seas	Finland	Fish Farming	Fish Farming
10		Archipelago Sea	Finland	Agriculture (2)	Agricultural Runoff
Neva River Basin / Lake Ladoga					
11		Lake Saimaa	Finland	YPT Joutseno	Industry (Pulp & Paper)
12		Lake Saimaa	Finland	Kaukas Lappeenranta	Industry (Pulp & Paper)
13		Lake Saimaa	Finland	E-G Kaukopää	Industry (Pulp & Paper)
14		Lake Ladoga	Russia	Syasstroi	Industry (Pulp & Paper)
15		Lake Ladoga	Russia	Volkhov	Industry (Aluminum)
Gulf of Finland					
16		Gulf of Finland	Finland	Sunila Oy - Kotka	Industry (Pulp & Paper)
17		Gulf of Finland	Finland	Helsinki Region	Municipal
18	X	Gulf of Finland	Russia	St. Petersburg	Connection Sewers
19	X	Gulf of Finland	Russia	St. Petersburg (Urban) (3)	Municipal & Industrial
20	X	Gulf of Finland	Russia	St. Petersburg (Suburban)	Municipal & Industrial
21		Gulf of Finland	Russia	St. Petersburg	Phosphorous Removal
22		Gulf of Finland	Russia	St. Petersburg	Industry (Metal Plating)
23		Gulf of Finland	Russia	St. Petersburg	Hazardous Waste

Key	Priority Hot Spots	Location	Country	Site name	Site type
24	X	Gulf of Finland	Russia	St. Petersburg Region	Large Livestock Farms
25	X	Gulf of Finland	Estonia	Narva	Power Plants (Oil Shale)
26		Gulf of Finland	Estonia	Kohtla Järve	Area Municipal & Industrial
27		Gulf of Finland	Estonia	Kehra	Industry (Pulp & Paper)
28	X	Gulf of Finland	Estonia	Tallinn	Municipal & Industrial
29		Gulf of Finland	Estonia	Tallinn	Industry (Pulp & Paper)
30		Gulf of Finland	Estonia	Gulf of Finland	Agricultural Runoff Programme
Western Estonian Coast					
31		Estonian Coast	Estonia	Haapsalu	Municipal & Industrial
32	X	Estonian Coast	Estonia	Matsalu Bay	Management Programme
Gulf of Riga / Daugava River Basin					
33	X	Gulf of Riga	Estonia	Pärnu	Municipal & Industrial
34		Gulf of Riga	Estonia	Paide	Municipal & Industrial
35		Gulf of Riga	Estonia	Vohma Meat Combine	Industry
36		Gulf of Riga	Estonia	Gulf of Riga	Agricultural Runoff Programme
37	X	Gulf of Riga	Estonia/La	Gulf of Riga Mgt	Management Programme
38	X	Gulf of Riga	Latvia	Sloka	Industry (Pulp & Paper)
39	X	Gulf of Riga	Latvia	Latbiofarm	Industry (Pharmaceutical)
40	X	Gulf of Riga	Latvia	Agriculture / Livestock	Agricultural Runoff Programme
41	X	Gulf of Riga	Lithuania	Siauliai	Municipal & Industrial
42	X	Daugava RB	Latvia	Riga (WWTP Phase II)	Municipal & Industrial
43		Daugava RB	Latvia	VEF Plant (Riga)	Industry (Metals)
44		Daugava RB	Latvia	RER Plant (Riga)	Industry (Metals)
45		Daugava RB	Latvia	Riga	Industry (Various)
46	X	Daugava RB	Latvia	Daugavpils	Municipal & Industrial
47		Daugava RB	Belarus	Vitebsk	Municipal & Industrial
Latvian Coast					
48	X	Latvian Coast	Latvia	Liepaja (3)	Municipal & Industrial
Nemunas River Basin					
49	X	Nemunas RB	Russia	Sovetsk	Industry (Pulp & Paper)
50	X	Nemunas RB	Russia	Neman	Industry (Pulp & Paper)

Key	Priority Hot Spots	Location	Country	Site name	Site type
51	X	Nemunas RB	Lithuania	Kaunas	Municipal & Industrial
52		Nemunas RB	Lithuania	Amalg Azotaz	Industry (Fertilizer)
53		Nemunas RB	Lithuania	Kedainiai	Municipal & Industrial
54		Nemunas RB	Lithuania	Kedainiai	Industry (Chemicals)
55		Nemunas RB	Lithuania	Panevezys	Municipal & Industrial
56		Nemunas RB	Lithuania	Panevezys	Industry (Food)
57		Nemunas RB	Lithuania	Marijampole	Municipal & Industrial
58		Nemunas RB	Lithuania	Alytus	Municipal & Industrial
59	X	Nemunas RB	Lithuania	Vilnius / Grigiskes	Municipal & Industrial
60	X	Nevezis RB	Lithuania	Agriculture / Livestock	Agricultural Runoff Programme
61		Nemunas RB	Belarus	Grodno	Municipal & Industrial
Lithuanian Coast					
62		Lith. Coast	Lithuania	Mazeikiai	Oil Refinery / Marine Terminal
63	X	Lith. Coast	Lithuania	Klaipeda	Municipal & Industrial
64		Lith. Coast	Lithuania	Cardboard Factory	Industry (Paper)
65		Lith. Coast	Lithuania	Palanga	Municipal
Lithuanian / Kaliningrad Coast					
66	X	Lith/Kal Coast	Lith/Russia	Kursiu Lagoon	Management Programme
Kaliningrad					
67	X	Kaliningrad	Russia	Kaliningrad	Municipal & Industrial
68		Kaliningrad	Russia	Pulp & Paper No 1	Industry (Pulp & Paper)
69		Kaliningrad	Russia	Pulp & Paper No 2 (4)	Industry (Pulp & Paper)
70		Kaliningrad	Russia	Kaliningrad	Hazardous Waste
71		Kaliningrad	Russia	Oil Bunkering Station	Industry
72		Kaliningrad	Russia	Agriculture / Livestock	Agricultural Runoff Programme
Kaliningrad / Polish Coast					
73	X	Kal/Pol Coast	Russia/Pol	Vistula Lagoon	Management Programme
Vistula River Basin / Baltic Coast of Poland					
74	X	Baltic Coast	Poland	Koszalin - Jamno WWTP	Municipal & Industrial
75	X	Baltic Coast	Poland	Gdynia - Debogorze WWTP	Municipal & Industrial
76.1		Baltic Coast	Poland	Gdansk - Wschod	Municipal

<i>Key</i>	<i>Priority Hot Spots</i>	<i>Location</i>	<i>Country</i>	<i>Site name</i>	<i>Site type</i>
76.2	X	Baltic Coast	Poland	Gdansk Refinery	Industry (Oil refinery)
77	X	Vistula	Poland	Frantschach Swiecie	Industry (Pulp & Paper)
78	X	Vistula	Poland	Bydgoszcz - Fordon WWTP	Municipal & Industrial
79		Vistula	Poland	Bydgoszcz - Kapusciska	Industry (Chemical)
80	X	Vistula	Poland	Torun	Municipal & Industrial
81.1	X	Vistula	Poland	Wloclawek -Anwil Plant	Industry (Chemical)
81.2	X	Vistula	Poland	Wloclawek	Industry (Pulp & Paper)
82		Vistula	Poland	Warsaw - Czajka WWTP	Municipal & Industrial
83.1	X	Vistula	Poland	Warsaw - Poludnie WWTP	Municipal & Industrial
83.2	X	Vistula	Poland	Warsaw - Siekierki Plant	Industry (Power plant)
84		Vistula	Poland	Warsaw - Pancierz WWTP (wastewater will be connected to Czajka WWTP)	Municipal & Industrial
85		Vistula	Poland	Lublin - Hajdow WWTP	Municipal & Industrial
86	X	Vistula	Poland	Krakow - Plaszow WWTP	Municipal & Industrial
87.1	X	Vistula	Poland	Krakow - Kujawy WWTP	Municipal & Industrial
87.2	X	Vistula	Poland	Krakow - Tadeusz Sendzimir Works	Industry (Steel)
88.1	X	Vistula / Odra	Poland	Katowice -Bytom/ Bytom Municipal Enterprise	Municipal & Industrial
88.2	X	Vistula / Odra	Poland	Katowice -Gliwice/ Waterworks & Sewerage Enterprise	Municipal & Industrial
88.3	X	Vistula / Odra	Poland	Katowice - Katowice, Myslowice,Siemianowice/Regional Enterprise of Waterworks and Sewerage	Municipal & Industrial
88.4	X	Vistula / Odra	Poland	Katowice - Tychy/ Regional Centre of Water and Wastewater Management	Municipal & Industrial
88.5	X	Vistula / Odra	Poland	Katowice Area - Duo-Stal in Bytom	Industry (Metallurgical plant)
88.6	X	Vistula	Poland	Katowice Area - Katowice Steel Plant in Dabrowa Gornicza	Industry (Steel plant)
88.7	X	Vistula	Poland	Katowice Area - Czechowice Refinery in Czechowice-Dziedzice	Industry (Oil refinery)

88.8	X	Vistula / Odra	Poland	Katowice Area - Przyjazn Coking Plant in Dabrowa Gornicza	Industry (Coking plant)
89		Vistula	Poland	Jaworzno Organika Azot Plant	Industry (Chemical)
90		Vistula	Poland	Zgierz - Boruta Dyestuffs	Industry (Chemical)
91		Vistula	Poland	Oswiecim - Dwory Plant	Industry (Chemical)
92		Vistula	Poland	Bukowno -Boleslaw Works	Industry (Metals)
93		Vistula	Belarus	Brest	Municipal & Industrial
94	X	Vistula	Ukraine	Lvov	Municipal & Industrial
95	X	Vistula	Poland	Agriculture / Livestock	Agricultural Runoff Programme
96		Vistula	Poland	Upper Basin (7)	Salt Control
Oder-Odra River Basin					
97.1	X	Oder / Odra	Poland	Szczecin -Pomorzany WWTP	Municipal & Industrial
97.2	X	Baltic coast	Poland	Szczecin - Zdroje WWTP	Municipal & Industrial
98.1	X	Oder / Odra	Poland	Szczecin - Police Plant	Industry (Chemical)
98.2	X	Baltic coast	Poland	Szczecin - Skolwin Mill	Industry (Pulp & Paper)
98.3	X	Oder / Odra	Poland	Szczecin	Industry (Fish processing)
99.1		Oder / Odra	Poland	Poznan - Centralna WWTP	Municipal & Industrial
99.2		Oder / Odra	Poland	Poznan - Left River Bank WWTP	Municipal & Industrial
100	X	Oder / Odra	Poland	Lodz WWTP	Municipal & Industrial
101		Oder / Odra	Poland	Zielona Gora WWTP	Municipal & Industrial
102.1	X	Oder / Odra	Poland	Prochowickie Poultry proc. plants	Industry (Food)
102.2	X	Oder / Odra	Poland	KGHM "Polska Miedz" Copper works "Glogow" in Zukowice	Industry (Heavy metals)
102.3	X	Oder / Odra	Poland	KGHM "Polska Miedz" Copper works "Legnica" in Legnica	Industry (Heavy metals)
103		Oder / Odra	Poland	Wroclaw WWTP	Municipal & Industrial
104		Oder / Odra	Poland	Wroclaw - Brzeg Dolny, Rokita Plant	Industry (Chemical)
105		Oder / Odra	Poland	Ubozcz - Luban	Industry (Fertilizer)
106		Oder / Odra	Poland	Boleslawiec -Wizow Plant	Industry (Fertilizer)
107	Refer to 88	Oder / Odra	Poland	Katowice-West	Municipal & Industrial

108	Refer to 88	Oder / Odra	Poland	Katowice-West	Industry (Coke, Steel, Fertilizer)
109	X	Oder / Odra	CSFR	Ostrava	Municipal & Industrial
110	X	Oder / Odra	CSFR	Ostrava Area	Industry (Chem, P&P, etc.)
111		Oder / Odra	CSFR/Poland	Upper Basin (7)	Salt Control
112	X	Oder / Odra	Poland	Agriculture / Livestock	Agricultural Runoff Programme
113	X	Oder / Odra	Poland/Ger	Odra Lagoon mgt	Management Programme
Arkona Basin					
114		Arkona Basin	Germany	Greifswald	Municipal & Industrial
115		Arkona Basin	Germany	Neubrandenburg	Municipal & Industrial
116		Arkona Basin	Germany	Stralsund	Municipal & Industrial
117		Arkona Basin	Germany	Stavenhagen - Malchin	Municipal & Industrial
118		Arkona Basin	Germany	Agriculture	Agricultural Runoff Programme
Belt Sea					
119		Belt Sea	Germany	Lübeck	Municipal & Industrial
120		Belt Sea	Germany	Wismar	Municipal & Industrial
121		Belt Sea	Germany	Rostock	Municipal & Industrial
122		Belt Sea	Denmark	Agriculture (8)	Agricultural Runoff Programme
The Sound					
123		The Sound	Denmark	Copenhagen	Municipal
124		The Sound	Denmark	Agriculture (8)	Agricultural Runoff Programme
125		The Sound	Sweden	Agriculture	Agricultural Runoff Programme
Kattegat					
126		Göta älv River	Sweden	Skoghall	Industry (Pulp & Paper)
127		Kattegat	Sweden	Göteborg	Municipal
128		Kattegat	Sweden	Agriculture	Agricultural Runoff Programme
129		Kattegat	Denmark	Agriculture (8)	Agricultural Runoff Programme

Swedish Coast					
130		Swedish Coast	Sweden	Stockholm	Municipal
Bornholm Basin					
131		Bornholm Basin	Sweden	Nymölla	Industry (Pulp & Paper)
132		Bornholm Basin	Sweden	Agriculture	Agricultural Runoff Programme

Annex 2

***Pollution load reductions at deleted JCP Hot Spots
(November 2002)***

Pollution load reductions at deleted JCP Hot Spots (November 2002)

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
1	SE	Bothnian Bay	Rönnskärverken	Industry (Metal smelter)	High emissions of dust and heavy metals	2002 PITF 19	1992-2001: metals 30 %, dust 70%	metals: 2.3 t dust: 143 t	No information
2	FI	Bothnian Bay	Metsä-Botnia Oy Kemi	Industry (Pulp & Paper)	High discharges of organic substances and nutrients	1994 PITF 5	1991-93: BOD ₇ 39% COD 28% tot-N slight increase tot-P 27% AOX 77%	BOD ₇ : 2,749 t COD: 7,902 t tot-N: 3 t (increase) tot-P: 6 t AOX: 244 t	67.7 M FIM (11.3 M Euro)
3	SE	Bothnian Sea	Husum Kraft Mill	Industry (Pulp & Paper)	High discharges, particularly AOX	1994 PITF 5	1987-93: AOX 85% BOD 30% COD 45% tot-N 71% increase tot-P 45% NOx 30% increase S 64%	AOX: 1,450 t BOD: 3,700 t COD: 22,000 t tot-N: 50 t (increase) tot-P: 45 t NOx: 300 t (increase) S: 900 t	13 M USD (13 M Euro)
4	SE	Bothnian Sea	Östrand	Industry (Pulp & Paper)	High discharges, particularly AOX	1994 PITF 5	1987-93: AOX 86% BOD 10% COD 18% tot-N 25% increase tot-P 10% increase NOx 75% S 19% increase	AOX: 1,200 t BOD: 700 t COD: 4,700 t tot-N: 20 t (increase) tot-P: 2 t (increase) Nox: 300 t S 48 t (increase)	5.5 M USD (5.5 M Euro)
5	SE	Bothnian Sea	Vallvik	Industry (Pulp & Paper)	High discharges, particularly AOX	1994 PITF 5	1987-93: AOX 90% BOD 10% increase COD 19% tot-N 40% increase tot-P 0% NOx 28% increase S 40%	AOX: 630 t BOD: 300 t (increase) COD: 2,300 t tot-N: 40 t (increase) tot-P: 0 t Nox: 70 t (increase) S: 100 t	Only minor investment costs

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
8	FI	Bothnian Sea	Kemira Oy Vuorikemia	Industry (Titanium oxide)	High discharges of acidic waste water containing metals	1998 PITF 12	1992-97: tot-N 2% tot-P 60% Fe 81% Cr 76% Zn 86% Pb 60% Sulphuric Acid 70%	tot-N: 0.5 t tot-P: 3.3 t Fe: 5,804 t Cr: 11.4 t Zn: 42.1 t Pb: 0.6 t Sulphuric Acid: 19,738 t	125 M FIM (21 M Euro)
9	FI	Archipelago and Åland Sea	Fish farming	Fish farming	Discharges of nutrients. Eutrophication.	2002 PITF 19	1991-2001: N 48% P 41%	N: 61.8 t P: 362 t	No information
11	FI	Lake Saimaa	YPT Joutseno	Industry (Pulp & Paper)	High discharges of organic substances	1994 PITF 5	1991-93: BOD ₇ 21% COD 17% tot-N 17% tot-P 0% AOX 72%	BOD ₇ : 348 t COD: 3,277 t tot-N: 17 t tot-P: 0 t AOX: 483 t	6 M FIM (1 M Euro)
12	FI	Lake Saimaa	Kaukas Lappeenranta	Industry (Pulp & Paper)	High discharges of organic substances and nutrients	1994 PITF 5	1991-93: BOD ₇ 88% COD 61% tot-N 68% tot-P 71% AOX 81%	BOD ₇ : 4,598 t COD: 22,119 t tot-N: 316 t tot-P: 29 t AOX: 549 t	207 M FIM (34.5 M Euro)
13	FI	Lake Saimaa	Enso-Gutzeit Kaukopää	Industry (Pulp & Paper)	High discharges of organic substances and nutrients	1994 PITF 5	1991-93: BOD ₇ 90% COD 66% tot-N 23% tot-P 63% AOX 63%	BOD ₇ : 14,060 t COD: 37,480 t tot-N: 64 t tot-P: 33 t AOX: 510 t	185 M FIM (30.8 M Euro)
16	FI	Gulf of Finland	Sunila Oy, Kotka	Industry (Pulp & Paper)	High discharges of organic substances (COD and AOX)	1997 PITF 10	1991-95: BOD ₇ 65% COD 47% tot-N 43% increase tot-P 25% increase AOX 68%	BOD ₇ : 3,351 t COD: 10,649 t tot-N: 38 t (increase) tot-P: 3.4 t (increase)	60 M FIM (10 M Euro)
29	EE	Gulf of Finland	Tallinn	Industry (Pulp & Paper)	Discharges of organic substances	1997 PITF 10	Mill closed	No data	-

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
30	EE	Gulf of Finland	Gulf of Finland	Agricultural Runoff Programme	Nutrient pollution	2001 PITF 18	1988-95: N 58% P 31% (1987- 2000): Number of animal units/ha reduced by 63%. Arable land not in use: 34%. Mineral fertiliser use reduced by 90%. Pesticide use reduced by 95%	No load data	(59 M EEK)
35	EE	Gulf of Riga	Vohma Meat Combine	Industry	Discharges of nutrients	1997 PITF 10	Factory closed	1991: BOD5: 140 t tot-N: 15 t tot-P: 4 t NO2: 5.7 t SOx: 127 t	-
36	EE	Gulf of Riga	Gulf of Riga	Agricultural Runoff Programme	Nutrients pollution	2001 PITF 18	ref. HS No. 30	No load data	ref. HS No. 30
37	EE LV	Gulf of Riga	Gulf of Riga Mgt	Management Programme	Accelerating eutrophication and high heavy metal loads	2000 PITF 17	1991/92-99: <u>point sources:</u> BOD7 85% tot-N 66% tot-P 37% <u>diffuse sources:</u> Livestock density and mineral fertiliser consumption reduced	BOD7: 35,398 t tot-N: 4,847 t tot-P: 321 t	Estonia: 10 M Euro Latvia: 77 M Euro (Waste water management)
40	LV	Gulf of Riga	Agriculture/Livestock	Agricultural Runoff Programme	Nutrient pollution	2002 PITF 19	1990-2001: Number of livestock decreased almost 70% N and P fertilizers reduced 70-80%	Load reduction to the Baltic Sea (late 80s-2000) tot-N: 18,895 t (56%) tot-P: 831 t (82%)	-

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
43	LV	Daugava RB	VEF Plant (Riga)	Industry (Metals)	Heavy metals in industrial waste water	2001 (31 Jan.)	1991-98: Fe 86% Cu 86% Ni 99% Zn 68%	Fe: 1,776 t Cu: 0.5 t Ni: 0.2 t Zn: 0.02 t	- (installation almost closed down)
68	RU	Kaliningrad	Pulp & Paper No. 1	Industry (Pulp & Paper)	High discharges of organic substances	1998 PITF 12	Mill closed	1991: BOD5: 5,700 t tot-N: 0.2 t tot-P: 0.002 t NO2: 114.5 t SOx: 1,651 t	-
75	PL	Baltic Coast	Gdynia – Debogorze WWTP	Municipal & Industrial	Discharges of BOD, COD, nitrogen and phosphorus	2002 PITF 18 LAND 5	1991-98: BOD5 94% COD 92 % tot-N 63 % tot-P 70 %	BOD5 4,778 t COD 11,355 t tot-N 757 t tot-P 113 t	22.6 M Euro
76.1	PL	Baltic Coast	Gdansk-Wschod WWTP	Municipal	Discharges of BOD, COD, nitrogen and phosphorus	2001 (31 Jan.)	1991-98: BOD5 39% COD 36% tot-N 11% tot-P 78%	BOD5: 2,790 t COD: 4,318 t tot-N: 199 t tot-P: 365 t	69.7 M Euro
76.2	PL	Vistula	Gdansk Refinery	Industry (oil refinery)		2002 PITF 19			No information
77	PL	Vistula	Frantschach Swiecie	Industry (Pulp & Paper)	High discharges of BOD, nutrients and organic substances	2002 PITF 18 LAND 5	1991-98: BOD5 64% COD 68% NOx 49% SOx 28%	BOD5 4,482 t COD 16,076 t NOx 1,608 t SOx 1,302 t	59 M Euro (1994-2000)
78	PL	Vistula	Bydgoszcz - Fordon WWTP	Municipal & Industrial	Discharges of BOD, COD, nitrogen and phosphorus	2002 PITF 18 LAND 5	1991-98: BOD5 45% COD 47%	1991-98: BOD5 2,550 t COD 5,405 t	18 M Euro
79	PL	Vistula	Bydgoszcz - Kapusciska WWTP	Industry (Chemical)		2002 PITF 18 LAND 5	1991-2000: BOD5 93% COD 72 % tot-N 54% tot-P 44%	BOD5 3,906 t COD 7,602 t tot-N 502 t tot-P 45 t	43.5 M Euro
80	PL	Vistula	Torun WWTP	Municipal & Industrial	Discharges of BOD, COD, nitrogen and phosphorus	2001 (31 Jan.)	1991-98: BOD5 97% COD 95%	BOD5: 5,111 t COD: 9,416 t	26.5 M Euro

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
81.1	PL	Vistula	Wloclawek - Anwil Plant	Industry (Chemical)		2002 PITF 19	1991-98: (HS no. 81) BOD5 92% COD 92 % tot-N 64% tot-P 100% NO2 21% increase SOx 4%	(HS no. 81) BOD5: 275 t COD: 2,841 t tot-N: 185 t tot-P: 49 t NO2: 457 t (increase) SOx: 241 t	10 M Euro (2000-2001)
81.2	PL	Vistula	Wloclawek	Industry (Pulp & Paper)	High discharges of BOD, COD, SS, SOx, NOx	1996 PITF 9	Mill closed	BOD: 757 t COD: 1,680 t SS: 451 t SOx: 1,287 t NOx: 297 t	-
83.2	PL	Vistula	Warsaw - Siekierki Plant	Industry (Heat & Power plant)	Air pollution	2002 PITF 19	1990-2002: NOx 28% SO2 25% increase Dust 90%	NOx: 2,500 t SO2: 400 t (increase) Dust: 17,900 t	No information
90	PL	Vistula	Zgierz –Boruta Dyestuffs	Industry (Chemical)	High emissions of hazardous organic substances	2002 PITF 18 LAND 5	1991-98: COD 65% NO2 24% SOx 16%	COD: 1,110 t NO2: 287 t Sox: 303 t	22 M Euro (Municipal WWTP)
91	PL	Vistula	Oswiecim – Dwory Plant	Industry (Chemical)	High emissions of Hg contaminated sludge, organic compounds, hydrocarbons and AOX	2002 PITF 18 LAND 5	1991-2000: BOD5 79% COD 90 % tot-N 1% tot-P 357% increase NOx 37% SOx 73% Dust 96% Chlorine 98%	BOD5 :142 t COD: 3167 t tot-N: 1 t tot-P: 7.5 t (increase) NOx :636 t SOx :3,686 t Dust: 14,163 t Chlorine: 6,867 t	230 M PLN (about 60 M Euro)

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
92	PL	Vistula	Bukowno – Boleslaw Works	Industry (Metals)	Heavy air pollution and metal emissions to water	2002 PITF 18 LAND 5	1990-2000: <u>Air:</u> Metaliferous dust 97% Other dust 99.9% CO 99.9% SO2 92% H2SO4 74% <u>Water:</u> BOD5 63% COD 22% SS 80% Zn 98% Pb 95% Cd 89%	<u>Air:</u> Metaliferous dust: 39 t Other dust : 68 t CO: 3,536 t SO2: 4,539 t H2SO4: 139 t <u>Water:</u> BOD5: 563 t COD: 491 t SS: 5,910 t Zn: 8,995 t Pb: 129 t Cd: 60 t	50 M PLN (about 13 M Euro)
96	PL	Vistula	Upper Basin (7)	Salt Control	High discharges of saline water from coal mines containing heavy metals	2002 PITF 18 LAND 5	No load data	-	-
98.1	PL	Oder/Odra	Szczecin – Police Plant	Industry (Chemical)		2002 PITF 19	No load data	-	14.4 M Euro (1998-2001)
98.3	PL	Oder/odra	Szczecin -	Industry (Fish processing)	High discharges of BOD, COD, tot-N, tot-P	1996 PITF 9	Factory closed	BOD: 80 t COD: 112 t tot-N: 1.3 t tot-P: 24.4 t	-
99.1	PL	Oder/Odra	Poznan – Centralna WWTP	Municipal & Industrial	Discharges of BOD, COD, nitrogen and phosphorus	2002 PITF 18 LAND 5	No load data	-	102 M Euro
101	PL	Oder/Odra	Zielona Gora WWTP	Municipal & Industrial	Discharges of BOD, COD, nitrogen and phosphorus	2002 PITF 19	1991-98: BOD5 63% COD 63% tot-N 69% tot-P 67%	BOD5 : 1,485 t COD: 3,172 t tot-N: 621 t tot-P: 73 t	No information
102.1	PL	Oder/Odra	Prochowickie Poultry processing plants	Industry (Food)		2002 PITF 19	1990-2001: BOD5 98.8%	BOD5 : 143 t	No investment (production reduced)

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
102.2	PL	Oder/Odra	KGHM "Polska Miedz" Copper works "Glogow" in Zukowice	Industry (Heavy metals)	High emissions of dust and heavy metals	2002 PITF 19	1990-2001: Dust 94% Cu 95% Pb 95% As 93% Cd 53%	Dust: 1,892 t Cu: 124 t Pb: 96.9 t As: 5.2 t Cd: 0.2 t	1991 - 2000: More than 125 M Euro
102.3	PL	Oder/Odra	KGHM "Polska Miedz" Copper works "Legnica" in Legnica	Industry (Heavy metals)	High emissions of dust and heavy metals	2002 PITF 19	1990-2001: Dust 99.9% Cu 99% Pb 99% As 99.9% Cd 99%	Dust 6,062 t Cu 32 t Pb 17.5 t As 4.9 t Cd 0.06 t	
105	PL	Oder/Odra	Ubozcz-Luban	Industry (Fertiliser)	BOD, nutrients and heavy metals	2001 PITF 18	1991-98: BOD5 100% COD 100%	BOD5 0.3 t COD 3 t	No investment (production reduced)
106	PL	Oder/Odra	Boleslawiec -Wizow Plant	Industry (Fertiliser)	High discharges of phosphorus, fluorides, SS, dust etc.	2002 PITF 19	Since 1987: Phosphate, fluoride, sulphates and SS in waste water discharges 99.9% Fluoride emissions to air 89%	Water: 1991-2001 P: 409 t Air: 1991-93 Fluoride: 7.1 t	No information
111	CZ PL	Oder/Odra	Upper Basin (7)	Salt Control	High discharges of saline water from coal mines containing heavy metals	2002 PITF 18 LAND 5 PITF 19	CZ: the discharge has been reduced by 30% PL: -	-	No information
114	DE	Arkona Basin	Greifswald	Municipal & Industrial	High discharges of nutrients	1995 PITF 7	1987-95: BOD ₅ 98% COD 93% tot-N 78% tot-P 93%	BOD ₅ : 971 t COD: 2,190 t tot-N: 285 t tot-P: 41 t	40.7 M DEM (20 M Euro)
115	DE	Arkona Basin	Neubrandenburg	Municipal & Industrial	Polluted waste water	2002 PITF 19	1987-2002: BOD ₅ 94% COD 91% tot-N 92% tot-P 97%	BOD ₅ : 330 t COD: 1,368 t tot-N: 369 t tot-P: 39 t	26.4 M Euro

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
116	DE	Arkona Basin	Stralsund	Municipal & Industrial	High discharges of nutrients	1995 PITF 7	1987-95: BOD ₅ 97% COD 90% tot-N 75% tot-P 94%	BOD ₅ : 1,959 t COD: 3,041 t tot-N: 365 t tot-P: 95.5 t	75 M DEM (37.5 M Euro)
117	DE	Arkona Basin	Stavenhagen-Malchin	Municipal & Industrial	Polluted waste water	2002 PITF 19	1987-2002: BOD ₅ 82% COD 65% tot-N 3% tot-P 93%	BOD ₅ : 41 t COD: 98 t tot-N: 1 t tot-P: 13.4 t	27 M Euro
118	DE	Arkona Basin	Agriculture	Agricultural Runoff Programme	Intensive livestock farming	2001 (31 Jan.)	1989-99: Number of animal units reduced by 64%	No load data	-
120	DE	Belt Sea	Wismar	Municipal & Industrial	Polluted waste water	2002 PITF 19	1990-2002: BOD ₅ 93% COD 75% tot-N 89 tot-P 91%	BOD ₅ : 258 t COD: 530 t tot-N: 268 t tot-P: 30.5 t	31.6 M Euro
121	DE	Belt Sea	Rostock	Municipal & Industrial	High discharges of waste water	1997 PITF 10	1987-96: BOD ₅ 98% COD 92% tot-N 86% (inorg.) tot-P 96%	BOD ₅ : 7,966 t COD: 9,984 t tot-N: 1,351 t tot-P: 292 t	170 M DEM (85 M Euro)
123	DK	The Sound	Copenhagen - Lynetten	Municipal	Discharges of BOD, COD, nitrogen and phosphorus	2000 PITF 16	1996-97: (re-calculated) BOD ₅ 91% COD 57% tot-N 80% tot-P 76%	BOD ₅ : 1,153 t COD: 3,235 t tot-N: 1,284 t tot-P: 230 t	No information
126	SE	Göta Älv River	Skoghall	Industry (Pulp & Paper)	High discharges of mainly AOX	1994 PITF 5	1987-93: AOX 98%, BOD 17%, COD 25%, tot-N 59%, tot-P 38% Nox 25 % increase S 52%	AOX: 800 t BOD: 1,200 t COD: 6,000 t tot-N: 320 t tot-P: 6 t NOx: 110 t (increase) S: 170 t	9.5 M USD (9.5 M Euro)

Hot Spot No.	Country	Location	Site name	Site type	Reason for being a Hot Spot	Year of deletion	Load Reduction achieved (percentages) *	Load Reduction achieved (amounts/year) *	Investments (until deletion)
130	SE	Swedish Coast	Stockholm	Municipal	Discharges of BOD, COD, nitrogen and phosphorus	2002 PITF 19	1991-2001: **) BOD7 61% tot-N 54 % tot-P 34%	BOD7 975 t tot-N 2583 t tot-P 22.5 t	1 billion SEK (110 M Euro)
131	SE	Bornholm Basin	Nymölla	Industry (Pulp & Paper)	High discharges of COD and nutrients	1996 PITF 8	1987-95: BOD7 86% COD 47% tot-N 52% tot-P 58% NOX 7% S 58%	BOD7: 4821 t COD: 17,981 t tot-N: 244 t tot-P: 23 t NOX: 47 t S: 320 t	18 M Euro

*) Data from 1991-98 based on information in the Annual Report 1999. Later data has been used where available in combination with the Annual Report data. In a few cases the loads at the time of deletion have been estimated based on the extrapolation of graphs (Hot Spot No. 83.2) or calculated from flow and average concentration data.

**) Substantial reductions of BOD7 and tot-P already obtained before 1987

Annex 3

Pollution reductions per receiving area (t/year)

Pollution load reductions per receiving area (t/year)

Receiving area	BOD	COD	Tot-N	tot-P	SS	AOX	NOx	SOx	NO2	SO2	CO	S	Dust	Metal dust
Bothnian Bay	2,749	7,902	+3	6	-	244	-	-	-	-	-	-	143	-
Bothnian Sea	4,100	29,000	+110	3	-	3,280	+70	-	-	-	-	952		
Archipelago and Åland Seas	-	-	62	362	-	-	-	-	-	-	-	-	-	-
Neva River / Lake Ladoga	19,006	62,876	397	62	-	1,542	-	-	-	-	-	-	-	-
Gulf of Finland	3,351	10,649	+38	+3	-	-	-	-	-	-	-	-	-	-
Western Estonian Coast														
Gulf of Riga / Daugava River Basin	35,398	-	23,757	1,156	-	-	-	127	6	-	-	-	-	-
Latvian Coast														
Nemunas River Basin														
Lithuanian Coast														
Lithuanian / Kaliningrad Coast														
Kaliningrad	5,700	-	0.2	0.002	-	-	-	1,651	115	-	-	-	-	-
Kaliningrad / Polish Coast	-	-	-	-										
Vistula River Basin / Baltic Coast of Poland	25,354	63,461	1,644	2,209	6,361	-	5,041	6,819	+170	4,139	3,536	-	14,231	39
Oder-Odra River Basin	1,708	3,287	622	506	-	-	-	-	-	-	-	-	7,954	-
Arkona Basin	3,301	6,697	1,020	189	-	-	-	-	-	-	-	-	-	-
Belt Sea	8,224	10,514	1,619	323	-	-	-	-	-	-	-	-	-	-
The Sound	1,153	3,225	1,284	230	-	-	-	-	-	-	-	-	-	-
Kattegat	1,200	6,000	320	6	-	800	+110	-	-	-	-	170	-	-
Swedish Coast	975	-	2,583	23	-	-	-	-	-	-	-	-	-	-
Bornholm Basin	4,821	17,981	244	23	-	-	47	-	-	-	-	320	-	-
Total reduction (t/year)	117,040 117,000	221,592 221,600	33,401 33,400	5,095 5,100	6,361 6,400	5,866 5,900	4,908 4,900	8,597 8,600	+49 50	4,139 4,100	3,536 3,500	1,442 1,400	22,185 22,200	39 40

Pollution load reductions per receiving area (t/year)

Receiving area	Fe	Cr	Zn	Pb	Cd	Cu	As	Ni	Chlorine	Sulphuric acid	Fluoride
Bothnian Bay											
Bothnian Sea	5,804	11	42	0.6						19,738	
Archipelago and Åland Seas											
Neva River/ Lake Ladoga											
Gulf of Finland											
Western Estonian Coast											
Gulf of Riga/ Daugava River Basin	1,776		0.02			0.5		0.2			
Latvian Coast											
Nemunas River Basin											
Lithuanian Coast											
Lithuanian/ Kaliningrad Coast											
Kaliningrad											
Kaliningrad/Polish Coast											
Vistula River Basin/ Baltic Coast of Poland			8,995	129	60				6,867	139	
Oder-Odra River Basin		0.26		114		156	10				7.1
Arkona Basin											
Belt Sea											
The Sound											
Kattegat											
Swedish Coast											
Bornholm Basin											
Total reduction (t/year)	7,580 7,580	11 10	9,037 9,040	243 240	60 60	156 160	10 10	-	6,867 6,870	19,877 19,880	7 10

Annex 4
Published reports

Baltic Sea Environment Proceedings (BSEP)

- No. 46 Summaries of the Pre-feasibility studies. Prepared for the Baltic Sea Joint Comprehensive Environmental Action Programme (1993)
- No. 47 High Level Conference on Resource Mobilization. Gdansk, Poland, 24-25 March 1993. Compilation of Presentations and Statements (1993)
- No. 48 The Baltic Sea Joint Comprehensive Environmental Action Programme (1993)
- No. 49 The Baltic Sea Joint Comprehensive Environmental Action Programme. Opportunities and Constraints in Programme Implementation (1993)
- No. 67 Workshop on the reduction of emissions from traffic in the Baltic Sea Area (1997)
- No. 71 Final Report on the implementation of the 1988 Ministerial Declaration (1998)
- No. 72 The Baltic Sea Joint Comprehensive Environmental Action Programme: Recommendations for Updating and Strengthening (1998)
- No. 74 Agenda 21 for the Baltic Sea Region, Sustainable Development of the Agricultural Sector in the Baltic Sea Region (1998)
- No. 79 Transport Sector Investment Decision-Making in the Baltic Sea Region (2000)
- No. 83 Thematic Reports on HELCOM PITF Regional Workshops held in the Baltic Republics. Riga, Latvia, 24-25 May 2000; Vilnius, Lithuania, 26-27 October 2000; Tallinn, Estonia, 1-2 March 2000 (2001)

Activity Inventories

Helsinki Commission: First Activity Inventory. The Baltic Sea Joint Comprehensive Environmental Action Programme. 1992

Helsinki Commission: Second Activity Inventory. The Baltic Sea Joint Comprehensive Environmental Action Programme. December 1993

Helsinki Commission: Third Activity Inventory. The Baltic Sea Joint Comprehensive Environmental Action Programme. February 1995

Helsinki Commission: Fourth Activity Inventory. The Baltic Sea Joint Comprehensive Environmental Action Programme. April 1996

Helsinki Commission: Fifth Activity Inventory. The Baltic Sea Joint Comprehensive Environmental Action Programme. August 1997

Annual Reports

HELCOM Programme Implementation Task Force, HELCOM PITF. Annual Report 1993

HELCOM Programme Implementation Task Force, HELCOM PITF. Annual Report 1994

HELCOM Programme Implementation Task Force, HELCOM PITF. Annual Report 1996

HELCOM Programme Implementation Task Force, HELCOM PITF. Annual Report 1997

HELCOM Programme Implementation Task Force, HELCOM PITF. Annual Report 1998

HELCOM Programme Implementation Task Force, HELCOM PITF. Annual Report 1999

Published reports

The Finnish Environment Institute: Raising environmental awareness in the Baltic Sea area. The Finnish Environment 327. Helsinki, 1999

The Finnish Environment Institute: Review of Progress at Industrial Hot Spots. The Finnish Environment 576. Helsinki, 2002

Other reports

HELCOM PITF: Water Pricing/Cost Recovery in the Baltic Sea Countries, October 2002.

Available at: <http://www.helcom.fi/pitf/waterpricingcostrecovery.pdf>

Cost Effective Measures. Report prepared by VA-Project for the Swedish Environmental Protection Agency (May 2003).

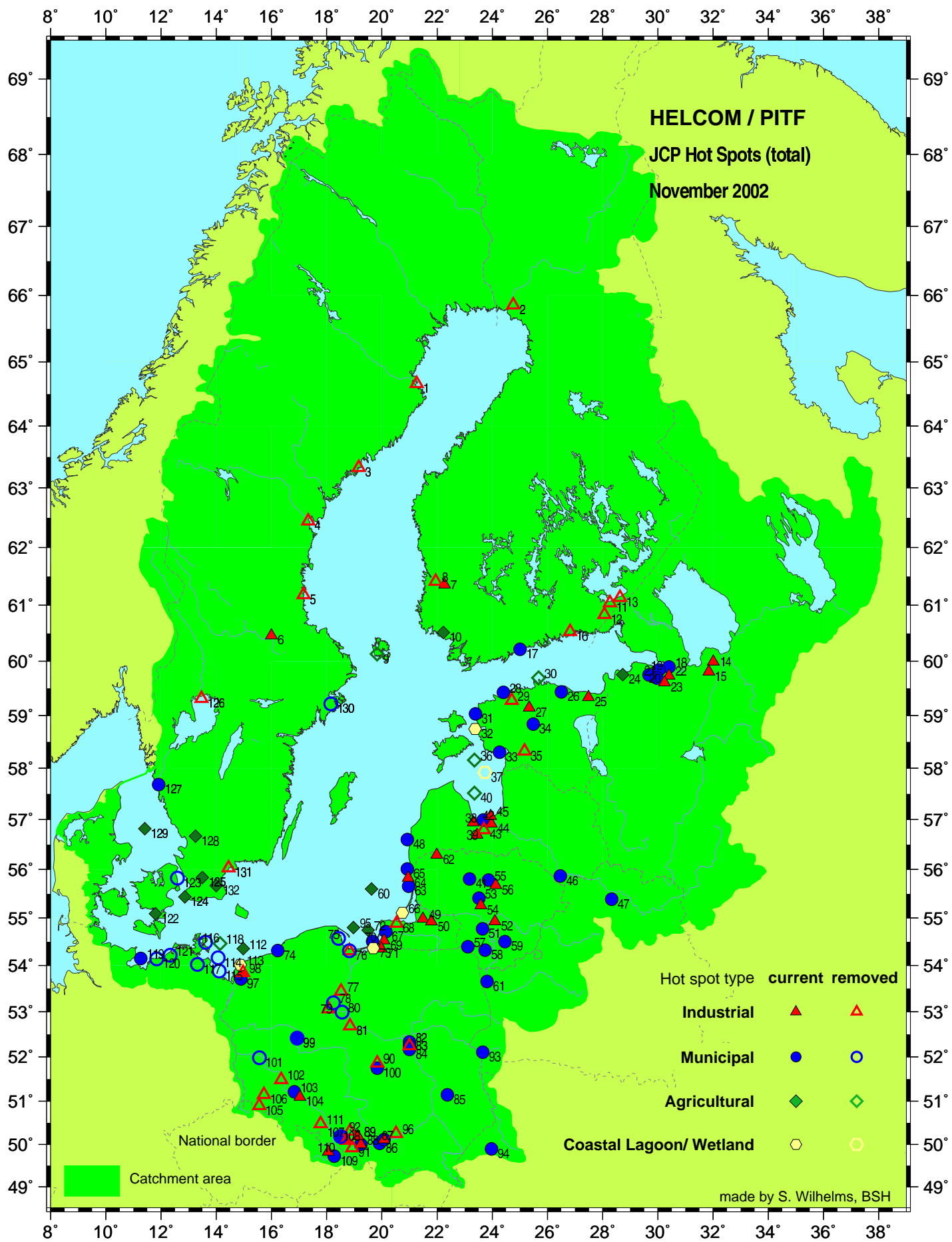
Available at: <http://www.helcom.fi/pitf/costeffectivemeasures.pdf>

Brochures

The Baltic Sea Joint Comprehensive Environmental Action Programme, 1993

Annex 5

Map of JCP Hot Spots



PART 2

Evaluation of the PITF Regional Workshops

Evaluation of the PITF Regional Workshops

1. Introduction

In the light of recent developments HELCOM Heads of Delegation (HOD) 2/2000 advised PITF to reconsider the focus of its activities. HELCOM HOD called for the establishment of a Preparatory Group to assist in these preparations and to highlight the relevant issues in a discussion paper drafted by the Secretariat.

The Preparatory Group proposed a series of Regional Workshops (RWS). The overall aim of the workshops was to present information and data on Hot Spots to provide a basis for a detailed discussion of individual hot spots with a view to their future deletion from the List of Hot Spots.

By the end of October 2002, ten Regional Workshops and one bilateral meeting had been conducted, covering all the countries participating in the JCP/PITF. Participants in the workshops included representatives from local, regional and national administrative levels and the so-called "Hot Spot owners". The workshops provided an overview on the environmental situation in general and the status of Hot Spots in the countries/regions concerned, as well as information about the needs and possibilities for accelerating the implementation of the JCP towards the deletion of more Hot Spots. After the first six PITF Regional Workshops the Preparatory Group presented a Progress Report with a preliminary evaluation of the Workshops, including concrete proposals on how to proceed to the PITF 18/2001 meeting. This report summarises the "lessons learnt" after the completion of the Regional Workshops.

2. The PITF Regional Workshops (RWS)

Regional workshops

Regional workshops have been held as follows:

<u>Country</u>	<u>City/Region</u>	<u>Date</u>	<u>Thematic Report</u>
Latvia	Riga	24-25 May 2000	published
Lithuania	Vilnius	26-27 October 2001	published
Estonia	Tallinn	1-2 March 2001	published
Russia	Kaliningrad	23-24 April 2001	in preparation
Russia	St. Petersburg	13-14 June 2001	in preparation
Poland I	Cracow	25-26 September 2001	in preparation
Denmark/Germany	Lübeck	29-30 January 2002	in preparation
Finland/Sweden	Stockholm	27-28 May 2002	in preparation
Belarus/Ukraine	Lvov	18-19 June 2002	in preparation
Poland II	Wroclaw	8-9 October 2002	in preparation
Czech Republic ^{*)}	Prague	30 October 2002	Minutes only

^{*)} bilateral meeting only

Two Regional Workshops were organised in Poland in order to cover all the Hot Spots in different regions of Poland.

Organisation and structure of the RWS

The Regional Workshops have provided a good opportunity to meet the people dealing with the Hot Spots. The host countries have been responsible for inviting Hot Spot owners, governmental, regional and local authorities as well as NGOs, while the Secretariat has invited members of the Preparatory Group (PG) and the International Financial Institutions as well as special guests on behalf of the host country.

The agendas of the workshops were elaborated by the host countries and the Secretariat. Occasionally a drafting group consisting of representatives of the host country and the Secretariat (a Rapporteur) also safeguarded the elaboration of the conclusions with regard to timing and substance.

The RWS generally featured a representative of the host country giving an overview of the overall environmental situation of the country/region concerned, including areas of progress and problems linked to the Hot Spots with respect to their further development and upgrading. Representatives of the International Financial Institutions have also described the role of IFIs in relation to HELCOM PITF, as well as the general tasks they deal with in the country/region concerned, and the experience they have gained in the country.

Representatives ("owners" or the authorities responsible) for each of the Hot Spots gave information on the current status of the Hot Spots and the measures planned or under implementation, with a view to their deletion from the List. Documentation reflecting the status/development of Hot Spots, has been very useful, particularly regarding emissions and discharges of pollutants, figures on investments and plans for measures aiming towards deletion. Most host countries covered all the Hot Spots concerned by presenting documents distributed before and at the Workshops. This facilitated the wider understanding of the problems and led to fruitful discussions.

The information provided, based on realistic pictures of developments at Hot Spots towards their deletion from the List, together with the needs and problems identified, all formed the basis for the relevant conclusions.

The structure of the RWS conclusions has changed during the series of workshops, with an increased focus on technical/investment problems and actions in relation to the individual Hot Spots, and less emphasis on the general JCP and PITF aspects. The conclusions of the Regional Workshops generally provide information about:

- the co-ordination of PITF activities and the importance of integrated approaches, involving different sectorial authorities;
- the legal and organisational frameworks for Hot Spot management;
- investments and the role of the governmental, regional and local authorities and the private sector;
- information on the status of the Hot Spots, describing progress and problems regarding further development towards the deletion of the Hot Spot from the List.

As a general rule, press conferences have been arranged after workshops to increase the awareness of environmental problems in the region, and to give more publicity to efforts to reduce pollution from point and non-point sources.

Thematic Reports are to be prepared by the countries concerned, in addition to the conclusions from the RWS, in order to present their assessment of the Hot Spots, and to provide information for use within the country concerned. Thematic Reports from the first three RWS have been published so far.

3. Experience gained through the RWS

The Regional Workshops have demonstrated that the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) is alive and active, and that the expression "Hot Spots" is very well known.

The preparation, realisation and reporting of the workshops has demonstrated that this concept has been workable and useful. Participation and presentations by representatives of the IFIs have been important and useful. The general presentations by the central authorities regarding the legal and organisational frameworks for Hot Spot management and the different investment programmes have also been very informative. The detailed presentation and discussion of individual Hot Spots has also been useful, and has normally provided a sufficient basis for countries to decide whether a proposal for deletion from the Hot Spot List would be timely.

Individual Hot Spot documents were generally prepared in good time before the Workshops. The participation of representatives of the country/region where the next workshop was planned facilitated the subsequent preparation work. The responsibility for the conclusions of the workshop and the press conference was shared between the host country and the Secretariat.

Some general conclusions according to the different types of Hot Spots in the countries/regions visited can be drawn as follows:

Agriculture

Agriculture still remains a major source of the nutrients entering the Baltic Sea. Despite general decreases in leaching from agricultural areas due to reductions in the use of fertilisers and structural economic changes in several countries, the nutrient loads in rivers and into the Baltic Sea are still too high.

In the Baltic States, pollution from agriculture has been reduced, but there is a danger that future developments within the sector could create major problems unless precautionary measures are taken.

In Russia, several major pig farms in the catchment area have been closed due to economic changes, and only one large pig farm remains. The implementation of both Annex III of the Helsinki Convention and the Code of Good Agricultural Practice should be further promoted and developed.

In Poland no new information about agricultural Hot Spots has been available but there seems to be a need for splitting the large Hot Spots into smaller and more well-defined Hot Spots.

In Denmark, Finland, Germany and Sweden, different actions and plans are being implemented in order to reduce agricultural pollution. It is not yet possible to judge if the measures already implemented will be sufficient to reduce the nutrient losses, due to the long reaction time of the systems concerned, and difficulties with monitoring the loads.

It is assumed that further improvements can be achieved by:

- improved management options consequent from the sub-division of extensive agricultural Hot Spots;
- implementation of Annex III to the Convention;
- elaboration and implementation of national Codes on Good Agricultural Practice (GAP);
- implementation of the EU Nitrate Directive;
- application of the river basin approach, in conjunction with the EU Water Framework Directive;
- development of new measures.

Coastal lagoons and wetlands

The Baltic coastal lagoons receive nutrients and hazardous substances from sources located upstream along the rivers that ultimately enter the lagoons. Agriculture, insufficient waste water treatment, and industry are all significant sources. This pollution threatens biodiversity and nature conservation in these unique habitats.

The Curonian Lagoon, which is shared by Lithuania and Russia (Kaliningrad Region), receives severe pollution from industries and municipalities in Kaliningrad as well as from agriculture in the catchment area. The Vistula lagoon and the Matsalu Bay and wetlands also receive most of their pollution from agriculture and from insufficiently treated waste water. Major progress has been achieved in the Gulf of Riga, where the Hot Spot has been deleted. But the Gulf of Riga is still affected by several other Hot Spots.

Integrated Coastal Zone Management Plans (ICZM Plans) have been developed to deal with social, economic, and environmental issues in these areas. Further commitments, including the establishing of joint technical tools and administrative mechanisms, are needed in order to implement the ICZM Plans as a step towards the deletion of these Hot Spots from the List.

The latest RWS in Poland raised the question of how to handle Hot Spots that are shared by two countries.

Combined municipal and industrial polluters

This category of pollution sources encompasses urban waste water and industrial discharges into municipal sewerage systems as well as sludge and solid waste.

In the Baltic States, major improvements have been made as regards urban waste water treatment from large municipalities, and pollution loads from these sources have been reduced substantially. Although there are still some problems left, these do not have any major effect on the Baltic Sea. In other areas, however, there are still large problems to be solved before the relevant Hot Spots can be deleted.

Regarding industrial discharges into waste water treatment plants, the reduced production or closure of industrial facilities has led to considerable reductions in the amounts of pollutants entering sewerage systems.

In Poland, major investments and progress have been attained in this sector. Existing treatment plants have been modernised, and new plants have been constructed. Also in Germany and Sweden, the construction or updating of treatment plants to achieve

full nutrient removal has been continued and completed, thereby implementing the EU Directive.

In Russia, Belarus and Ukraine, the main problems relate to the overloading of existing treatment plants and the lack of maintenance, resulting in the running down of plants. Plans for renovation and reconstruction are on the way, but governmental decisions and financing are difficult. Water consumption rates are rather high. Proper water pricing is important in providing funds for investment and operation/maintenance, while at the same time reducing water consumption and thereby the necessary capacities of treatment plants. The poor condition of sewers and the lack of any sewerage systems in certain areas are major problems in several countries.

The main obstacles hindering further upgrading and reconstruction in Hot Spots are as follows:

- the high cost of new infrastructure and updated technology
- the absence of major investments for construction/reconstruction of waste water treatment plants and sewerage systems.

An increase in the numbers of applications for the deletion of combined Municipal and Industrial Hot Spots has already been noticeable following the Regional Workshops, and more proposals are expected for combined municipal and industrial polluters within the next few years.

Industries

Several significant industrial sites have been closed down or undergone drastic reductions in production due to the economic recession in the transitional countries. But there are still many industrial plants generating high levels of pollution per unit produced, where major investment is required to bring in updated/clean technology. Major persistent problems particularly concern the pulp & paper and metal industries. There are many small and medium-sized plants in these sectors which can cause considerable problems for municipal waste water treatment plants.

Within individual industrial plants there are still major problems, although many industries are slowly but surely closing down old, highly polluting production units, and installing modern technology or implementing new cleaner production processes. Proposals are consequently emerging for the deletion of certain Hot Spots. In Poland several industrial plants are now ready or nearly ready for deletion from the List.

The main remaining obstacles may be:

- the lack of a national feeling of responsibility for the industrial sector
- continuing weaknesses in the enforcement of environmental legislation
- the high costs of updated cleaner technology
- hesitance among private investors.

4. Conclusions

The PITF Regional Workshops were held in order to answer several key questions about the need to re-orientate the PITF to make it more pro-active, and how this could be done. Based on the conclusions of the recent round of Regional Workshops, which covered all the countries in the Baltic Sea catchment area, it can be stated that:

- HELCOM PITF is well-known and recognised in the coastal countries;
- the suitability of the basic approach of the JCP combining environmental policy and investment has been confirmed;
- the List of Hot Spots has proved to be a very efficient political tool;
- the direct involvement of Hot Spot “owners” in the RWS has increased awareness of the work of the JCP;
- the press conferences held in conjunction with the RWS have provided relevant information to the public, politicians, and the business community.

The low level of investment in industry and municipal infrastructure in some areas is a reflection of the currently unsatisfactory state of the related regulatory frameworks, as well as a sign that outdated technology is still widely used. Many industrial plants and sewage treatment plants require huge investments. Reforms are urgently needed in order to promote the principle of suitable water pricing and full cost-recovery as the basis for the finances of municipal enterprises. This will involve the imposition of realistic tariffs as well as the application of sound budgeting practices. The challenges to find a balance with regard to the economic capacities of consumers and industry and the need for a pricing system that enables the full recovery of investment and operational costs. Raising tariffs too rapidly should be avoided, as this could have highly negative social and economic consequences.

For the countries in accession to the European Union, EU legislation such as the Urban Wastewater Directive, has already had an important impact on developments. The EU Water Framework Directive, the IPPC Directive, and other relevant directives will all also contribute greatly towards improvements at many hot spots in the future.

The accomplishments achieved within the framework of the PITF have been more satisfactory than can be judged from the number of Hot Spots so far deleted from the List. Reductions in emissions and discharges, investment figures, and other parameters should also be used to show how progress towards deletion has been achieved at individual Hot Spots.

Adjustments to the originally defined Hot Spots list could now be considered on the basis of recent experience, particularly regarding large and complex marine ecosystems, and the extensive agricultural Hot Spots.

The progress achieved and the results obtained in implementing the JCP are encouraging. This indicates a change of attitude among the responsible actors with regard to integrating environmental issues into their decision-making.

In attempting to remove the obstacles to the full implementation of the JCP, the HELCOM PITF must also note the following contradictory trends:

- Certain Hot Spots have been upgraded enough for them to consider applying for deletion, but their respective owners or the local authorities may be afraid of losing governmental support for further action if the site is no longer a listed Hot Spot;
- In some cases it has been very difficult to find external investors to fund improvements at industrial plants with out-dated equipment, but closing-down the Hot Spot concerned might create serious social or economic problems locally or even regionally.

The Preparatory Group has noticed that due to the way the List of Hot Spots was drawn up in 1992, based on the studies and quality of data then available, not all the truly important sites were actually included in the List. Subsequent developments and experience, and the increased availability of accurate data mean that it would now be timely to consider revising and updating the List of Hot Spots.

It can be concluded that the PITF Regional Workshops have been useful, and their outcome satisfactory compared to the resources expended. The workshops have increased awareness of JCP activities and provided up-to-date information about the Hot Spots, while also facilitating networking. The discussions held at the workshops may also have triggered the wave of proposals in the last couple of years for changes in the List of Hot Spots. It is recommended that another round of RWS be conducted again in a few years.

Baltic Sea Environment Proceedings (BSEP)

- No. 1 JOINT ACTIVITIES OF THE BALTIC SEA STATES WITHIN THE FRAMEWORK OF THE CONVENTION ON THE PROTECTION OF THE MARINE ENVIRONMENT OF THE BALTIC SEA AREA 1974-1978 (1979)*
- No. 2 REPORT OF THE INTERIM COMMISSION (IC) TO THE BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION (1981)*
- No. 3 ACTIVITIES OF THE COMMISSION 1980
- Report on the activities of the Baltic Marine Environment Protection Commission during 1980
- HELCOM Recommendations passed during 1980 (1981)*
- No. 4 BALTIC MARINE ENVIRONMENT BIBLIOGRAPHY 1970-1979 (1981)*
- No. 5A ASSESSMENT OF THE EFFECTS OF POLLUTION ON THE NATURAL RESOURCES OF THE BALTIC SEA, 1980
PART A-1: OVERALL CONCLUSIONS (1981)*
- No. 5B ASSESSMENT OF THE EFFECTS OF POLLUTION ON THE NATURAL RESOURCES OF THE BALTIC SEA, 1980
PART A-1: OVERALL CONCLUSIONS
PART A-2: SUMMARY OF RESULTS
PART B: SCIENTIFIC MATERIAL (1981)
- No. 6 WORKSHOP ON THE ANALYSIS OF HYDROCARBONS IN SEAWATER
Institut für Meereskunde an der Universität Kiel, Department of Marine Chemistry, March 23 -April 3, 1981 (1982)
- No. 7 ACTIVITIES OF THE COMMISSION 1981
- Report of the activities of the Baltic Marine Environment Protection Commission during 1981 including the Third Meeting of the Commission held in Helsinki 16-19 February 1982
- HELCOM Recommendations passed during 1981 and 1982 (1982)
- No. 8 ACTIVITIES OF THE COMMISSION 1982
- Report of the activities of the Baltic Marine Environment Protection Commission during 1982 including the Fourth Meeting of the Commission held in Helsinki 1-3 February 1983
- HELCOM Recommendations passed during 1982 and 1983 (1983)
- No. 9 SECOND BIOLOGICAL INTERCALIBRATION WORKSHOP
Marine Pollution Laboratory and Marine Division of the National Agency of Environmental Protection, Denmark, August 17-20, 1982, Rønne, Denmark (1983)

- No. 10 TEN YEARS AFTER THE SIGNING OF THE HELSINKI CONVENTION
National Statements by the Contracting Parties on the Achievements in
Implementing the Goals of the Convention on the Protection of the Marine
Environment of the Baltic Sea Area
(1984)
- No. 11 STUDIES ON SHIP CASUALTIES IN THE BALTIC SEA 1979-1981
Helsinki University of Technology, Ship Hydrodynamics Laboratory, Otaniemi,
Finland
P. Tuovinen, V. Kostilainen and A. Hämäläinen
(1984)
- No. 12 GUIDELINES FOR THE BALTIC MONITORING PROGRAMME FOR THE
SECOND STAGE
(1984)*
- No. 13 ACTIVITIES OF THE COMMISSION 1983
- Report of the activities of the Baltic Marine Environment Protection Commission
during 1983 including the Fifth Meeting of the Commission held in Helsinki
13-16 March 1984
- HELCOM Recommendations passed during 1983 and 1984
(1984)
- No. 14 SEMINAR ON REVIEW OF PROGRESS MADE IN WATER PROTECTION
MEASURES
17-21 October 1983, Espoo, Finland
(1985)
- No. 15 ACTIVITIES OF THE COMMISSION 1984
- Report of the activities of the Baltic Marine Environment Protection Commission
during 1984 including the Sixth Meeting of the Commission held in Helsinki
12-15 March 1985
- HELCOM Recommendations passed during 1984 and 1985
(1985)
- No. 16 WATER BALANCE OF THE BALTIC SEA
A Regional Cooperation Project of the Baltic Sea States; International Summary
Report
(1986)
- No. 17A FIRST PERIODIC ASSESSMENT OF THE STATE OF THE MARINE
ENVIRONMENT OF THE BALTIC SEA AREA, 1980-1985; GENERAL
CONCLUSIONS
(1986)
- No. 17B FIRST PERIODIC ASSESSMENT OF THE STATE OF THE MARINE
ENVIRONMENT OF THE BALTIC SEA AREA, 1980-1985; BACKGROUND
DOCUMENT
(1987)
- No. 18 ACTIVITIES OF THE COMMISSION 1985
Report of the activities of the Baltic Marine Environment Protection Commission
during 1985 including the Seventh Meeting of the Commission held in Helsinki
11-14 February 1986
- HELCOM Recommendations passed during 1986
(1986)*
- No. 19 BALTIC SEA MONITORING SYMPOSIUM
Tallinn, USSR, 10-15 March 1986
(1986)

- No. 20 FIRST BALTIC SEA POLLUTION LOAD COMPILATION
(1987)
- No. 21 SEMINAR ON REGULATIONS CONTAINED IN ANNEX II OF MARPOL 73/78
AND REGULATION 5 OF ANNEX IV OF THE HELSINKI CONVENTION
National Swedish Administration of Shipping and Navigation;
17-18 November 1986, Norrköping, Sweden
(1987)
- No. 22 SEMINAR ON OIL POLLUTION QUESTIONS
19-20 November 1986, Norrköping, Sweden
(1987)
- No. 23 ACTIVITIES OF THE COMMISSION 1986
- Report on the activities of the Baltic Marine Environment Protection
Commission during 1986 including the Eighth Meeting of the Commission held
in Helsinki
24-27 February 1987
- HELCOM Recommendations passed during 1987
(1987)*
- No. 24 PROGRESS REPORTS ON CADMIUM, MERCURY, COPPER AND ZINC
(1987)
- No. 25 SEMINAR ON WASTEWATER TREATMENT IN URBAN AREAS
7-9 September 1986, Visby, Sweden
(1987)
- No. 26 ACTIVITIES OF THE COMMISSION 1987
- Report on the activities of the Baltic Marine Environment Protection
Commission during 1987 including the Ninth Meeting of the Commission held in
Helsinki
15-19 February 1988
- HELCOM Recommendations passed during 1988
(1988)
- No. 27A GUIDELINES FOR THE BALTIC MONITORING PROGRAMME FOR THE THIRD
STAGE; PART A. INTRODUCTORY CHAPTERS
(1988)
- No. 27B GUIDELINES FOR THE BALTIC MONITORING PROGRAMME FOR THE THIRD
STAGE; PART B. PHYSICAL AND CHEMICAL DETERMINANDS IN SEA
WATER
(1988)
- No. 27C GUIDELINES FOR THE BALTIC MONITORING PROGRAMME FOR THE THIRD
STAGE; PART C. HARMFUL SUBSTANCES IN BIOTA AND SEDIMENTS
(1988)
- No. 27D GUIDELINES FOR THE BALTIC MONITORING PROGRAMME FOR THE THIRD
STAGE; PART D. BIOLOGICAL DETERMINANDS
(1988)
- No. 28 RECEPTION OF WASTES FROM SHIPS IN THE BALTIC SEA AREA
- A MARPOL 73/78 SPECIAL AREA
(1989)

- No. 29 ACTIVITIES OF THE COMMISSION 1988
 - Report on the activities of the Baltic Marine Environment Protection Commission during 1988 including the Tenth Meeting of the Commission held in Helsinki 14-17 February 1989
 - HELCOM Recommendations passed during 1989 (1989)
- No. 30 SECOND SEMINAR ON WASTEWATER TREATMENT IN URBAN AREAS
 6-8 September 1987, Visby, Sweden (1989)
- No. 31 THREE YEARS OBSERVATIONS OF THE LEVELS OF SOME RADIONUCLIDES IN THE BALTIC SEA AFTER THE CHERNOBYL ACCIDENT
 Seminar on Radionuclides in the Baltic Sea
 29 May 1989, Rostock-Warnemünde, German Democratic Republic (1989)
- No. 32 DEPOSITION OF AIRBORNE POLLUTANTS TO THE BALTIC SEA AREA 1983-1985 AND 1986 (1989)
- No. 33 ACTIVITIES OF THE COMMISSION 1989
 - Report on the activities of the Baltic Marine Environment Protection Commission during 1989 including the Eleventh Meeting of the Commission held in Helsinki 13-16 February 1990
 - HELCOM Recommendations passed during 1990 (1990)*
- No. 34 STUDY OF THE RISK FOR ACCIDENTS AND THE RELATED ENVIRONMENTAL HAZARDS FROM THE TRANSPORTATION OF CHEMICALS BY TANKERS IN THE BALTIC SEA AREA (1990)
- No. 35A SECOND PERIODIC ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT OF THE BALTIC SEA, 1984-1988; GENERAL CONCLUSIONS (1990)
- No. 35B SECOND PERIODIC ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT OF THE BALTIC SEA, 1984-1988; BACKGROUND DOCUMENT (1990)
- No. 36 SEMINAR ON NUTRIENTS REMOVAL FROM MUNICIPAL WASTE WATER
 4-6 September 1989, Tampere, Finland (1990)
- No. 37 ACTIVITIES OF THE COMMISSION 1990
 - Report on the activities of the Baltic Marine Environment Protection Commission during 1990 including the Twelfth Meeting of the Commission held in Helsinki
 19-22 February 1991
 - HELCOM Recommendations passed during 1991 (1991)
- No. 38 THIRD BIOLOGICAL INTERCALIBRATION WORKSHOP
 27-31 August 1990, Visby, Sweden (1991)
- No. 39 AIRBORNE POLLUTION LOAD TO THE BALTIC SEA 1986-1990 (1991)

- No. 40 INTERIM REPORT ON THE STATE OF THE COASTAL WATERS OF THE BALTIC SEA
(1991)
- No. 41 INTERCALIBRATIONS AND INTERCOMPARISONS OF MESUREMENT METHODS FOR AIRBORNE POLLUTANTS
(1992)
- No. 42 ACTIVITIES OF THE COMMISSION 1991
 - Report of the activities of the Baltic Marine Environment Protection Commission during 1991 including the 13th meeting of the Commission held in Helsinki 3-7 February 1992
 - HELCOM Recommendations passed during 1992
(1992)
- No. 43 BALTIC MARINE ENVIRONMENT BIBLIOGRAPHY 1986-1990
(1992)
- No. 44 NITROGEN AND AGRICULTURE, INTERNATIONAL WORKSHOP
9-12 April 1991, Schleswig, Germany
(1993)
- No. 45 SECOND BALTIC SEA POLLUTION LOAD COMPILATION
(1993)
- No. 46 SUMMARIES OF THE PRE-FEASIBILITY STUDIES
Prepared for the Baltic Sea Joint Comprehensive Environmental Action Programme
(1993)*
- No. 47 HIGH LEVEL CONFERENCE ON RESOURCE MOBILIZATION
Gdansk, Poland, 24-25 March 1993
Compilation of Presentations and Statements
(1993)
- No. 48 THE BALTIC SEA JOINT COMPREHENSIVE ENVIRONMENTAL ACTION PROGRAMME
(1993)
- No. 49 THE BALTIC SEA JOINT COMPREHENSIVE ENVIRONMENTAL ACTION PROGRAMME
Opportunities and Constraints in Programme Implementation
(1993)
- No. 50 SEMINAR ON RECEPTION FACILITIES IN PORTS
Turku, Finland, 16-19 November 1992
(1993)
- No. 51 STUDY OF THE TRANSPORTATION OF PACKAGED DANGEROUS GOODS BY SEA IN THE BALTIC SEA AREA AND RELATED ENVIRONMENTAL HAZARDS
(1993)
- No. 52 ACTIVITIES OF THE COMMISSION 1992
 - Report on the activities of the Baltic Marine Environment Protection Commission during 1992 including the 14th meeting of the Commission held in Helsinki 2-5 February 1993
 - HELCOM Recommendations passed during 1993
(1993)

- No. 53 BALTIC MARINE ENVIRONMENT BIBLIOGRAPHY 1991-1992
(1993)
- No. 54 FIRST ASSESSMENT OF THE STATE OF THE COASTAL WATERS OF THE
BALTIC SEA
(1993)
- No. 55 ACTIVITIES OF THE COMMISSION 1993
- Report on the activities of the Baltic Marine Environment Protection
Commission during 1993 including the 15th meeting of the Commission held in
Helsinki
8-11 March 1994
- HELCOM Recommendations passed during 1994
(1994)
- No. 56 INTERGOVERNMENTAL ACTIVITIES IN THE FRAMEWORK OF THE HELSINKI
CONVENTION 1974-1994
(1994)
- No. 57 GUIDELINES FOR THE THIRD POLLUTION LOAD COMPILATION (PLC-3)
(1994)*
- No. 58 ICES/HELCOM WORKSHOP ON QUALITY ASSURANCE OF CHEMICAL
ANALYTICAL PROCEDURES FOR THE BALTIC MONITORING PROGRAMME
5-8 October 1993, Hamburg, Germany
(1994)
- No. 59 HELCOM SEMINAR FOR EXPERTS FROM ESTONIA, LATVIA, LITHUANIA AND
RUSSIA ON THE IMPLEMENTATION OF HELCOM ARRANGEMENTS, OTHER
INTERNATIONAL INSTRUMENTS AND RELATED MATTERS
30 August - 3 September 1993, Riga, Latvia
(1994)
- No. 60 ACTIVITIES OF THE COMMISSION 1994
- Report on the activities of the Baltic Marine Environment Protection
Commission during 1994 including the 16th meeting of the Commission held in
Helsinki
14-17 March 1995
- HELCOM Recommendations passed during 1995
(1995)
- No. 61 RADIOACTIVITY IN THE BALTIC SEA 1984 - 1991
(1995)
- No. 62 ACTIVITIES OF THE COMMISSION 1995
- Report on the activities of the Baltic Marine Environment Protection
Commission during 1995
including the 17th meeting of the Commission held in Helsinki 12-14 March
1996
- HELCOM Recommendations passed during 1996
(1996)
- No. 63 COASTAL AND MARINE PROTECTED AREAS IN THE BALTIC SEA REGION
(1996)*
- No. 64A THIRD PERIODIC ASSESSMENT OF THE STATE OF THE MARINE
ENVIRONMENT OF THE BALTIC SEA, 1989-1993; EXECUTIVE SUMMARY
(1996)

- No. 64B THIRD PERIODIC ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT OF THE BALTIC SEA, 1989-1993; BACKGROUND DOCUMENT (1996)
- No. 65 OVERVIEW ON ACTIVITIES 1996 (1997)*
- No. 66 BALTIC MARINE ENVIRONMENT BIBLIOGRAPHY 1993-1995 (1997)
- No. 67 WORKSHOP ON THE REDUCTION OF EMISSIONS FROM TRAFFIC IN THE BALTIC SEA AREA (1997)
- No. 68 THE EVALUATION OF THE RELATION OF ATMOSPHERIC DEPOSITION TO RIVERINE INPUT OF NITROGEN TO THE BALTIC SEA (1997)
- No. 69 AIRBORNE POLLUTION LOAD TO THE BALTIC SEA 1991-1995 (1997)
- No. 70 THE THIRD BALTIC SEA POLLUTION LOAD COMPILATION (1998)
- No. 71 THE FINAL REPORT ON THE IMPLEMENTATION OF THE 1988 MINISTERIAL DECLARATION (1998)*
- No. 72 THE BALTIC SEA JOINT COMPREHENSIVE ENVIRONMENTAL ACTION PROGRAMME: RECOMMENDATIONS FOR UPDATING AND STRENGTHENING (1998)
- No. 73 OVERVIEW ON ACTIVITIES 1997 (1998)
- No. 74 AGENDA 21 FOR THE BALTIC SEA REGION, SUSTAINABLE DEVELOPMENT OF THE AGRICULTURAL SECTOR IN THE BALTIC SEA REGION (1998)
- No. 75 RED LIST OF MARINE AND COASTAL BIOTOPES AND BIOTOPE COMPLEXES OF THE BALTIC SEA, BELT SEA AND KATTEGAT (1998)
- No. 76 MARINE SEDIMENT EXTRACTION IN THE BALTIC SEA - STATUS REPORT (1999)
- No. 77 BALTIC LEGAL MANUAL - INFORMATION ON ANTI-POLLUTION REGULATIONS AT SEA AND THE PROSECUTION OF VIOLATIONS THEREOF IN THE BALTIC SEA AREA (2000)
- No. 78 GUIDELINES ON ENSURING SUCCESSFUL CONVICTIONS OF OFFENDERS OF ANTI-POLLUTION REGULATIONS AT SEA (2000)
- No. 79 TRANSPORT SECTOR INVESTMENT DECISION-MAKING IN THE BALTIC SEA REGION (2000)

- No. 80 INTERCOMPARISON OF SEDIMENT SAMPLING DEVICES USING ARTIFICIAL RADIONUCLIDES IN BALTIC SEA SEDIMENTS - THE MOSSIE REPORT - (2000)
- No. 81 SECOND ICES/HELCOM WORKSHOP ON QUALITY ASSURANCE OF CHEMICAL ANALYTICAL PROCEDURES FOR THE COMBINE AND PLC-4 PROGRAMMES
21-23 October 1999, Helsinki, Finland
(2000)
- No. 82A ENVIRONMENT OF THE BALTIC SEA AREA, 1994-1998 (Executive Summary)
(2001)
- No. 82B ENVIRONMENT OF THE BALTIC SEA AREA, 1994-1998 (Background Document)
(2002)
- No. 83 THEMATIC REPORTS ON HELCOM PITF REGIONAL WORKSHOPS HELD IN THE BALTIC REPUBLICS
Riga, Latvia, 24-25 May 2000; Vilnius, Lithuania, 26-27 October 2000;
Tallinn, Estonia, 1-2 March 2000
(2001)
- No. 84 ACTIVITIES 2001 OVERVIEW
(2002)*
- No. 85 RADIOACTIVITY IN THE BALTIC SEA 1992-1998
(2003)**
- No. 86 PROCEEDINGS OF THE JOINT IMO/HELCOM/EU WORKSHOP
“ENVIRONMENTAL IMPACTS DUE TO THE INCREASED DENSITY OF SHIPPING IN THE BALTIC SEA AREA – COPENHAGEN PLUS 1”
Rostock-Warnemünde, Germany, 11-12 March 2003
(2003)***
- No. 87 BALTIC MARINE ENVIRONMENT 1999-2002
(2003)**

*) *out of print*

**) *in print*

***) *available only in electronic form on the HELCOM web-site*