



INTERNATIONAL
COOPERATION

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Raising environmental awareness in the Baltic Sea area



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

This revised report (February 2000) is available in the Internet:
http://www.vyh.fi/eng/orginfo/publica/electro/fe_327/fe_327.htm

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ISBN 952-11-0528-3
ISSN 1238-7312

Cover photos: A. Kivrins
Page-layout: DTPage Oy
Printinghouse Karisto, Hämeenlinna, Finland 1999



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Preface

In the 1990s also the Baltic Sea catchment area countries have been undergoing many changes on the political, economic, social and cultural levels. The development of democracy in the previous Eastern Block countries, and the enlargement of the European Union to include Finland and Sweden, have created a new framework for international, regional and subregional cooperation and in the field of environmental awareness. The higher level of environmental awareness in the individual, professional, administrative and political sectors can, through direct and indirect effects, prevent further deteriorating of the Baltic Sea.

This report provides useful background information, findings and action proposals for increasing environmental awareness in the Baltic Sea catchment area. It is intended to stimulate and serve the European Union, the Baltic Marine Environment Protection Commission (HELCOM) and numerous other regional, national, local and sectoral actors in their activities related to environmental awareness and public participation. The methods may also be applied in other multinational regions, such as in the Mediterranean.



Jari Kostet

By increasing environmental awareness in the Baltic Sea catchment area a broader base of support for environmental programmes and sustainable actions can be created. Individuals will be encouraged to make more sustainable choices in their private and working lives, and the demand for environmentally friendly decision-making in political life will grow. All these phenomena will lead to a decrease in the harmful human impacts on the Baltic Sea catchment area and, in consequence, will also improve the state of the Baltic Sea environment.

This project was carried out by the Finnish Environment Institute in cooperation with HELCOM. The project received financial support from the European Union (EU DG XI project B4-3040/97/719/JNB/A4) and the Finnish Ministry of the Environment. The project started on January 1, 1998 under a name "Strategic guidelines for improving public awareness and environmental education in the Baltic Sea area", abbreviated as the "SPA Baltic Sea Project".

The project team consisted of Ms. Marjut Partanen-Hertell, M.Sc. (Eng.), Information Specialist, project leader; Mr. Pekka Harju-Autti, M.Sc. (Eng.), project worker and coordinator; Ms. Katarzyna Kreft-Burman, M.A. (Engl.phil.) and M.Sc.(Pol. Sci.), project assistant (from August, 1998 to May, 1999), and Mr. David Pemberton, B.Sc. (Env. Hl.), project consultant (from January, 1998 to December, 1998).

Several other persons worked for the project: Mr. Kjell Grip, HELCOM; Ms. Minna Hares; Ms. Tanja Tuulinen; Mr. Lars Blomster; Mr. Veikko Katajamäki; Mr. Pekka Naarvala and Mr. Eerik Nikkanen. Many thanks to all of them for their valuable work, and to Ms. Terry Forster (Ministry of the Environment), who kindly reviewed the English language of the report.

The project was supported by an adviser group consisting of Mr. Tapani Kohonen, Executive Secretary, HELCOM, Ms. Elina Rautalahti-Miettinen, Environment Councillor, the Finnish Ministry of Environment and Mr. Pauli Kleemola, Head of Director's Office, Finnish Environment Institute.

During the recent years, Finland has been the Lead Country of the Public awareness and environmental education element of the Baltic Sea Joint Comprehensive Environmental Action Plan coordinated by HELCOM. Ms. Partanen-Hertell has acted as chairman of the HELCOM PITF Working Group on Public Awareness and Environmental Education. Mr. Harju-Autti has acted as the representative of the SPA Baltic Sea Project in the working group. The project has been given a status of priority project no 1 in the working group. We thank all the members of the group, who helped by giving useful ideas for proposals for future activities during the project.

The project team would also like to thank all the other contributors to the project, especially the questionnaire respondents who devoted their time and energy to answering the questionnaire, thus providing the necessary information.

We hope that this report will be useful and stimulating for various organizations and other actors in their work for the future environment.

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Summary

Environmental issues – global warming, ozone depletion, loss in biodiversity, the pollution of air and water, etc. – are today at the centre of the world's pressing problems. The growing global concern about the state of the environment is one of the essential prerequisites for sustaining the vital balance of the complex ecosphere. Therefore, raising people's environmental awareness is needed for creating a broader base of support for environmental activities, encouraging individuals to make more sustainable choices in their private life and work, and supporting environmentally friendly decision-making in political life.

Since environmental problems do not respect any borders of the nations, a multinational approach to environmental awareness is essential in regions such as the Baltic Sea catchment area. In this area comprising more than 1.7 million square kilometres and about 85 million inhabitants, there are 14 quite inhomogeneous nations. In some countries people have reached a relatively high level of environmental awareness and environmental technology is well developed. On the other hand, some countries are experiencing a strong transition period – not only in terms of economy and political structures, but in the level of environmental awareness as well. In order to ensure a healthy environment in the Baltic Sea area in the future, specific actions for improving environmental awareness must be proposed. That is the aim of this report.

Actors

There are numerous actors affecting environmental issues in the Baltic Sea

area: international conventions and agreements, ministerial declarations, intergovernmental organizations, financing institutions and assistance agencies, governmental agencies and parliaments, environmental non-governmental organizations (NGOs) and networks, organizations and networks for cooperation between regions and cities, and organizations and networks for business and trade. The importance of the European Union (EU) has increased in the area after the latest enlargement, when Sweden and Finland joined it. Several countries striving for the future EU membership are in process of harmonising their laws and practices with EU standards. The harmonisation process has also to some extent improved development of environmental awareness in the potential accession countries.

Many of the actors and agreements are affected by the recent political and economic changes. One of the most actual current developments in the Baltic Sea area is the introduction of the "Northern Dimension" in the EU. This initiative is likely to concentrate more political and economic efforts also around the Baltic Sea and contribute to cooperation between the EU and Russia in the future.

Model of environmental awareness

A model illustrating the development of environmental awareness was created in this project. It can be used for analysing the awareness of individuals, professional groups, organizations and even entire societies. In this model environmental awareness is defined as a combination of motivation, know-

ledge and skills. The high level of awareness enables individuals to make conscious choices for acting in an environmentally friendly way.

Environmental awareness influences several spheres of an individual's life. In different spheres of life – private, working and political – the roles and the extent of environmentally friendly practices of a person can vary noticeably. For example, in work a person may think and act differently than in a sphere of family-life. Therefore, environmental information has different target audiences: 1) the general public, which is often passive as a recipient; 2) professionals, who are often motivated to actively seek the relevant information needed for their work; 3) politicians, who need refined information as a raw material for their proposals and as a basis for political decisions.

Environmental awareness starts to develop when people notice that unfavourable, threatening changes in the environment emerge, and that the effects of these cannot be corrected easily. In the first stage of environmental awareness, the motivation for increasing the level of knowledge and skills is often based on a growing concern over threats to health. People's knowledge about the state of the environment in their surroundings is limited. They do not realise what kind of effect their personal choices and actions have on the environment and they feel that some others should take care for it.

In the second stage, the decision-makers on all society levels realize more and more that it is possible for them to influence the state of the environment. This fact increases their feelings of responsibility and their motivation to take action, although the hope for external help is still rather strong. External stimulus or even pressure often seem to speed up advantageous changes. Environmental awareness begins to alter its special separate character and becomes gradually a more natural part of professional and public awareness.



Katarzyna Kret-Burman

In the third stage, a holistic view, a recognition of and a responsibility for the environment are crossing the professional, sectoral and national borders. It is understood that the development of a welfare society depends on the state of the environment – the deterioration of the environment would have too high a cost for the society. As a result, legislation and administration, monitoring and facilities for environmental purposes are well developed and under a process of dynamic change and integration. Since environmental problems are perceived globally, the need to support other countries in environmental activities

becomes essential. Environmental matters gradually become part of professional, political and public awareness. The environmental awareness and concern is also increasingly socially expected from an individual as constituting an essential aspect of his/her personality.

In the fourth stage, environmental awareness becomes an integral part of professional skills and everyday life choices. The values of individuals or the society are no longer based on growing consumption of natural resources, but they are aiming at the general well-being of individuals. The interdependencies within the ecosphere are realized and the environment is not perceived from a human-centric point of view anymore. Life becomes truly sustainable, and mankind is realised to belong to the ecological entirety. At present the characteristics of the fourth stage can be seen only in some rare individuals and perhaps within some organizations.

The clear similarities between certain countries of the Baltic Sea catchment area facilitated dividing the area into three subregions: Subregion 1 = Russia, Belarus and Ukraine; Subre-

gion 2 = Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia; Subregion 3 = Denmark, Finland, Germany, Norway and Sweden. The countries included under subregion 1 mostly show the characteristics of the first stage of environmental awareness. The countries in subregion 2 are mostly reflecting the second stage, whereas the countries of subregion 3 are often characterized by the features of the third stage.

Questionnaire

Since the countries of the Baltic Sea area are in different stages of environmental awareness, the already existing and potential demand for environmental information, education and training varies considerably both in quantity and quality. In order to understand deeper these matters, a questionnaire was sent to 850 key persons representing various professional groups in the whole area.

The respondents were asked for their opinions on the state of the environment and on several different fac-



Katarzyna Kref-Burman

tors affecting environmental awareness. Noticeable differences were found in the opinions about the current state of the environment between the three subregions. It was considered to be the best in subregion 3. In subregions 2 and 3, the state of the environment is believed to be gradually improving. The respondents were also asked about their opinion on some opportunities to act in an environmentally friendly manner and on the level of environmental awareness. The above-mentioned environmental awareness model was supported by the answers given to these questions.

The questionnaire was also pointed to the factors that encourage economy towards environmentally sustainable practices. In subregion 1 and 2, effective supervision of laws and financial subsidies for environmental investors were found to be the most important factors. In subregion 2, the international influence was emphasized as well. In subregion 3 higher prices for harmful products were favoured most, as well as individual decisions and actions.

The respondents also gave their opinions about the factors that increase the need of environmental information in their field of work. The most important factors were cooperation with the

EU and staying professionally up-to-date. Other international cooperation, saving resources, legislative changes, health reasons, policy changes and customers demand are, in this order, the next important factors. When comparing the questionnaire answers regarding the factors that increase the need of environmental information between different subregions, some clear distinctions can be made, see the table below.

According to the respondents of the whole area the most important reasons decreasing the ability or motivation to use more environmental information in their field of work are disharmonious legislation, information overload – that might be combined with too many things to cope with – and bureaucracy.

Raising environmental awareness in the local level requires the development of civil society and democracy as well as active local actors, including municipalities. Such actors should be able to define their positions, and to make independent decisions based on their own understanding of the issues and the local reality. Local actors have a need to create international networks and cooperation in environmental matters, which also increases the local environmental awareness.

Subregion 1	Subregion 2	Subregion 3
<i>Staying professionally up-to-date and the EU-cooperation are the most important factors</i>	<i>Staying professionally up-to-date and the EU-cooperation are the most important factors.</i> The value of the EU cooperation	<i>Staying professionally up-to-date and the EU-cooperation are the most important factors.</i>
<i>Health reasons are considered as the third important factor, and are more important than in other subregions.</i>	is very strong, probably due to the application for the EU membership.	<i>Saving resources is the third important factor, and far more remarkable than in other subregions.</i>
<i>Change of management or ownership is ranked higher than in other subregions – probably because of strong structural changes both in private and public sectors.</i>	<i>Legislative changes are considered to be the third important factor – probably because the legislation has been changing rapidly due to the EU harmonisation.</i>	<i>Customers demand is much higher than in other subregions – probably because the market economy with active consumer and customer pressure is well developed.</i>

Backbone information

Experts, professional groups, politicians and interest organizations around the Baltic Sea should have access to the fresh, high-quality information increasing environmental awareness. This so-called backbone information could embrace the following issues:

- the state of the environment as such and compared to other areas, including the abilities to foresee the changes in it, and actual issues such as algae blooms, accidental oil spills etc.
- the dynamics of ecosystems and the effects of the environmental changes to human activities
- legislation, administrative activities, policy changes, international treaties
- technical and scientific issues, including sustainable agriculture, energy, fishery, forestry, industry, tourism, transport, spatial planning and environmental restoration - with links to practical interests, and related themes like public awareness and education
- national and international environmental initiatives and studies in particular fields of work
- local, national and international examples of projects
- possibilities for financing and cooperation in project design and implementation
- lists of possible partners in various fields
- future developments, early signals of change in environmental matters.

In general, the backbone information would serve the target groups like professionals and other decision-makers in the Baltic Sea area by creating a basis for understanding environmental issues and functioning as a tool which enables searching, comprehending and utilising new infor-

mation. In addition, the backbone information would improve possibilities to establish projects and initiatives which include elements of environmental information, education and training.

Channels of information

According to the questionnaire, the most important channels of information in respondents' field of work are:

- influential colleagues through personal communication: speeches, discussions, communication via various technical channels
- professional magazines, bulletins and mailing lists
- visits and excursions
- the Internet.

The information is valued when it is authorised by the professional context and adjusted to address the specific needs of the group in question. Each professional group, however, tends to favour some particular channels and forms of information which are important to use while addressing this group:

Administration: Conferences, professional publications, scientific and legislative channels

Academic researchers & teachers: Other researchers, professional publications and seminars

Schoolteachers: Direct personal experience: visits, excursions, personal contacts; professional training, newspapers, magazines

Business: Colleagues, personal communication, newspapers and professional publications, visits

Journalists: Independent information from many channels, the Internet

Farmers: Newspapers, magazines, concrete models, field advisors, handbooks, farmers' unions

Politicians: Direct contacts with interest groups, administration and researchers; newspapers, magazines

International organizations: The Internet, other international organisations, news agencies, international media

Non-governmental organizations (NGOs): Colleagues, professional events, publications, newspapers, magazines, the Internet.

Proposals

Based on the findings of the project, the proposals for improving environmental awareness were created for different action levels. These levels are connected to geographical areas – region, subregion, nation, local – or to sectors of society which are presented through different professional groups. Some practical suggestions that have to be taken into account when carrying out these proposals are also given. A summary of the main proposals is presented in a table below.

A concrete case example – using these proposals – was made for Helsinki Commission by formulating the basic recommendations for creating its information and communication policy. The feedback to the project questionnaire supports a broad and comprehensive communication as a future task for HELCOM. In order to be a prominent information provider HELCOM needs to be known, and to have a good credibility and functioning cooperation in the area. Furthermore, it needs a fast and reliable information dissemination and communication system which is based on the role HELCOM has chosen among other information providers.

The information and analysis provided by HELCOM strengthens the political adoption, public acceptance, technical design and evaluation of the means to protect the Baltic Sea.



Matti-Sakari Pitkänen

Therefore, the information and messages of HELCOM should reach widely the whole society: politicians, administrators, researchers, educators, farmers, business and media persons, and people working for NGOs – all of the target audiences having different cultures for receiving information. Regular assessing of the levels of environmental awareness should guide the future work for raising environmental awareness in the Baltic Sea area.

Raising environmental awareness: Summary of proposals

1 Regional action level (The whole Baltic Sea catchment area)

- 1.1 Launching a network of actors for the Baltic Sea environmental information**
 - 1.1.1 Initiative for creating the core of the network; starting meeting
 - 1.1.2 Creating and documenting visions for raising environmental awareness
 - 1.1.3 Recognising and defining the need for the backbone information around the Baltic Sea. Backbone information is the most essential information concerning environmental issues and enabling environmentally friendly actions.
 - 1.1.4 Different actors choosing their roles including the clearing house functions
 - 1.1.5 Inviting other participants to the network; they choose their roles for providing information, including adaptation to local languages and conditions
- 1.2 Information on the application of Århus Convention available; making available information that is public in accordance with the Convention**
 - 1.2.1 Producing and transmitting information about how to apply Århus Convention
 - 1.2.2 Making continuously available information that is public according to Århus Convention
- 1.3 Developing international measurement methods for assessing the level of environmental awareness; making assessments in the Baltic Sea area countries**
 - 1.3.1 Development of international indicators and methods for assessing the level of environmental awareness
 - 1.3.2 Carrying out assessments of environmental awareness in the Baltic Sea area countries

2 Subregional action level (Subregion 1 = Russia, Belarus and Ukraine; Subregion 2 = Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia; Subregion 3 = Denmark, Finland, Germany, Norway and Sweden)

- 2.1 Utilising the motivation from applying for EU membership and from other international cooperation in taking part in the work on environmental awareness**
 - 2.1.1 Subregion 1: Cooperation in trade including environmental standards and certificates; Various organizations planning and implementing environmental awareness projects and other initiatives that include environmental awareness elements
 - 2.1.2 Subregion 2: Preparing and harmonizing legislation that defines environmental awareness activities and their responsible actors
 - 2.1.3 Subregion 3: Including criteria for environmental awareness also in financial instruments (Taxis, Phare, etc.), which are targeted to other subregions
- 2.2 Cooperation in environmental awareness issues between different subregions**
 - 2.2.1 Strengthening information exchange concerning environmental awareness issues between national governments
 - 2.2.2 Promoting subregional cooperation in policy development concerning environmental issues

3 National action level

- 3.1 Linking policies and actions in environmental awareness raising in the regional and national levels**
 - 3.1.1 Creating cooperative international environmental awareness actions including different branches and levels of administration; for example through initiatives such as Interreg/EU, Twin City project, Union of Baltic Cities, Transboundary Waters
 - 3.1.2 Promoting international cooperation in environmental awareness actions in projects having strong environmental impacts and public assessment of their effects; for example, the regional gas-grid reconstruction, massive port construction projects and traffic investments
- 3.2 Environmental multi- and bilateral cooperation concentrating on fields of activity that are in need of strongest development; Increasing effect on environmental awareness**
 - 3.2.1 Improving in a cost-effective manner actors capacity and activities in environmental multi- and bilateral co-operation by focussing on the weak points
 - 3.2.2 Spreading environmental information on multi- and bilateral activities to general public
- 3.3 Formulating functional roles of various national and local actors in environmental awareness issues**
 - 3.3.1 Defining responsibilities, tasks and resources of various national and local administration for environmental awareness issues in national legislation and practises
 - 3.3.2 Various non-governmental actors establishing their role and tasks regarding to environmental issues
- 3.4 Improving environmental information production and distribution by local and professional networks (subregion 1)**
 - 3.4.1 Supporting bottom-up and horizontal networks in a local and professional level to improve national coordination in environmental issues (subregion 1)
- 3.5 Increasing environmental awareness among the key administrative and political decision-makers**
 - 3.5.1 Training key administrators and politicians to apply environmental thinking and facts within their own field
 - 3.5.2 Editing and delivering actual environmental information to key administrators and politicians
 - 3.5.3 Providing information support to key administrators and politicians concerning the cooperation and communication with other actors of the society (subregions 1 and 2)
- 3.6 Strengthening of the electronic distribution of environmental information**
 - 3.6.1 Supporting competent distributors in the field of electronic environmental information and communication
 - 3.6.2 Promoting electronic channels in information policies of organizations
- 3.7 Technical infrastructures enabling wide spreading of environmental information for professionals and for libraries (subregions 1 and 2)**
 - 3.7.1 Creating a secondhand computers recycling/transport system from subregion 3 to subregion 1
 - 3.7.2 Supporting purchases of equipment for electronic communication in public libraries

4 Local and municipal action level

4.1 Linking main environmental objectives, partners and possible measures of local actors, including municipalities

4.1.1 Organising meetings, seminars, working groups for local actors concerning environmental issues

4.1.2 Supporting decision-making regarding environmental issues by the local actors

4.2 Improving motivation and skills of individuals to adopt environmentally friendly behaviour

4.2.1 Dissemination of concrete information and positive examples of local environmentally friendly behaviour

4.2.2 Providing better facilities for individuals to act environmentally friendly

4.3 Active public participation in local decision-making

4.3.1 Arranging hearings, delivering material about issues under preparation early, transparently and widely

4.4 Promoting transboundary local cooperation

4.4.1 Promoting cooperation between local actors and communities in international activities where they have common interests

5 Key professional target group level

Administration

5.1.1 Providing education and training for applying environmental thinking and facts within administrators own expertise

5.2.1 Providing support concerning the means for cooperation and communication with other actors of the society

Agriculture/farming

5.3.1 Assessing the need for environmental field advisers; Establishing field adviser services

5.3.2 Creating networks of farmers practising sustainable agriculture

5.3.3 Production of short training courses and manuals for applying sustainable agricultural practises for farmers

5.4.1 Promoting ecological farming, including finding good means to distribute the products in delivery channels

Business and industry

5.5.1 Supporting environmental education attached to establishing environmental management systems

5.5.2 Designing and implementing training for company environmental policies and programmes

5.5.3 Evaluating the need for environmental training for business organizations in the CEE countries

5.6.1 Promotion of business environmental networking

5.6.2 Distributing examples of success stories in combining environmental and business performance through printed material, the media, seminars, the Internet

Consumer issues

5.7.1 Promoting attaching environmental information to products

5.8.1 Promoting eco-labelling and certification of products and processes

5.9.1 Supporting establishing new consumer organizations (subregions 1 and 2) and promoting the existing ones in environmental issues

Education and research

5.10.1 Sustainable management training for directors of **kindergartens**; providing facilities for environmentally friendly behaviour

5.10.2 Promoting special kindergartens with environmental programmes

5.10.3 Study on possible cooperation of kindergartens in the regional level

5.10.4 Creation of ready-made simple environmental education material for kindergartens, using local examples and languages

5.11.1 Dissemination of ready-made environmental education curricula for **schoolteachers**, assistance in making curricula examples

5.11.2 Promoting special schools with environmental programmes

5.11.3 Spreading already existing experience and expertise from special schools with environmental programmes to other schools for their sustainable school management; providing facilities for environmentally friendly behaviour

5.11.4 Preparation of packages of general environmental material for schoolteachers in the regional level

5.11.5 Adapting the packages of environmental education material to local conditions and translating to local languages

5.11.6 Promoting networks on environmental cooperation between schools, homes, NGOs and municipalities

5.12.1 Preparation of environmental education curricula for teachers at **universities** and in other public education institutes for adults

5.12.2 Preparation of packages of general environmental material for teachers and researchers in the regional level

5.12.3 Adapting packages of environmental education material to more specific local or professional conditions and translating to local languages

5.12.4 Environmental training of teachers and researchers at universities, in other public education institutes for adults and research/development institutes; support to manage institutes in a sustainable way; providing facilities for environmentally friendly behaviour

International organizations

5.13.1 Creation of information policies/strategies including environmental information for international organizations

The Media

5.14.1 Educating key environmental journalists to combine environmental issues with other topics, and economic, international, political, etc. journalists vice versa.

5.14.2 Targeted training of key journalists by professional exchange and short training courses; promoting environmental journalists networking

5.15.1 Evaluating needs for environmental documents, videos and other material

5.15.2 Organising exchange of environmental documents and programmes by creating a network of parties interested; exchanging/providing environmental documents, videos and other programmes in the Baltic Sea area

5.16.1 Supporting coproduction teams between different TV and radio stations, newspapers and magazines in planning, preparing, and distributing high quality environmental information in the Baltic Sea area.

Non-governmental organizations (NGOs)

5.17.1 Developing a practical access for NGOs to the resources and financial support – a new policy and fast procedures for handling small NGO project proposals and reporting within the EU and national frameworks



Introduction



The overall objective of this report is to provide ideas and suggestions for increasing environmental awareness in the Baltic Sea catchment area, with the aim of creating a broader base of support for environmental programmes and sustainable actions. The harmful human impacts on the catchment area can be decreased by encouraging individuals to make choices based on the principle of sustainable development in their private life and at work, and by promoting environmentally friendly decision-making in the political arena. This, in consequence, will have a positive effect on the state of the Baltic Sea

environment. These activities are well in line with the principle of sustainable development.

In the Baltic Sea catchment area, comprising more than 1.7 million square kilometres and over 85 million inhabitants, the level of environmental awareness varies noticeably from country to country. There are areas where environmental awareness along with environmental technology is relatively well developed, whereas in other areas there is still a big need for improvement. People living around the Baltic Sea already have environmental awareness, but this awareness needs to be reinforced and



Stephen F. Lintner

nurtured to develop further. One of the means to raise the level of environmental awareness is through environmental education and training, which may help enhance the ability of the public to act for a better environment.

The project results are largely based on data gathered from a questionnaire, which was sent to about 850 selected key persons in the Baltic Sea catchment area. The respondent groups consist of academic researchers and university teachers, schoolteachers, business people, politicians, national and local administrators, environmental non-governmental organizations, journalists, farmers, consumers and representatives of international organizations in all the 14 countries of the Baltic Sea catchment area. The respondents were requested to present their views on several issues regarding spreading of information in their field of work and on several issues related to environmental awareness in their country and in their field of work by answering multiple choice and open questions. Of the 850 questionnaires sent out, 138 responses were returned and analysed. After the statistical analysis, 10 more responses were received, of which the responses to the open questions were also included in the analysis. The total of 148 responses is considered to be a good result, taking into account the length of the questionnaire (10 pages in English).

On the basis of the questionnaire responses and other material, draft results were produced by the project working group. The results were further elaborated during an international workshop held on November 16-17, 1998, in Helsinki.

Although the 14 countries of the Baltic Sea catchment area exhibited clear similarities, there were also marked differences and widely differentiated needs and abilities. This was kept in mind when proposing actions for:

- the whole catchment area,
- the three subregions of the catchment area, which include the following countries:



Dag-Uwe Holtz

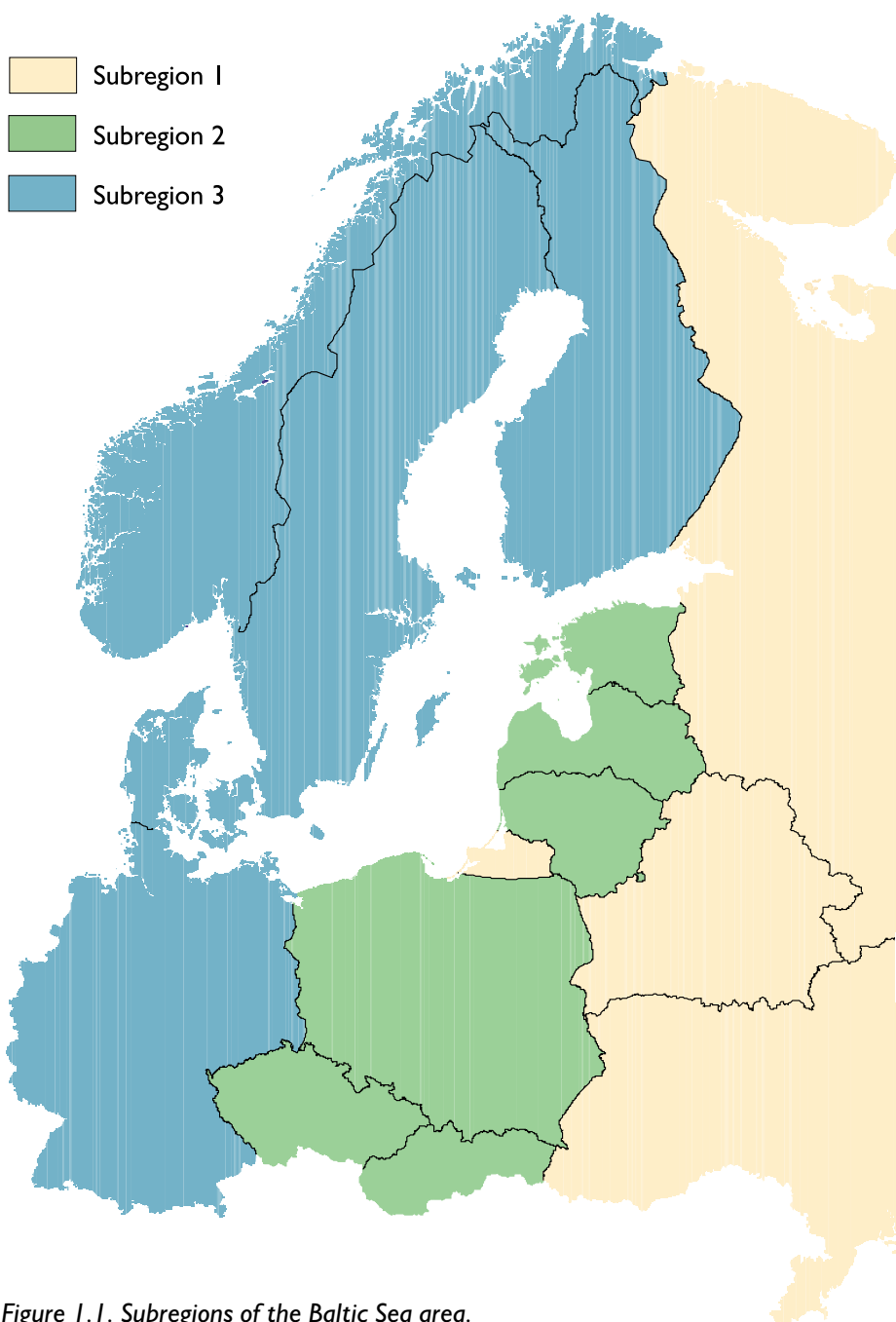


Figure 1.1. Subregions of the Baltic Sea area.



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Subregion 1 = Russia, Belarus and Ukraine;
Subregion 2 = Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia;
Subregion 3 = Denmark, Finland, Germany, Norway and Sweden (see Fig. 1.1).

In case of Russia we mean the area covered by the city of Saint Petersburg, the Leningrad Oblast, Karelia and Kaliningrad; that is the part of Russia situated in the Baltic Sea catchment area,

- national purposes,
- local and municipal purposes
- professional/occupational groups.

As regards to the project questionnaire, 12.3 percent of the answers came from subregion 1, 49.3 percent from subregion 2, and 38.4 percent from subregion 3. In the questionnaire the multiple choice questions were answered within a scale from 1 to 5; number one meaning “not at all”, 2 = “not very much”, 3 = “to some extent”, 4 = “quite much” and 5 = “very much”. Respondents had also the possibility to answer “cannot say” (= 0). This report presents the most important results from the answers of the questionnaire. A more detailed analysis can be found in an additional report “Analysis of the questionnaire on environmental awareness in the Baltic Sea area”.¹

After analysing the responses to the questionnaire, the project team decided to use the above-mentioned geographical and professional categories. There are also certain institutional and political reasons that make it favourable to use such categories. Moreover, key professional/occupational groups and interest groups within the area are in many ways more homogenous than the subregions, nations or local communities. As their interests, needs and abilities are clearly distinctive, it is essential to take their special qualities into account.

As part of the project The Baltic Marine Environment Protection Commission (HELCOM) was analysed as an information producer and distributor more closely. Therefore, another questionnaire was sent to HELCOM contact persons throughout the drainage area and also to HELCOM secretariat. This concentrated on the information issues of HELCOM. The responses helped to design a basis for the HELCOM communication policy as a case study.

The report suggests answers to the following questions: What can the countries in the Baltic Sea catchment area, the EU, HELCOM, and other actors do in order to increase environmental awareness among the public and professional groups in this area? What is the importance of the different means of disseminating information (newspapers, television, seminars, discussions, the Internet, etc.) in different areas and within various target groups? How could the main actors in this area disseminate environmental information and communicate more effectively?

The project results are intended to serve several possible institutional frameworks. This is in line with the complex mosaic structure of the various cultures, languages, professional groups, and with the socio-economic conditions as well as the cross-over of organizations in the catchment area.

Matti-Sakari Pitkänen



2

Concept of environmental awareness and its relation to the Baltic Sea area

Environmental policy instruments – economic means, regulation and information – have impacts on various functions of the society causing environmental, economic, administrative and other effects (see Fig. 2.1). The dissemination of information serves as an instrument to increase people’s environmental awareness, which in turn has a positive effect on the state of the environment.

2.1 The concept of environmental awareness

In this report **environmental awareness is defined as a combination of motivation, knowledge and skills** (see Fig. 2.2). The high level of environmental awareness enables conscious choices for acting in an environmentally friendly way. Having resources available may enhance an individual’s ability to act. On the other hand, a lack of resources does not hinder using effective low-cost and no-cost sustainable methods and actions.

When the environmental awareness of an individual is combined with external stimulating physical and practical conditions, the result can be a **desire and will to make environmentally friendly choices** (see Fig. 2.3). Based on the individual’s **knowledge and skills**, and according to the existing **opportunities to act**, this desire may take the form of **environmentally friendly actions and choices** in the individual’s private and professional life, or show through environmental political choices. This, in turn, will improve the state of the environment directly or indirectly.

Two different approaches are possible **while measuring and analysing environmental awareness in an individual**, a group or a society. One is based on investigating the three elements of environmental awareness – motivation, knowledge and skills – by interviews, questionnaires and tests among individuals, organizations’ staff or the public at large (see Fig. 2.2). The other concentrates on measuring concrete environmentally friendly choices,

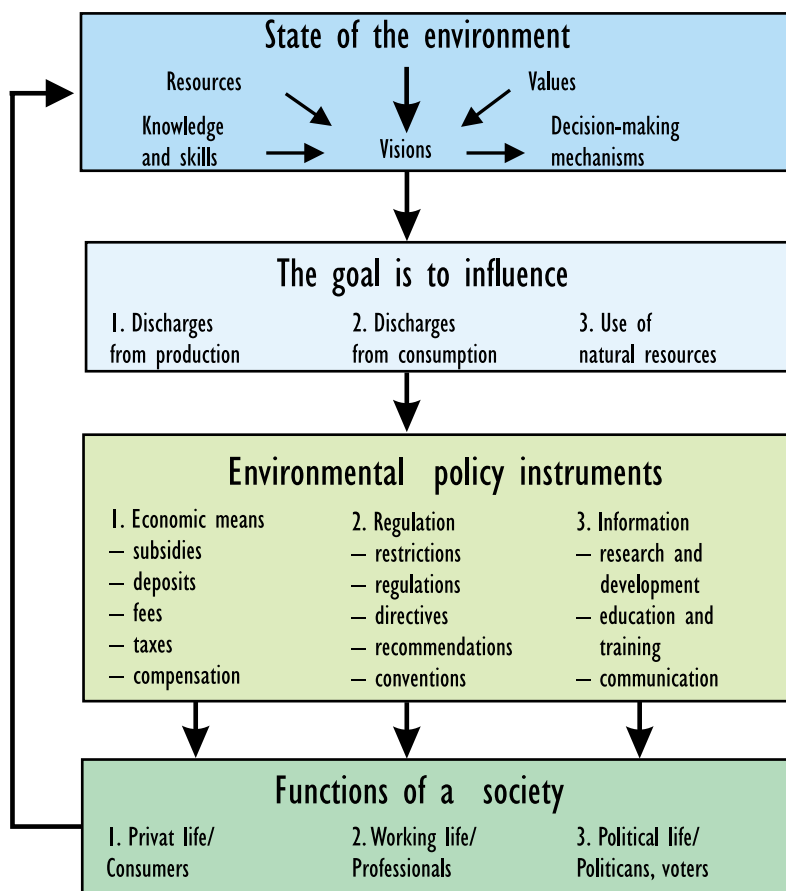


Figure 2.1. The role of environmental policy instruments in a society.

actions and practices of individuals, groups, organizations, or the society as a whole (see Fig. 2.3). For instance, it is possible to measure the use of waste recycling facilities, environmental management practices in businesses, or resources that the societies allocate to environmental matters.

It has to be stressed that environmental awareness influences several spheres of an individual's life. In different spheres of life – in private, working and political life (see Fig. 2.4) – the roles and the extent of environmentally friendly practises of a person can vary noticeably. For example, a person who is a decision-maker in working life may think and act differently in a sphere of family-life. The level of individual's **public** environmental awareness affects the choices in private life. **Professional** environmental awareness exerts an impact on the actions in working life, and **political** environmental awareness has an influence on voting and political behaviour. Therefore, **environmental information** has different target audiences: 1) the general public, which is often passive as a recipient; 2) professionals, who are often motivated to actively seek out the relevant environmental information needed for their work; 3) politicians, who need refined information as raw material for their proposals and as a basis for their decisions.

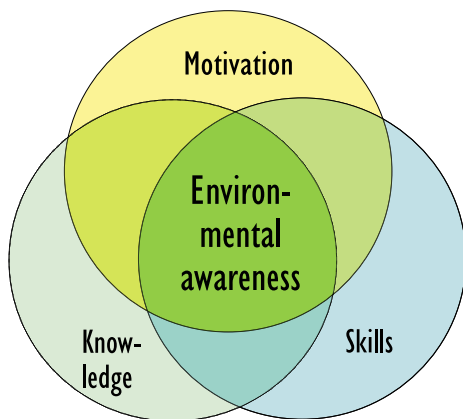


Figure 2.2. The three elements of environmental awareness.

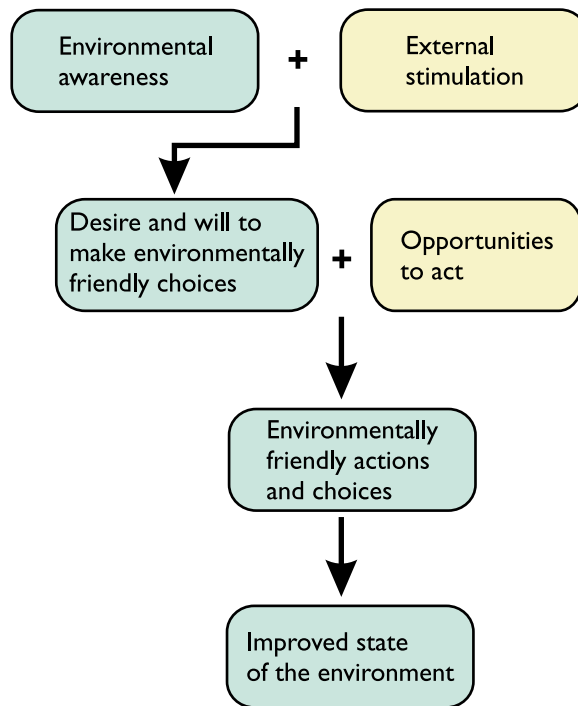


Figure 2.3. Environmental awareness in practice.

2.2 The stages of environmental awareness

A model illustrating the development of environmental awareness was created in this project (see Fig. 2.5). The creation of the model was supported by the answers given to the project questionnaire from the three subregions. The model can be used for analysing environmental awareness of individuals, professional groups, organizations and even entire societies. The model is applicable in societies which in principle function in a democratic way, and where citizens can take responsibility for common matters. Additionally, the values of such societies are today generally based on increasing production, which is assumed to have a positive effect on the improvement of the standard of living.

Environmental awareness starts to develop when people notice that unfavourable, threatening changes in the surroundings emerge, and that the ef-



Figure 2.4. The spheres of environmental awareness in the community.

fects of these cannot be corrected easily. Realization that environmental damages need a long time to recover stimulates the arising environmental awareness further. Before, people often consider themselves the **masters of nature**, which, however, does not exclude such phenomena as protection of specific areas, forests or animals based on the intention of saving nature.

The first stage of environmental awareness

In the first stage of environmental awareness, the **motivation** for increasing the level of knowledge and skills is usually based on a growing **concern over threats to health**. Even though people and organizations think that the state of the environment should be improved, they do not see themselves as ac-

tive actors in this process. They consider usually that **somebody else**, for instance scientists, environmental non-governmental organizations or international organizations should focus on or solve environmental problems. **Environmental matters** are perceived **separately** from other spheres of life and professional activities. Since the possibilities to act environmentally friendly are normally rather limited and environmental information is difficult to get, a feeling of **helplessness** seems to be prevalent.

People's **knowledge** about the state of the environment in their country is limited. For this reason, it is difficult to make comparisons with the situation in other countries or areas, even though there might exist high level theoretical knowledge in some fields of environmental sciences. People do not realize what kind of effect their perso-

nal choices and actions have on the environment. Environmental matters have little to do with general public awareness or professional awareness. The knowledge of environmental matters is generally distributed from top to bottom.

People lack **skills**, such as how to use energy and water efficiently and how to sort out their waste. Although experts have basic – at least theoretical – technical knowledge, for example how to build a wastewater treatment plant, the long term experience and skills to manage it are often weak. Development of environmental monitoring is in the early stage. Environmental facilities and systems, for example, taking care of waste are still underdeveloped.

The above-mentioned aspects regarding motivation, knowledge and skills **generate a need for a special kind of environmental information**. Such information focuses on the state of the environment, health risks, technical and management skills, as well as public basic skills for sustainable behaviour. Information from international sources might effectively satisfy this need for information.

In countries where environmental awareness is close to stage one, the first step to raise the level of environmental awareness is to **educate and train the most influential politicians, administrators, academics and business decision-makers**. The goal is to make them understand primary environmental matters in their country including international aspects. Increasing environmental awareness among top decision-makers might create a strong need and motivation to develop legislation or administrative structures concentrating on environmental matters. This could also lead to reorganisation of regulations and economic means (see Fig. 2.1). It should lead to reallocation of resources to improve the state of the environment as well. Environmentally friendly investments might also result in a decreased need

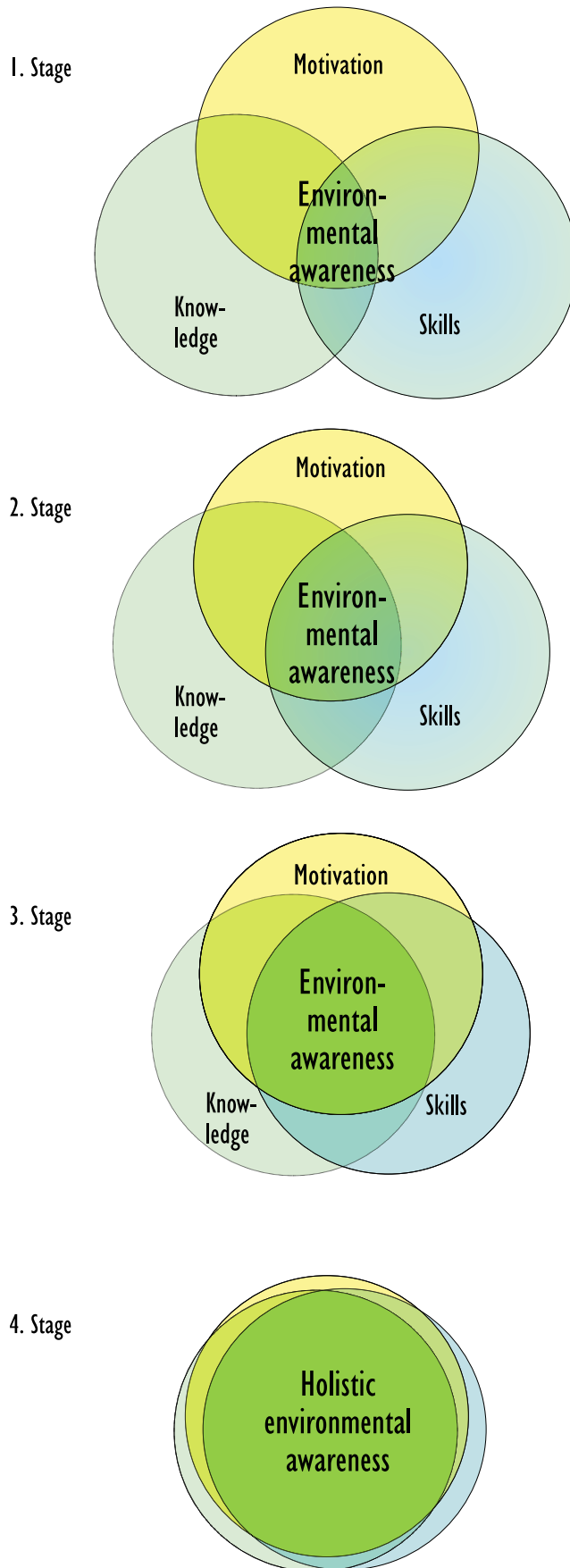


Figure 2.5. The development of environmental awareness.



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for resources in other sectors of the society. For example, some resources in health care could be targeted to precautionary activities which would decrease health risks.

At the same time, it is important to enhance people's motivation by distributing **general information on the state of the environment easy to understand**. It is equally important to provide them with technical tools and educational possibilities enabling them **to act in an environmentally friendly way**. To this end, the activities of various non-governmental organizations and networks are essential. Starting from easy cases bringing positive results quickly is most effective.

The second stage of environmental awareness

In the second stage of environmental awareness, **basic environmental legislation and administrative structures already are functioning in the society**. Also the foundations of environmental monitoring system have been created. Facilities, systems and relevant technologies for pollution prevention are increasingly utilised. Nevertheless, the separate environmental protection measures do not in this stage support each other to have a positive synergy. They do not build up organisational or physical chains, cycles or networks. **The main focus is directed to separate environmental issues**, such as the problems concerning air, water or soil. Environmental issues have not yet be-

come relevant for actors in many areas. However, environmental awareness begins to alter its special separate character and becomes a more natural part of professional and public awareness.

In the second stage the decision-makers on all society levels realize more and more that it is possible for them to influence the state of the environment. This fact increases their feelings of responsibility and their **motivation** to take action, although the hope for external help is still rather strong. International stimulus or even pressure often seems to speed up advantageous changes. The feeling of progress is supported by the concrete positive environmental results. Energy is no more only wasted on worrying but it is growingly used for actions. The overall **knowledge** of environmental matters and of their dynamics becomes wider and deeper. Environmental management **skills** both in private life and in business are growing. International cooperation in environmental matters is emerging both within professional and political life.

In the second stage the demand for knowledge and skills will grow qualitatively and quantitatively. The need for information develops towards relatively sophisticated knowledge and skills in environmental research, technology and management. Also from environmental point of view the understanding of connections between different sectors and fields of society and economic life is growing. This results in the attempts to integrate them.

The activities to raise environmental awareness are targeted to the whole society. They start from the groups that influence most the state of the environment in a given country. Increasing this awareness leads gradually to an improved responsibility for environmental matters in the whole society. It also motivates the public to behave in an environmentally conscious way when making decisions as consumers and voters.

The third stage of environmental awareness

In the third stage, legislation and administration, as well as environmental monitoring and facilities for environmental purposes are well developed and under a process of dynamic change and integration. A **holistic view, recognition of and responsibility for the environment** begins to cross the professional, sectoral and national borders. It becomes clear to the top decision-makers that the development of a welfare society depends on the state of the environment. It is understood that the deterioration of the environment would have too high a cost to the society. Since **environmental problems are perceived globally**, the need to support other countries in environmental activities becomes essential. International environmental commissions are important tools for controlling the deterioration of the environment.

Motivation, knowledge and skills are in a growing synergy when increasing environmental awareness. Environmental matters become more and more part of professional and public awareness. Many environmentally friendly actions are held as a natural part of everyday life. Both private and professional lives are full of possibilities to act in a more sustainable way. On the one hand, in this stage of environmental awareness, a new type of frustration may emerge – on the global level the task is felt to be overwhelming. On the other hand, the growing realization that environmental problems can be overcome gives satisfaction and positive motivation to further develop environmental activities.

In this stage, information demanded concentrates on the changes of the environment and ecological systems on the local and global level. There is a growing need for understanding the ecological dynamics and the impacts of private, professional and political choices on the environment. This is essen-

tial when the focus moves from curative to preventive measures. Also understanding the emerging risks for the environment and impacts of new technologies and innovations are important. The actors exchange information and experience from their own fields and are, therefore, learning from each other. Sophisticated interactions and networks develop to bind up various actors and activities which influence the environment.

Raising environmental awareness supports the development towards sustainability. The driving force of the society changes from the growing production and economy towards a steady sustainable welfare. The aim is also to integrate the environmental awareness as an inseparable part of the general awareness of an individual.

The fourth stage of environmental awareness

In the fourth stage, environmental awareness becomes an integral part of professional skills and everyday life choices. Motivation, knowledge and skills build up an environmental awareness that has developed to a **holistic environmental awareness**. The environment is not perceived from a human-centric point of view anymore, but it also is realized to have value as such. Therefore, the environment is no longer considered to “belong to mankind”, which in the earlier stages resulted in an excessive consumption of natural

resources. The values of individuals and the society are no more based on growing consumption, but they are aiming at the general well-being and happiness of individuals. In this stage, life becomes truly sustainable, and mankind is realized to belong to the ecological entirety. At present the characteristics of the fourth stage can be seen in some rare individuals and perhaps within some organizations, but it is questionable if they can ever be totally achieved in a whole society.

2.3 Subregions of the Baltic Sea area

As mentioned in the introduction, the clear similarities between certain countries of the Baltic Sea catchment area facilitated dividing the area into three subregions (see Fig. 1.1). In these subregions the growth of environmental awareness is partly activated by the same international processes which have a profound impact on all of them (see Fig. 2.3).

Within the context of this project, the countries included under subregion 1 mostly show the characteristics of the first stage of environmental awareness process. The countries in subregion 2 are often characterized by the traits of the second stage, whereas the situation in countries of subregion 3 mostly reflect the features of the third stage.

The characteristics of the Baltic Sea marine environment

3

The Baltic Sea is one of the major brackish water basins of the world. It is almost entirely **cut off from the open Atlantic ocean**. The only connections to more open sea areas are through Danish Straits, for example the Sound (Öresund) and the Belts. It is here where the water exchange to and from the Baltic Sea takes place. At the Straits, lower saline and lighter water from the Baltic Sea on its way northwards meets the higher saline, heavier and usually more oxygen-rich water from the North Sea on its way southwards. After passing through the Danish Straits, the higher saline and heavier North Sea water sinks towards the bottom and a distinct water layer. As a result, a **halocline**, is formed between the surface water and the inflowing bottom water. In the Baltic Proper the marked halocline represents an almost impenetrable barrier to vertical mixing; therefore, such mixing does not exist below depths of much more than 60-80 metres. This has far-reaching environmental consequences for the deeper areas of the Baltic Sea.²

The halocline functions like a lid on the Baltic Sea, which means that large deeper areas have very limited **oxygen input** (see Fig. 3.1).² At the same time, deeper waters receive a constant rain of dead sea plankton and other organic matter sinking from surface layers. In the deeper areas of the Baltic Proper, far more oxygen is consumed by the decomposition of this material than is supplied from the surface layers. As long as there is no input from other sources, the result is a **gradual decline in oxygen** in these deep waters. If this process continues so that the oxygen is almost entirely depleted, bacteria will start producing **hydrogen sulphide**,

which is **toxic to animal life** and which transforms the deep bottom areas into lifeless areas.

From time to time, however, water exchange and oxygen input do occur, even under the halocline. It is the inflow of the higher saline and oxygen-rich water through the Danish Straits that replenishes the oxygen supply in

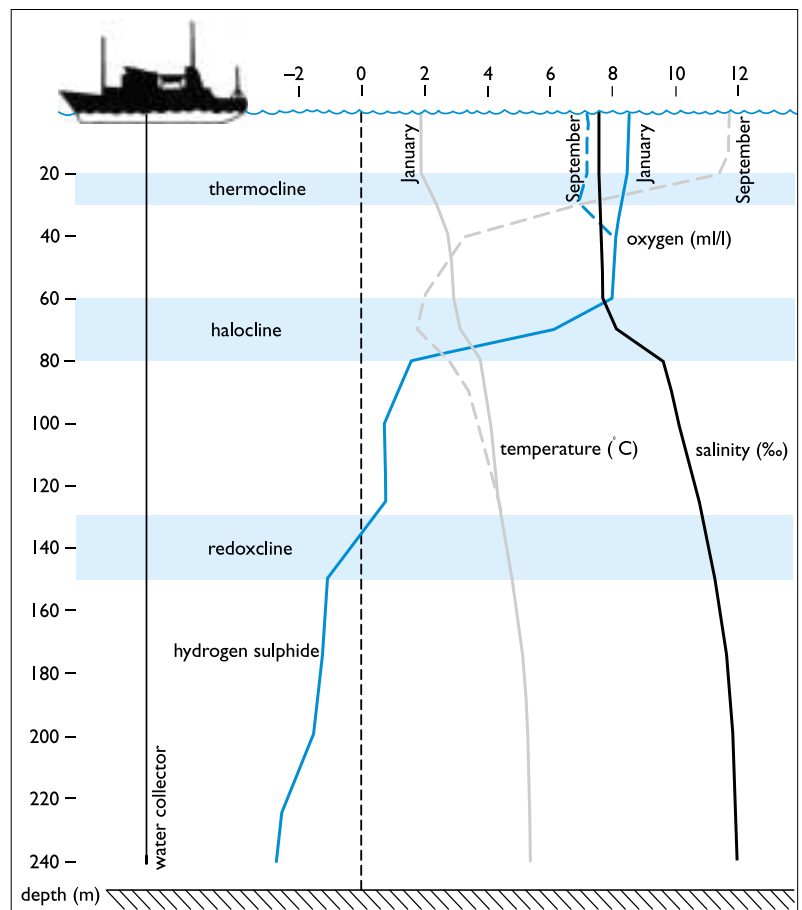


Figure 3.1. Salinity, temperature, oxygen and hydrogen sulphide in the Gotland Deep, 1987.²

Between the surface and the bottom of the Baltic Proper there may be up to three different boundaries in the water. The most permanent is the halocline, which divides the surface water from the lower more saline water. In summer, a thermocline is formed above the halocline, between the upper warm water and the deeper cold water. Below the halocline, a redoxcline sometimes forms, which divides oxygenated water from bottom water that is depleted of oxygen and that contains hydrogen sulphide.



Jari Kosket

deeper waters. Although oxygen depletion and hydrogen sulphide production are natural phenomena in the Baltic, it is quite clear that the **situation has worsened** during this century and that considerably more oxygen is being consumed now than a few decades ago. The principle cause is a substantial increase in the **nutrient load** discharged into the Baltic Sea, which appears to have caused greater plankton growth.

The total flow of water to and from the different subbasins of the Baltic Sea gives an idea of how rapidly water is being turned over, that is, the **turnover time**. For instance, the water in the Gulf of Bothnia has a retention time of around four years, whereas in the Baltic Sea it takes **about 25-35 years** on average for all the water to be exchanged even though the mean depth is only 55 metres.

The flora and fauna of the Baltic Sea are **not rich in species** diversity because brackish water is too saline for most fresh water species, and the salinity is too low for most marine species. The Baltic Sea species are unique and susceptible to changes in their environment.

3.1 Uses and benefits

People have always used the Baltic Sea and its coastal areas as a resource for

different **human activities**. Activities such as fishery, tourism, shipping, industry, urban development, agriculture, forestry, military activities, among others, contribute to the degradation of the Baltic marine environment. These activities cause chemical and biological pollution as well as contribute to siltation, sedimentation and an overload of nutrients in the marine environment. Additionally, these activities lead to physical degradation or destruction of marine habitats and ecosystems.

The Baltic marine environment provides benefits to its users in many ways, which often are disregarded. The **main benefits** are:

- Nutrient recycling. The recycling of nutrients contributes to the removal of nitrogen and phosphorus from the Baltic.
- Waste treatment. The Baltic Sea has a certain capacity for receiving waste discharged in to it.
- Erosion control. Shallow coastal areas protect the hinterland from erosion.
- Climate regulation. The sea helps regulate the climate of the coastal areas.
- Exchange of genetic material. Genetic material from wild fish stocks can be used in the development and application of molecular techniques for the genetic improvement of farm-raised stocks of shellfish and finfish.

The Baltic Sea is a common natural resource for which the riparian states acknowledge a common responsibility, as expressed in the Convention of the Protection of the Marine Environment of the Baltic Sea. This international cooperation between riparian states aims at improving the health state of their common sea. A special Commission – HELCOM – is responsible for the work. Its advisory committees and working groups provide the Commission with relevant background information for making decisions on proposed measures to be taken.

3.2 State of the Baltic Sea marine environment

Both eutrophication and toxic substances are now affecting the entire Baltic Sea ecosystem, even far from land. Organic material from extensive plankton blooms falls down to the sea floor causing oxygen depletion when the material is broken down by bacteria and other organisms. Fish are no longer found in vast sea areas because of the low oxygen levels. In many of these areas oxygen is completely depleted and hydrogen sulphide is being produced instead. Hydrogen sulphide is toxic to animal life and large areas on the bottom now lack the organisms that are important food for fish. In areas where there are still some organisms remaining, there has also been a shift in the species composition of the bottom dwellers.

Filamentous algae are more productive in nutrient-rich water. In many places close to land, they have replaced the bladderwrack or are growing on it, competing for light. The bladderwrack is further stressed by the decreasing clarity of the water resulting from the increased production of plankton. Its lowest growth limit is now three metres higher than it was in the 1940s. Areas where the bladderwrack grows tend to be important spawning and nursery grounds. The number of these areas is now decreasing in many places along the coast of the Baltic proper, and some have even disappeared completely (see Fig. 3.2).³

The intensive efforts to clean up the Baltic Sea have led to improvements in coastal water quality in several coastal areas of countries in transition. Especially the nutrient input from point sources has been reduced and sanitary conditions in coastal waters have been improved. However, there are still reasons for concern. Non-point sources such as agriculture and transport are today major sources of nutrients to the Baltic Sea. Much work and resources as well as time are needed

before more offshore marine areas show overall improvements in water quality.

Besides eutrophication, toxic substances such as heavy metals and organochlorine compounds are also threats to the Baltic Sea environment. The heavy metals of most concern are cadmium, mercury and lead (see Fig. 3.3).³ The simplest way to keep track of heavy metal pollution is to measure the amount of these substances in the sediment. Heavy metal concentration in

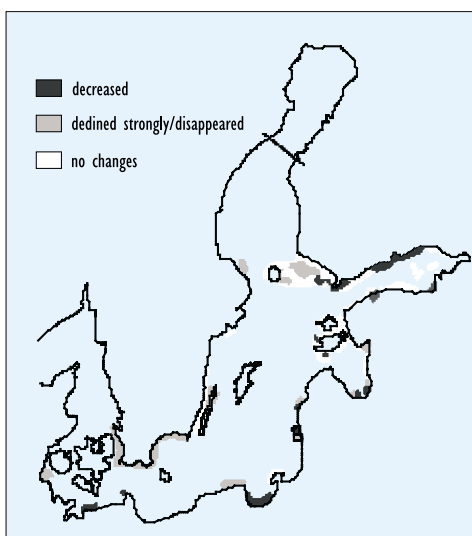


Figure 3.2. Survey of coastal areas where the bladderwrack has disappeared or decreased in amount (dark colours), and where no change (light colour) has been observed.³ Note that the symbols are not in scale and that the mapping does not cover the entire coast line.

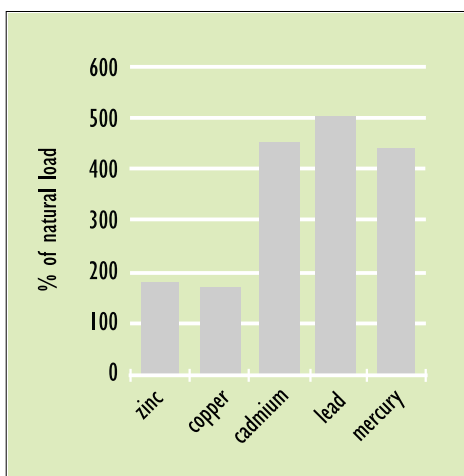


Figure 3.3. Metal load discharge to the Baltic Proper.³

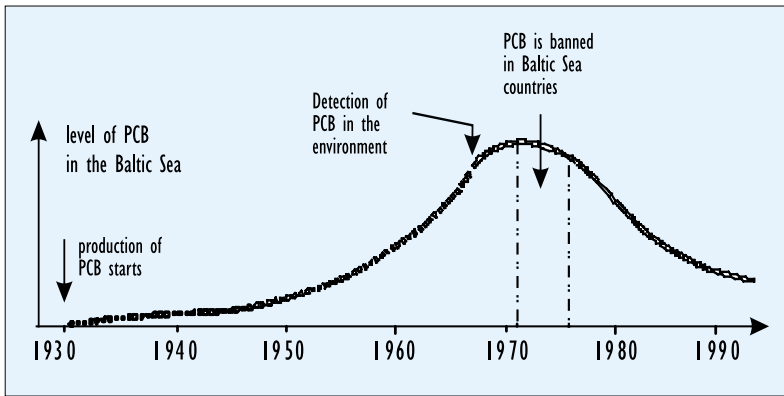


Figure 3.4. PCB levels measured in seals and eagles.³

sediments shows a marked correlation to the organic material present. The top layers of the sediment in the Baltic may contain 10 times more cadmium and mercury than the deeper sediment layers. Heavy metals have not yet been proven to cause detrimental effects in living organisms along the less affected coastal areas and in the open Baltic Sea. Nevertheless, there is cause for concern that they may be a factor contributing to diseases fish (see Fig. 3.2).

Of the many thousands of tonnes of oil reaching the Baltic Sea every year, most does not get there by accident but via the rivers. So far it is unknown whether the concentration of polycyclic

aromatic hydrocarbons in coastal and offshore waters has any adverse impacts on flora and fauna. The accidental and illegal oil spills, however, are still a severe problem.

Persistent organic compounds are not readily degradable and hence are long-lived, which means they can be dispersed over wide areas. Of such substances chlorinated ones are the most problematic. PCB and DDT levels increased in the Baltic Sea fauna in the 1950s and 1960s. Since the 1970s, after international measures to reduce the use of these substances, there has been a decline in their concentrations (see Fig. 3.4).³ However, PCBs are still discharged when products containing PCBs are disposed of in landfills and are incinerated. Seal and eagle are still recovering from the high levels of PCBs and DDTs during the 1960s and 1970s. The recovery rate, however, varies among the three Baltic seal species in different areas of the Baltic Sea.

Cod, herring and sprat are the **dominant commercial fishes** in the Baltic Sea. Since 1990 the number of sprat spawning has significantly increased. Herrings are also more numerous but total population numbers are lower than earlier decades. This situation has led to an increase in the total amount of fish in the Baltic Proper during the 1990s. The cod stock is, however, under the biological safe limit.⁶ Fish yields though are much higher now than during the 1940s (see Fig. 3.5).³ At that time, the Baltic Sea was less eutrophic than today. It seems then that the full effect of eutrophication on the Baltic Sea fish stocks is not evident. Cod reproduction is negatively affected by the lack of oxygen in the deeper waters, and the spawning and nursery grounds of other fish are disappearing because the bladderwrack is dying out. At the same time, however, these same fish are benefiting from the increased biological production in the Sea that provides more food.

Baltic Sea salmon stocks have declined since 1900 because of the ex-



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exploitation of the northern rivers and intensified fishery. Today, only 10-15% of the salmon stock is made up of wild stocks. The remainder is reared in hatcheries. The Baltic Sea wild salmon is an extremely endangered species.⁶

The level of **PCBs in herring** from the Baltic Proper is no longer decreasing. Simultaneously, the lipid level in herring has dropped dramatically in the last 10 years. This indicates that no fat is stored in the muscle of herring, which is a risk to reproduction.

Another problem related to fishery is the **introduction of alien species** in discharges of ballast water and through fish farming. Several alien species are found in the Baltic Sea; in 1990 a new species of goby was discovered in the Bay of Gdansk in Poland. This new species is causing increasing problems for the coastal fishery in the area.

In the majority of the Baltic Sea subareas, that is, areas outside of the Baltic Proper, there is a surplus of **phosphate** relative to **nitrogen**.³ Phosphorus limitation plays an important role in the Bothnia Bay in the western coastal areas of the Gulf of Bothnia and in the Gulf of Riga. The phytoplankton production is mostly nitrogen limited. Pronounced effects of **eutrophication** are most evident in areas near to major local nutrient sources. Agriculture and air emissions from the use of fossil fuel are the largest contributors to the nitrogen load. Urban and industrial sewage is the largest phosphorus source (see Fig. 3.6)³.

There have been intensive blooms of **blue-green algae** in recent years. It has, however, been difficult to determine whether this means that the state of the environment has worsened or that the intensive blooms are related to extreme weather conditions. In recent years, the surface water temperature in August has been several degrees over the mean values.

The **threat to biodiversity** gives cause for concern. More than 65% of all biotopes and biotope complexes of the Baltic Sea are endangered and 15% are

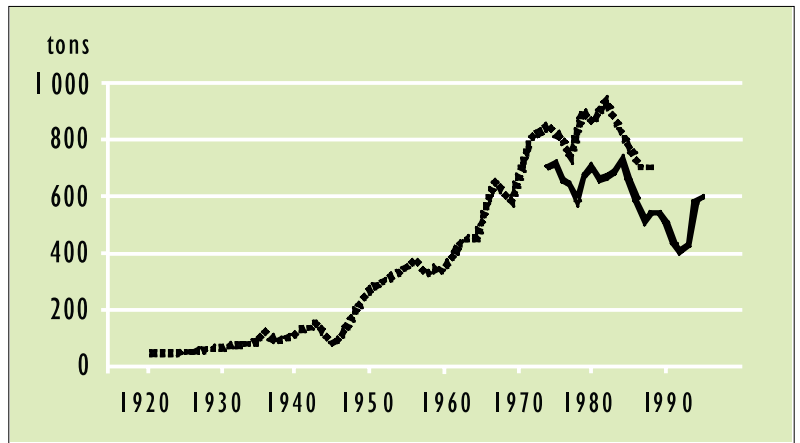


Figure 3.5. Time series of total fish yield of cod, herring and sprat in the Baltic Sea (dotted line) and in the Baltic Proper (filled line).³

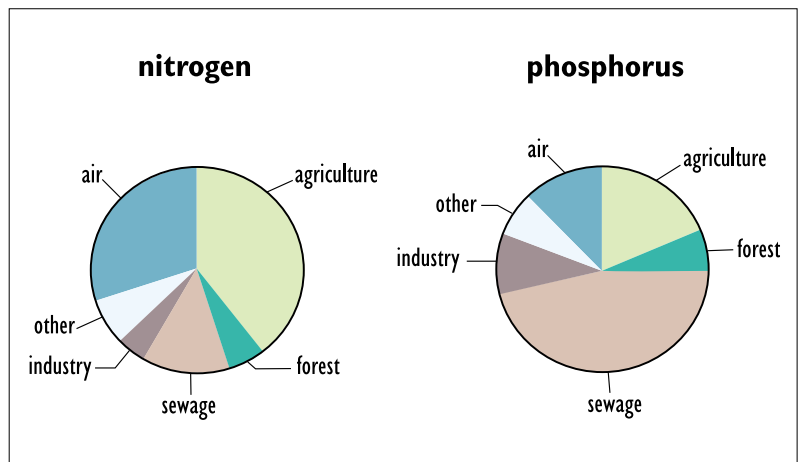


Figure 3.6. Sources of the nitrogen and phosphorus load to the Baltic Sea.³

extremely endangered. The population of the harbour porpoise in the Baltic has drastically decreased and mass mortalities of sea birds still occur as a result of illegal oil spills. This reflects the severe impacts that human activities in and around the Baltic Sea still have on the marine and coastal biodiversity and biotopes. The marine waters are mostly affected by eutrophication, especially the benthic biotopes. Additionally various marine construction activities, dredging and modern fishery can have detrimental effects on different biotopes.⁶

3.3 The future

The state of the Baltic Sea environment during the 1940s can be considered a goal worth aiming at.³ In the 1940s the Baltic was a nutrient-starved sea and the loading of nutrients and hazardous substances too low to be apparent. Also the biodiversity of the Baltic Sea was not threatened at that time.

Today, the main threats to the Baltic Sea are **eutrophication** caused by excess nitrogen and phosphorus and high levels of **toxic substances** such as halogenated hydrocarbons (DDT, PCB, HCB, etc.), heavy metals (mainly cadmium, mercury and lead) and petroleum hydrocarbons (PAH). Other threats to the Baltic marine environment include the use of certain types of fishing gear, habitat destruction and the introduction of alien species.⁴

While it is important to consider threats to the Baltic marine environ-

ment as a whole, the different parts of the Sea also need to be addressed individually. The situations in these areas can vary depending on the local meteorological and hydrological conditions. The limitations and sensitivity of the Baltic Sea marine environment need to be taken into far greater consideration in the future than they are today. The capacities and limitations of all natural systems that society uses have to be recognized and taken into consideration in the daily management of society, including the planning of large-scale projects. Instead of just focussing on marine pollution, or other specific problems, economic, social and demographic aspects and environmental considerations should be **integrated into mainstream policy at every stage**, for instance, in policy identification, policy design, implementation, monitoring and evaluation.^{7,8}



J.V.K.

General characteristics of the countries in the Baltic Sea catchment area

4

Since most of the environmental threats to the Baltic Sea originate from human activities in the catchment area, it is essential to have a general understanding of the countries in the area. The Baltic Sea catchment area includes parts of **fourteen countries** which differ in social, economic and cultural terms: Belarus, the Czech Republic, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland, the Russian Federation, Slovakia, Sweden and Ukraine. In Norway, the Czech Republic and Slovakia there are only small areas that belong to the Baltic Sea drainage area. These countries do not have any coastline on the Baltic Sea and neither does Belarus and Ukraine. The **drainage area** is approximately 1.7 million km² with a **population** of about 85 million people speaking different languages. Population densities vary from over 500 inhabitants/km² in the urban areas of Poland, Germany and Denmark to less than 10 inhabitants/km² in the northern areas of Finland, Sweden and Norway (see Fig. 4.1 and Fig.

4.2).¹² There exists no specific source, where it would be convenient to obtain up-to-date and comparable general information and environmental information covering the whole drainage area and countries in it. Therefore, the following information has been gathered from numerous different sources in order to create an overview of general characteristics of the 14 countries.

The coastal countries of the Baltic Sea are **developed** in regard to industry and agriculture, and it has been said that the sea is unfortunately treated as a huge waste water treatment plant.⁴ Today, the Baltic Sea is among the most **polluted** seas in the world because of the high load of nutrients and toxic substances discharged into it and because of its special characteristics.³

4.1 Physical Geography

For the most part, the Baltic Sea drainage area is a relatively low-lying plain. The **highest elevations** can be found

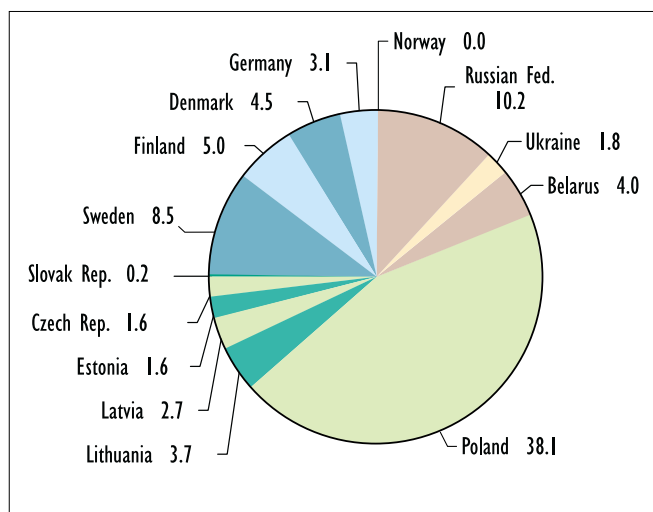


Figure 4.1. Population (millions) in the Baltic Sea catchment area.

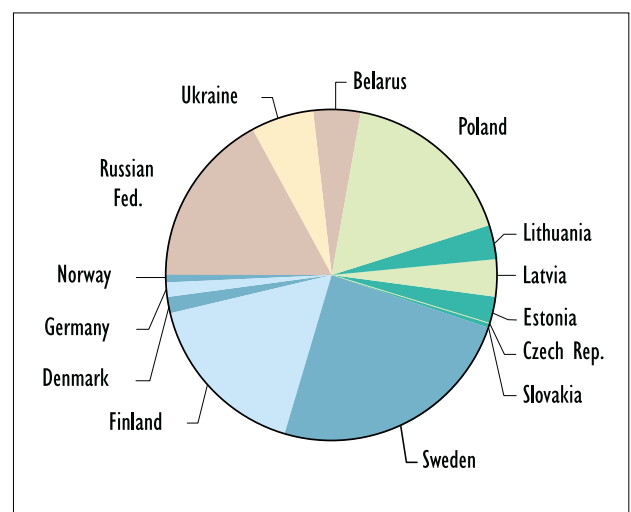


Figure 4.2. Area draining to the Baltic Sea. Total area is approximately 1.7 million km².

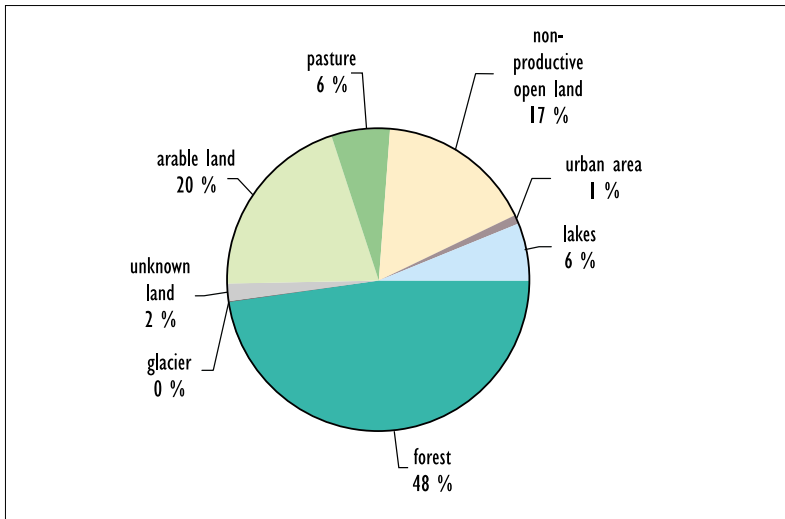


Figure 4.3. Land use types in the Baltic Sea catchment area.

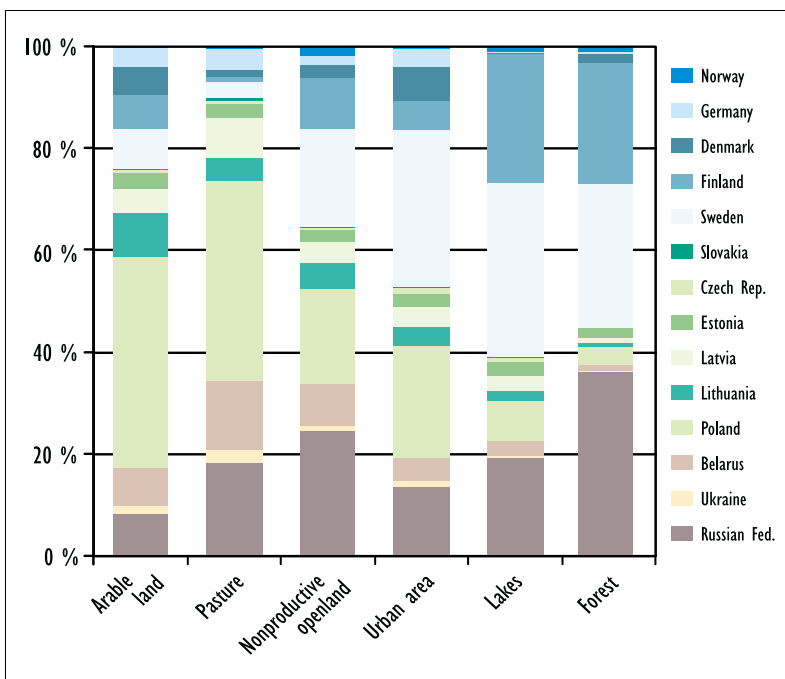


Figure 4.4. Geographical distribution of land use types in the Baltic Sea catchment area.

River	Catchment area x 1000 km ²	Mean discharge m ³ /s	Length km
Neva	272	2488	74
Vistula	194	1081	1047
Oder	119	574	854
Neman	98	664	937
Zapadnaya Dvina	87	633	1020
Kemijoki	51	553	600
Göta älv	50	572	90

Source: The Third Baltic Sea Pollution Load Compilation (PLC-3), No. 70

in north-western Sweden, where the highest peaks rise to over 2,000 metres, and in the western Carpathian mountain range, which rises in the southern part of the drainage area to the highest peak of 2,655 metres. Geologically, the latest ice age formed the topography of the drainage area. The ice sheet rounded the topography and created numerous lakes; while retreating it deposited ridges of rock, gravel and sand.

In terms of **vegetation**, the region belongs mainly to the temperate deciduous forest zone, and the boreal evergreen forest zone around the Gulf of Bothnia. Almost half of the drainage area is covered by forest (see Fig. 4.3 and Fig. 4.4).⁴⁹ Climatically, the area belongs to the west wind zone and the weather is dominated by low atmospheric depression. Mean annual precipitation varies from 481 mm in Falsterbro, Denmark, to 653 mm in Helsinki, Finland. Average yearly temperatures vary from 1.2°C in Haparanda, Sweden, to 8.0°C in Falsterbro.⁹ A noteworthy feature of the Baltic Sea is that it is partially covered by ice during winter, which further worsens the effects of pollution. Almost the whole sea can be covered by ice in a severe winter.

There are **several large rivers** within the Baltic Sea drainage area. The largest river systems (river catchments exceeding 50 000 km²) in the Baltic Sea catchment area are Neva, Vistula, Oder, Neman, Zapadnaya Dvina (Daugava), Kemijoki and Göta Älv.⁴⁸

Lakes are particularly numerous in the northern part of the catchment area. The largest lakes are the lakes Ladoga and Onega in Russia, the lakes Vänern and Vättern in Sweden, the lakes Saimaa and Päijänne in Finland as well as Lake Peipus between Estonia and Russia.

There are several large **islands** in the Baltic Sea: Hiiumaa and Saaremaa (Estonia), Bornholm (Denmark), Gotland and Öland (Sweden), Rügen (Germany) and Åland (an autonomous province of Finland). About 300,000 inhabitants live on these islands and their livelihood depends mainly on the pri-

mary sector.¹⁰ In addition, a noticeable part of Denmark consists of large islands (Sjælland, Lolland, Fyn). In the Baltic Sea there are also numerous smaller islands, particularly close to Finland and Sweden where they form a prominent archipelago. The islands are specially vulnerable to pollution in the sea. Parts of the islands have been protected.¹⁰

4.2 Economy

The living standard varies quite considerably between the countries of the area and, in some cases, even within the countries. A comparison of the Gross Domestic Products (GDP) of the Baltic Sea countries shows that the highest GDP values have been in Norway, Denmark, Sweden, Finland and Germany, whereas the lowest ones have been in Belarus, Lithuania and Ukraine (see Fig 4.5).¹⁴ Furthermore, in Ukraine the GDP real growth rate was negative in 1995 but the situation has lately been improving.¹¹ Note that the figures from the chapter 4.2 to 4.5 are referring to the area of the whole country – not only the catchment area.

Averages of the share of GDP in the Baltic Sea area indicate that agriculture has had only a nine per cent share of GDP; industry 37% and services 54%. The share of agriculture of GDP has been largest in Belarus, Ukraine and Lithuania. In Belarus and Slovakia industry has had almost 50% share of GDP whereas services hold the largest share of GDP in the north-western countries. The private sector has made up only 20% of GDP in Belarus but has been between 50-75% in the other emerging economies of the region.¹¹

The **disintegration of the Soviet Union** had a negative impact on the economies of the countries in its immediate sphere of influence (Belarus, the Czech Republic, Estonia, Latvia, Lithuania, Poland, Russia, Slovakia, Ukraine). To date, the economies in most of these countries have gradually recovered. However, the annual GDP



Stephen F. Lintner

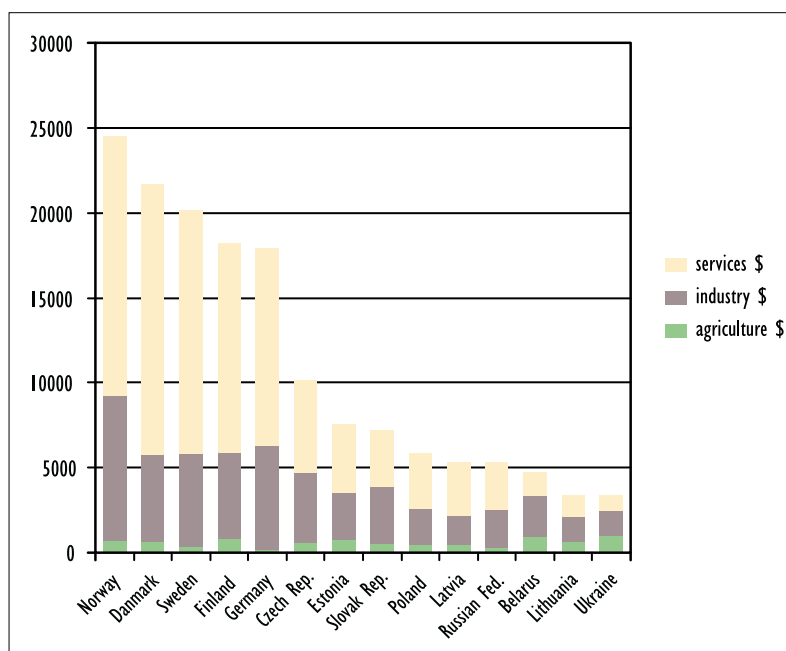


Figure 4.5. Gross domestic product (GDP) in the Baltic Sea area countries, 1995.

in most of them has remained at or below the levels of 1990.¹²

Today, the **European Union (EU)** has a great **influence** on the Baltic Sea area. Four of the countries in the Baltic Sea drainage area – Denmark, Finland, Germany and Sweden – are members of the European Union. In addition, the Czech Republic, Estonia, Latvia, Lithuania, Poland, Slovakia and Ukraine have applied for the membership of the EU. The EU also plays a significant role in the area through its financial support programmes such as Phare (Poland, the Czech Republic, Slovakia and the Baltic countries) and



Katarzyna Krefit-Burman

Tacis (Russia, Belarus, Ukraine), as well as through some other financial instruments like Interreg and LIFE.

The **strengthening of the private sector** has currently been a noticeable trend in the area. Large international companies consider good environmental practices necessary and also a potential marketing tool. Big energy and industrial companies are increasingly adopting international standards for environmental management systems and auditing schemes. Small and medium-sized enterprises, whose numbers have recently increased in the area, constitute a greater challenge in this matter.¹²

The principle **industries** in the Baltic Sea area are metal, machinery, vehicles, chemicals, pulp and paper, textiles, food products and electronics. In addition, some countries, such as Poland, Denmark and Finland, are known for their ship building industries.^{13,14} In the countries in transition industrial production declined significantly at the beginning of the 1990s and has only recently begun to recover.¹²

Energy production in its various forms is also an important sector of economy in the area.

Agriculture makes up a relatively large part of the economy in all the Baltic Sea countries. **Forestry** is an important economic sector in Finland and Sweden. Both agriculture and forestry are causing environmental problems in the Baltic Sea area. As regards to agri-

culture, the intensive cultivation of cereals, oil plants and sugar beet is the most significant pollution source.¹⁵ Forestry practises expose the soil to the rain and sunshine, which together with drainage and land cultivation lead to the dissolving and washing of nutrients into waterbodies.¹⁵

As regards **transportation**, the transport activity is greater in the north-west region and the transport infrastructure is of a higher density than in the south-east region. On the other hand, fuel and vehicles in the north-west region are polluting less per vehicle because of stricter environmental practises. The current trend shows that transport activities are increasing in both regions: in the north-west especially air and fast **ferry** transportation are increasing whereas in the south-east the number of **road vehicles** is increasing rapidly.¹⁶ Increased traffic has caused environmental problems throughout the area.¹² **Marine transport** also expanded substantially during the 1990s. Particularly the increase in oil transport is a threat to the Sea.

4.3 People

There are many ethnic groups in the Baltic Sea catchment area, and several **languages** are spoken among the 85 million inhabitants. Polish is the language spoken by the largest number of people in this area – about 97% of the more than 38 million population of Poland speak Polish as their mother tongue. There are also Polish language-speaking minorities in Lithuania, Belarus and Ukraine. Formerly Russian was an important official language of communication in all the south-eastern countries and it is frequently used and understood in that area. Many ethnic Russians, who outside Russia form a significant minority (>20%) in Estonia, Latvia and Ukraine, speak only Russian. In the Nordic countries Swedish is widely understood. Although English is not one of the native languages

of the region, it is commonly taught at schools, and therefore increasingly understood also in the south-eastern countries, particularly among the young. However, English is not as widely spoken in Ukraine, Belarus, Russia and Slovakia as elsewhere in the region.¹³

Nearly every adult in the Baltic Sea area can read and write. In general, the people are **well-educated**. Denmark, Norway and Sweden are among the world leaders in the amount spent on education, which has been over eight per cent of their GNPs.⁵³

Religious beliefs vary in the area: Evangelical Lutheranism is predominant in Denmark, Sweden, Norway, Finland, Latvia and Estonia; Roman Catholicism is predominant in Poland, Lithuania and Slovakia; and the Orthodox faith is predominant in Russia, Belarus and Ukraine. In addition, in northern Germany, people are mainly Protestant. In Poland religion plays a significant role in the society and influences both education and the media.¹⁷ However, in many of the countries religion is not that significant in everyday life.

Age structure of the population in the countries of the Baltic Sea catchment area varies noticeably. In Slovakia, Lithuania and Poland the relative amount of young people (less than 15 years) is highest in the region. In Sweden, Norway, Denmark and Germany the amount of older people (65 years or over) is almost equal to the amount of young people (see Fig. 4.6).¹⁴ On average the **life expectancy** at birth is high in the region (see Fig. 4.7)¹⁴; it is below seventy years only in the six former Soviet Republics. The lowest life expectancy has been in Russia, 63.2 years, due to higher mortality rates; Russia also shows the highest **infant mortality rates** (see Fig. 4.8).¹⁴ In Russia, as well as in some other countries, there are considerable differences in life expectancy between the sexes; women may live up to ten years longer than men.

A serious **hazard to human health is environmental pollution**. It causes

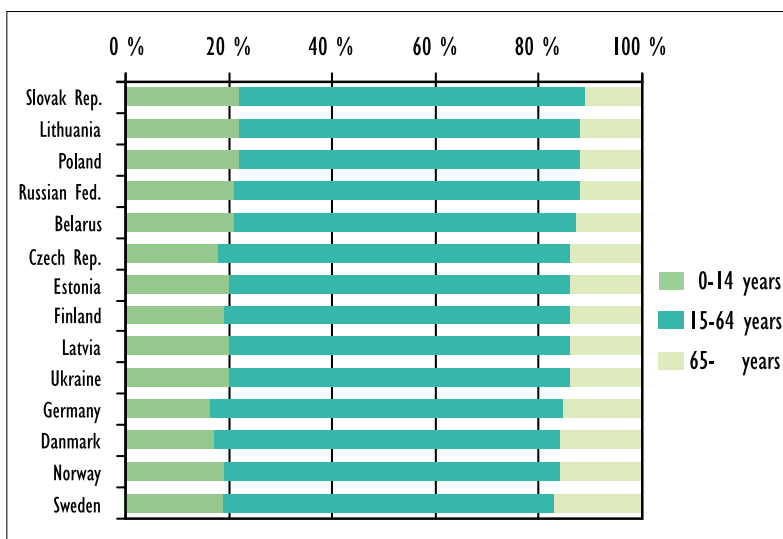


Figure 4.6. Age Structure, 1996.

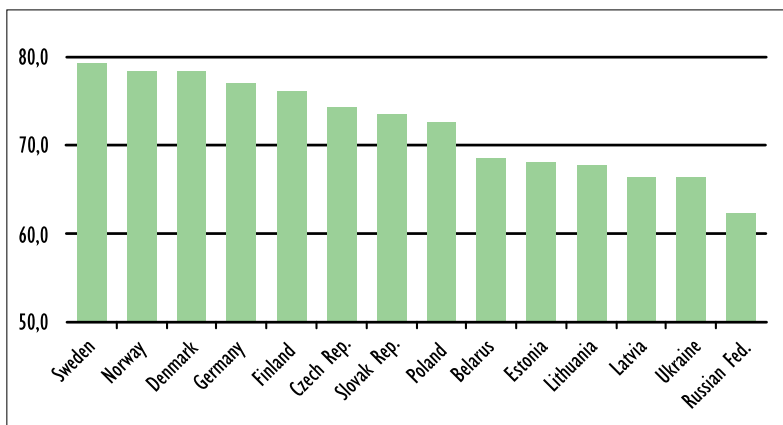


Figure 4.7. Life expectancy (years), 1996.

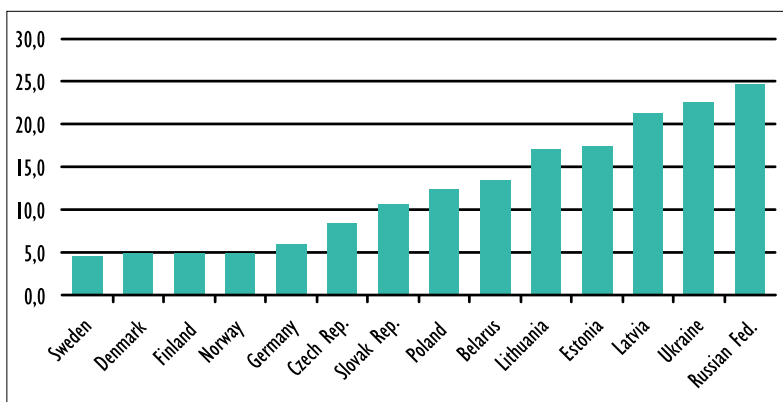


Figure 4.8. Infant mortality rate per 1000 live births, 1995.

a threat especially to health of children. Severe contamination can result in higher mortality rates. In most countries of the Baltic Sea area the effects of pollution on human health have been

noted and reported. For instance, in Russia 30-40% of all children's diseases have been estimated to be a result of air pollution, and general respiratory diseases have increased sixfold during the 1990s.¹⁸ The nuclear power plant accident in Chernobyl in 1986 has had a serious effect on people's health; four million Ukrainians are estimated to live in dangerously contaminated areas.¹⁷ The accident also affected other countries in the Baltic Sea catchment area, mostly Belarus which received the highest radiation fallout.¹³

The urbanisation rate in the Baltic Sea area is relatively high. Over 80% of the population is living in urban areas in Denmark, Sweden and Germany. The least urbanised countries are Slovakia, Finland, Poland and the Czech Republic, in which the urbanisation rate is below 70%.¹³ Five capital cities are located on the Baltic Sea coastline: Copenhagen, Helsinki, Riga, Stockholm and Tallinn. Among the cities situated by the sea coast the largest is St. Petersburg.

People in most of the countries of the Baltic Sea area do have a possibility to directly express their environmental concern in political life. The **green political parties** are active in most of the countries of the region. In Denmark the coalition called *Enhedslisten-De Rød-Grønne* has been holding six seats in the Danish parliament.²⁰ Green Parties have had many years seats in parliaments of other Nordic countries as well. In Germany, the Green Party has been one of the leading parties since 1983, and environmental campaigns have had a great influence on the policies of all the major parties.¹⁸ In the countries in transition the green parties and non-governmental organizations (NGOs) are sometimes quite near to each other philosophically. The NGOs can be politically active, as they are for example in Russia and Lithuania. In the Nordic countries and Germany, green parties and NGOs tend to have different agendas. In most of the Baltic Sea countries there are well established NGOs with relatively long

histories of activity and with strong public support.

For the people in the Baltic Sea area outdoors activities and watching television are the most popular forms of **recreation**. A comparison between the countries in the region (excluding Belarus and Latvia) shows that watching television is one of the most popular leisure time activities. Cinema and socialising are also common ways to spend leisure time in many countries. Reading is mentioned among the most popular hobbies in Sweden and Norway.¹³

4.4 Communication

Today, the opportunities to exchange information in the Baltic Sea area are improving. Media exerts strong influence on public opinion, for instance, about the state of the Baltic Sea. Environmental information is disseminated through many channels, for example: radio, television, newspapers and other publications, and the Internet.

Almost every household has a **television** (see Fig. 4.9).⁴⁷ Over half of the inhabitants in Denmark, Finland and Germany have a television receiver or licence, while in Belarus the correspondent figure has been only slightly more than 20%. **Radio** receivers are even more common, on average there has been 671 radios per thousand inhabitants in the region while the number of televisions has been 433. In Denmark and Finland there are even more radios than inhabitants. Of the countries in transition, in Ukraine the number of radios has been at the same level as in the north-western countries (see Fig. 4.10).⁴⁷

The number of inhabitants per number of **telephones** is less than 2 in the Nordic countries and in Germany, but between 3 and 7 in other countries of the Baltic Sea drainage area (see Fig. 4.11).¹⁰ In addition, in the north-western countries of the Baltic Sea area mobile phone networks are well developed, which is not necessarily the case

in all parts of the region. In the Nordic countries the amount of mobile phones (which were not included in Fig. 4.11) per capita is the highest in the world.

The **Internet** has recently been one of the most rapidly developing channels of information. Even though the Baltic Sea countries differ in the number of Internet hosts per capita (see fig. 4.12), this means of communication is becoming more and more common and available. It is possible that the Internet might help solving many problems connected with the free flow of and access to information in this area.

The circulation of daily **newspapers** per capita is highest in the Nordic countries and in Germany (see Fig.4.13 and Fig. 4.14).⁴⁷ In 1990s there has been an overall decrease in the number of daily newspapers in the area, most remarkably in Russia, Ukraine and Belarus. Only in the Czech Republic and Estonia, and in Germany which was reunited in 1990, there has been a noticeable increase in the number of daily newspapers. The circulation of daily newspapers has declined in almost every country of the area except in Poland and Germany. This decrease is, in some cases, due to the rise in production costs and, consequently, in market prices, and the simultaneous decrease in purchasing power. Furthermore, the newspaper content may have changed in the south-eastern countries that recently gained independence.²¹ The specialised press is not yet as well developed in the countries in transition as in Nordic countries and Germany.

Freedom of the press is stipulated by law in most countries in the area. On the other hand, in some countries there have still been some restricting rules for this freedom. Most of the newspapers and periodicals in the region are published in the language of the majority. Here, Belarus has been somewhat exceptional because there have been only 148 registered publications of 695 in Belorussian (in 1994). The rest have been in Russian, or in both languages, or in Russian with one other language: Polish, Ukrainian or English.^{21,22}

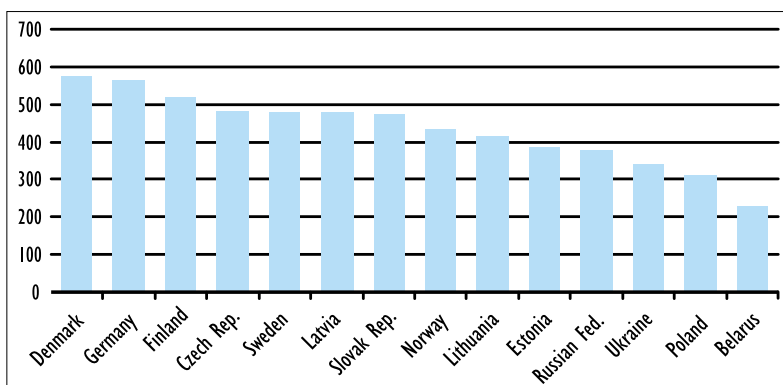


Figure 4.9. Televisions and/or licences per 1000 inhabitants, 1995.

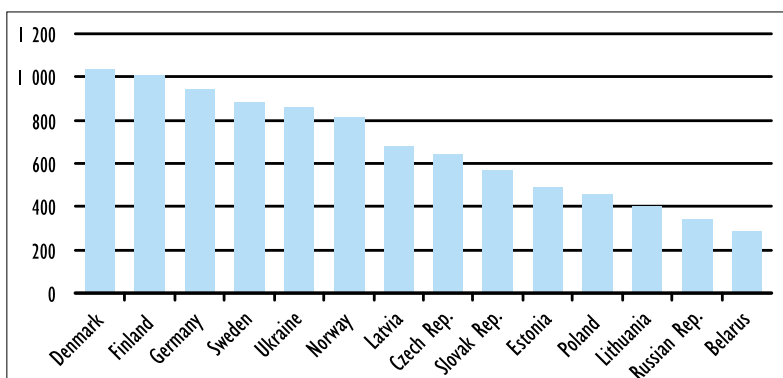


Figure 4.10. Radio receivers per 1000 inhabitants, 1995.

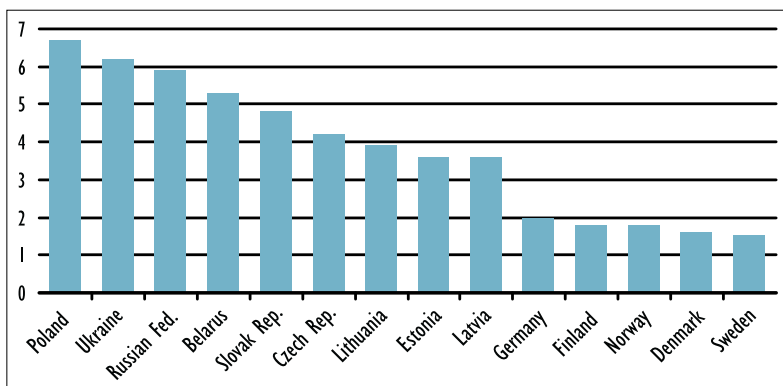


Figure 4.11. Telephones (inhabitants per telephone), 1995.

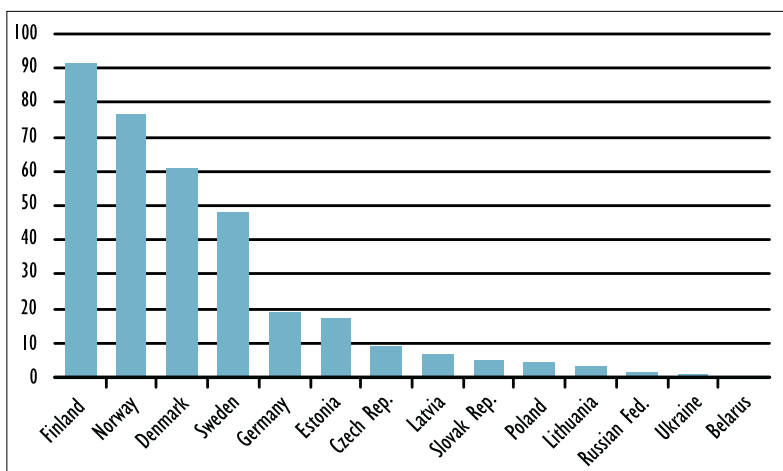


Figure 4.12. Internet hosts per 1000 inhabitants, 1999.

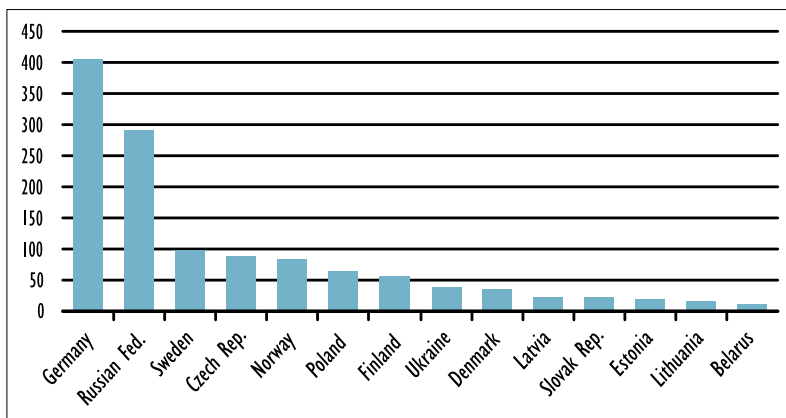


Figure 4.13. Number of daily newspapers, 1995.

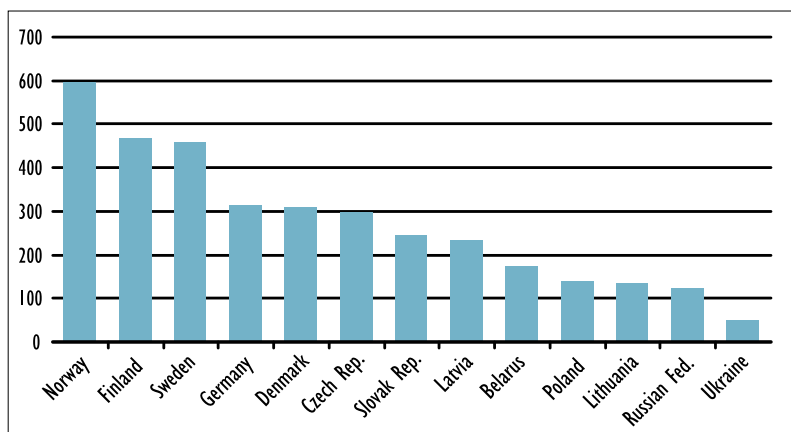


Figure 4.14. Circulation of daily newspapers per 1000 inhabitants, 1996.
Estonia: Data not available.

In June 1998 the Convention on Public Participation was signed, which aims to ensure access to information, and to ensure public participation and justice in environmental matters. This will be discussed more later, in Chapter 5.1.3 (Box 6).

4.5 Pollution and environment

Compared to many other seas of the world, there has been a tremendous interest to environmental affairs within the Baltic Sea drainage area. Numerous environmental investments have been made, such as large investments on water treatment plants in the recent years in many cities of the Baltic States and Poland.

The most acute environmental problems in most non-EU countries of

the Baltic Sea area are pollution in industrial areas, contamination of rivers and coastal zones and problems with waste disposal.²³ For instance, industrial waste management has not proceeded as well as has municipal waste management in the countries in transition.²⁸ In general, some of the main challenges in the field of environment in these countries include implementation of modern technologies and development of environmental-technical infrastructure. Simultaneously, it is crucial to raise the level of environmental awareness and search for new resources. Public interest and support for strong environmental policies might have further diminished there because economic and social issues have had a higher priority, and because of lower levels of pollution at present partly due to decreasing production and ongoing changes in socio-economic and administrative systems.²³

Severe pollution problems have been related to industries in Poland (especially in Warsaw and the Kraków-Katowice areas); in Russia (Kaliningrad, St. Petersburg); Lithuania; Latvia (Riga); Estonia; and to some extent also along the Gulf of Bothnia. In general, substantial pollution from both industrial and municipal wastes can be found, however, in the south-eastern part of the Baltic Sea.¹⁰ The largest amounts of air pollution originates in Germany, Russia and Poland (see Fig. 4.15).⁵¹ Note that this figure – as all figures from chapter 4.2 to chapter 4.5 – are referring to the area of the whole country, not just the catchment area.

In the EU countries, air pollution caused by traffic is a major problem and the number of passenger cars per capita is larger than in most non-EU countries (see Fig. 4.16).⁵² Traffic is a main source of nitrogen oxide emissions in particular. The energy consumption per capita is highest in Sweden, Finland and Norway (see Fig. 4.17).⁵² The EU countries, Norway and the Baltic States are producing the largest amounts of municipal waste per capita (see Fig 4.18).⁵²

Discharges of pollutants have been reduced today in the countries in

transition, mainly due to industrial restructuring and decreased industrial production, but also because of decreased agricultural activity.^{23, 25} However, in the Czech Republic, Estonia, Latvia, Lithuania, Poland and Slovakia improvements in the state of the environment are also linked to actions taken to protect the environment. In spite of this, industrial pollution and inadequate investments in environmental protection still are a major problem, and, in some cases, discharges and emissions are increasing as the economy recovers. For instance, NO_x and CO₂ emissions increased in 1996 in the Czech Republic and Poland.²³

Commercial **fertilisers** (nitrogen, phosphate, potassium) are applied the most in Germany, followed by Russia, Poland and Ukraine (see Fig. 4.19).⁵² The highest amount of fertilisers per hectare is used in Denmark. The largest users of pesticides are Germany, Poland, Slovakia, Denmark and the Czech Republic – the figures from Ukraine and Russia are not available. These figures are also referring to the area of the whole country, not only the part in the catchment area. The countries differ greatly in their agricultural practices.²³ Fertilisers from agriculture are the most significant cause of **eutrophication**, (see Fig. 3.6). The other major source of nutrients, particularly phosphorus, is municipal sewage. Municipal waste is also a source of nutrients, and forestry and fur-farming are sources of nitrogen and phosphorus. Locally, the nutrients from aquaculture are considerable. Nutrient load from transport sector is also a very significant cause of eutrophication. Nitrogen oxide emissions from transport sector have not been reduced and, in future, traffic, along with fossil fuel based power production, may be one of the major sources of nitrogen oxide.^{3,4}

The nutrients increase the **growth of algae** which sink to the bottom of the sea as they die. Their decomposition consumes oxygen which results in large oxygen-deficient areas. These areas then become a source of the nutrients from dead flora. By decreasing the

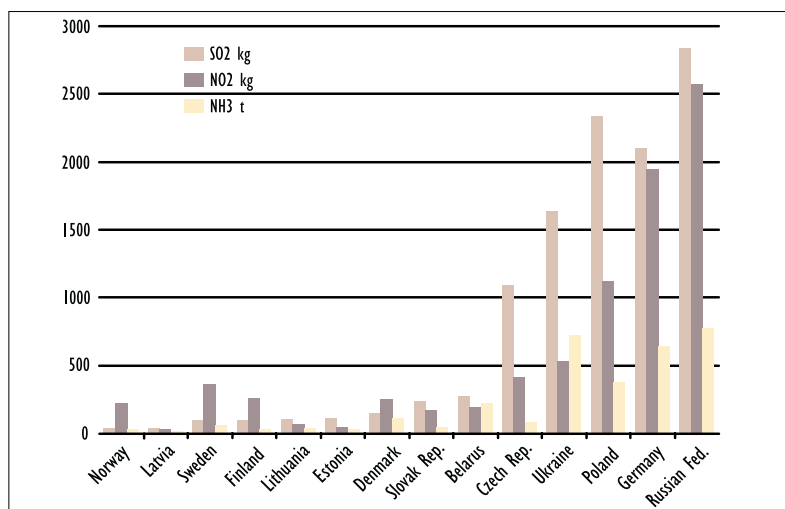


Figure 4.15. Air pollution emissions (x1000 t per year), 1995.

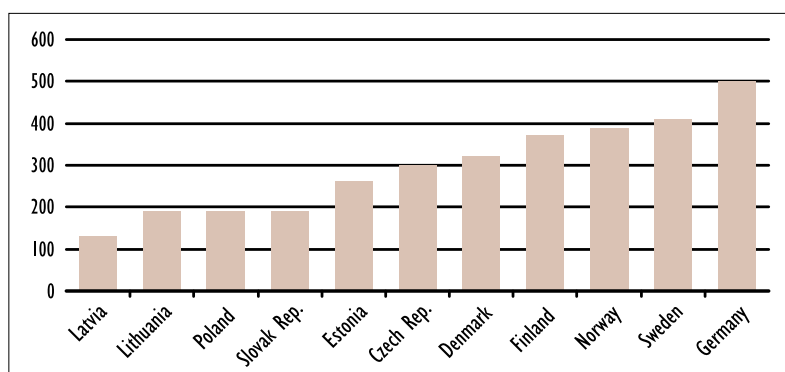


Figure 4.16. Passenger cars per 1000 inhabitants, 1995.

Russia, Belarus, Ukraine: Data not available.

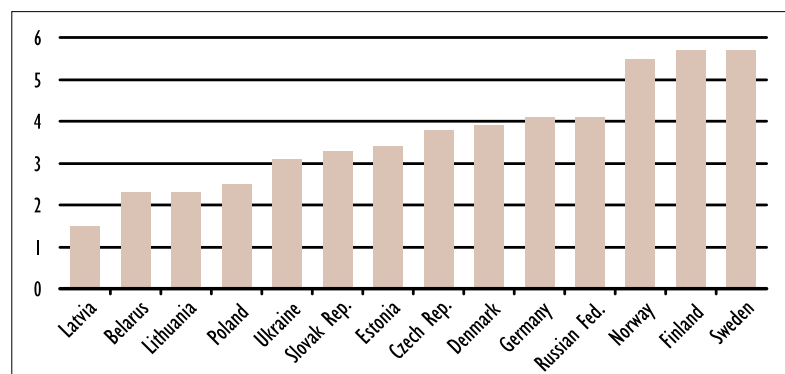


Figure 4.17. Gross inland energy consumption (toe) per capita, 1995.

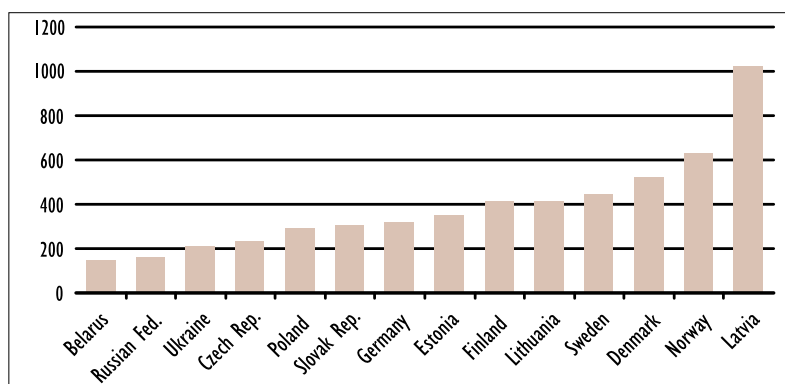


Figure 4.18. Municipal waste (kg) per capita, 1995.

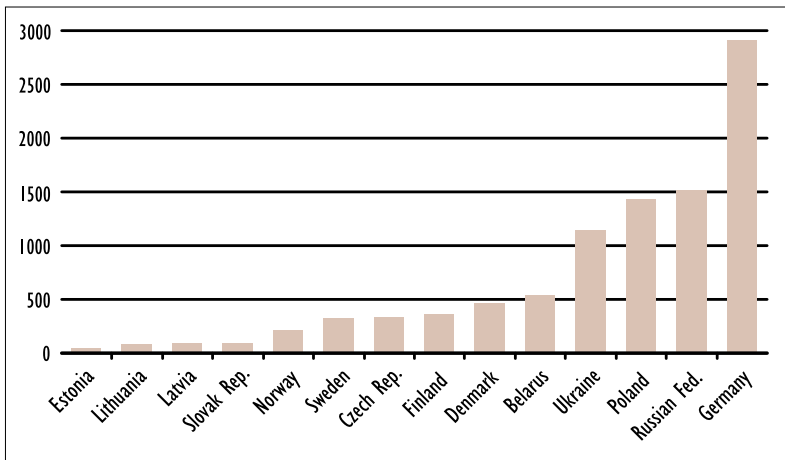


Figure 4.19. Consumption of commercial fertilisers (x1000 tonnes), 1994.

external pollutant loads the effects of internal nutrient flows in the sea can gradually be diminished.²⁶ Besides these factors the hydrographic conditions of the Baltic Sea (see chapter 3) are affecting strongly to the state of the Baltic Sea environment.

Industry, agriculture, traffic and settlements are the main sources of pollution in the Baltic Sea, and tourism is becoming a greater threat to environment as well. At present, nuclear safety issues are of a growing concern in the Baltic Sea area. All these human activities result in either point source or non-point source pollution. Rivers carry polluted runoff to the sea and rains deposit atmospheric pollutants. Point source pollution includes industrial waste waters and waste waters from public sewage systems. These waste waters can be treated and cleaned quite well by the existing technology. Non-point source pollution, however, which consists mainly of the wastes from agriculture, forestry and traffic, is fairly difficult to prevent. The seriousness and the extent of the problems depend on climatic conditions, soil conditions, agricultural and industrial practices, and the amount of waste.²⁶

HELCOM has reported an alarmingly high number of **illegal oil discharges** in the Baltic Sea. Therefore, new HELCOM recommendations with the aim to eliminate illegal discharges is entering into force during the year

2000. Among other things they include a requirement that before leaving a port ships deliver all ship-generated wastes which are not allowed to be discharged in the Baltic Sea.

According to HELCOM studies, riverine and direct load of **heavy metals** into the Baltic Sea is an environmental problem. The long-term effects of accumulation of some of the metals, e.g. mercury and cadmium in biota, are well known. The eventual fate of the metals when they finally come into contact with the bottom sediments is another cause for concern.

Human pressure exerted on the natural environment in the Baltic Sea catchment area countries can also be compared according to the **consumption pressure** indicators developed by the WWF.²⁷ Consumption pressure consists of six components: grain consumption; marine fish consumption; wood consumption; freshwater withdrawals; carbon dioxide emissions, as a proxy for fossil fuel consumption; and cement consumption, as a proxy for land consumption. Over 40% of the consumption pressure of the inhabitants living in the Baltic Sea catchment area comes from Poland, which has by far the largest population in the area (see Fig. 4.20).²⁷ On the other hand, countries in

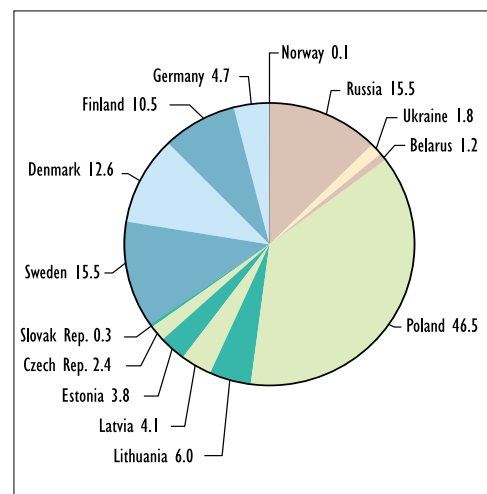


Figure 4.20. Total consumption pressure in millions of average consumers of the world (compare with the figures 4.1 and 4.21) in 1998.

subregion 3 have the highest consumption pressure per capita (see Fig. 4.21).²⁷ Note that consumption pressure is related to an average consumption in the world – that is, a consumption pressure value of 2 indicates that the people exert a pressure on the environment that is twice the world average.

There are a number of **nature conservation areas** established within the Baltic Sea catchment area. The criteria of conservation varies noticeably in different countries. The countries in which the largest amount of the total land area has been protected, at least to some extent, are Denmark (32%), Germany (26%), Norway (24%), Slovakia (21%) and the Czech Republic (16%).⁵³ Generally, many countries have been recently increasing the number of their national parks and the amount of protected land.²³ For example, in the EU has recently been designated Natura 2000 network of protected areas, comprising total land area of over 100 000 km² in the Nordic EU countries. In addition, there are proposed Baltic Sea Protected Areas (BSPAs) – coastal and offshore areas, and a Red List of threatened biotopes for the Baltic Sea marine environment.

The Environmental Action Programme in Central and Eastern Europe aims to support the preparation of National Environmental Action Programmes (NEAP) in 24 countries, includ-

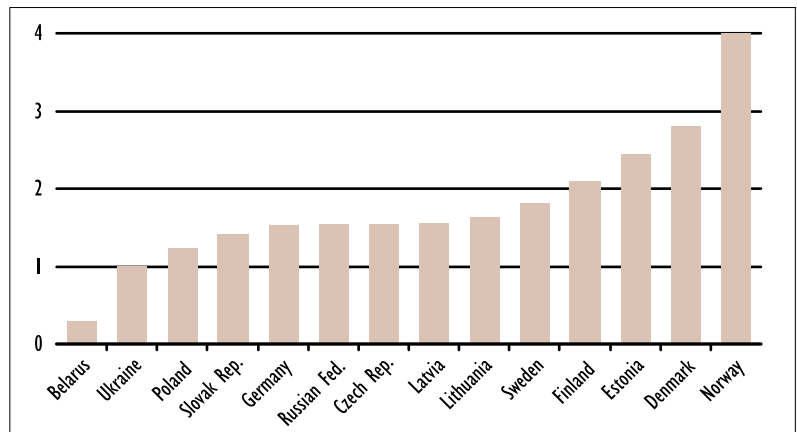


Figure 4.21. Consumption pressure per capita in the Baltic Sea area countries (1 = average world citizen).

ing most non-EU countries of the Baltic Sea catchment area. NEAPs have been developed in the Baltic countries, the Czech Republic, Poland and Slovakia, with a view to fulfilling the requirements of the EU environmental acquis.²⁹ Environmental awareness is one priority in NEAPs, for example, in Poland and Estonia.^{30,23} Environmental **legislation** has been renewed in Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia since their independence. These countries have been undergoing a process of harmonising environmental legislation with the EU standards. Developing and updating environmental legislation and establishing environmental policy frameworks have been the main goals



European Commission

of national environmental planning in Russia, Belarus and Ukraine.²³

4.6 Opinions about the state of the environment and the level of environmental awareness

The countries in the Baltic Sea drainage area differ noticeably in the state

of their environment and in the level of environmental awareness. As mentioned in the introduction, in this project a **questionnaire** was sent to 850 key persons representing various professional groups. The key persons were also asked for their opinions on the state of the environment and on different factors affecting environmental awareness.

People usually have some beliefs about their own country in relation to neighbouring countries. Therefore, the respondents were asked to give their opinions on their home country, two neighbouring countries, and one country in some other part of the Baltic Sea catchment area. To allow easier comparison of the answers, each statement was supposed to be evaluated on a scale from 0 (not at all) to 5 (very much). Since considerable differences within the Baltic Sea catchment area exist concerning the factors affecting environmental awareness in each country, it was regarded as necessary that each respondent would evaluate both the EU and non-EU countries. With this method, each person had to relate his or her opinions quite homogeneously and the differences between individual scales were minimized.

As a result, 38 persons evaluated Belarus, 14 Denmark, 38 Estonia, 40 Finland, 30 Germany, 30 Latvia, 24 Lithuania, 50 Poland, 42 Russia and 70 Sweden. Altogether, from 413 to 423 evaluations were received for each statement. Since the number of respondents answering to this part of the questionnaire was rather small (approximately 110), a detailed statistical analysis of the results was not advantageous. However, when the average evaluations given to these statements were compared, several noticeable distinctions were clearly found.

Two statements were designed to characterise the differences in views about the **state of the environment**. These were 1) Environmental problems affect the health of the people; 2) The state of the environment is getting worse (see Fig. 4.22).

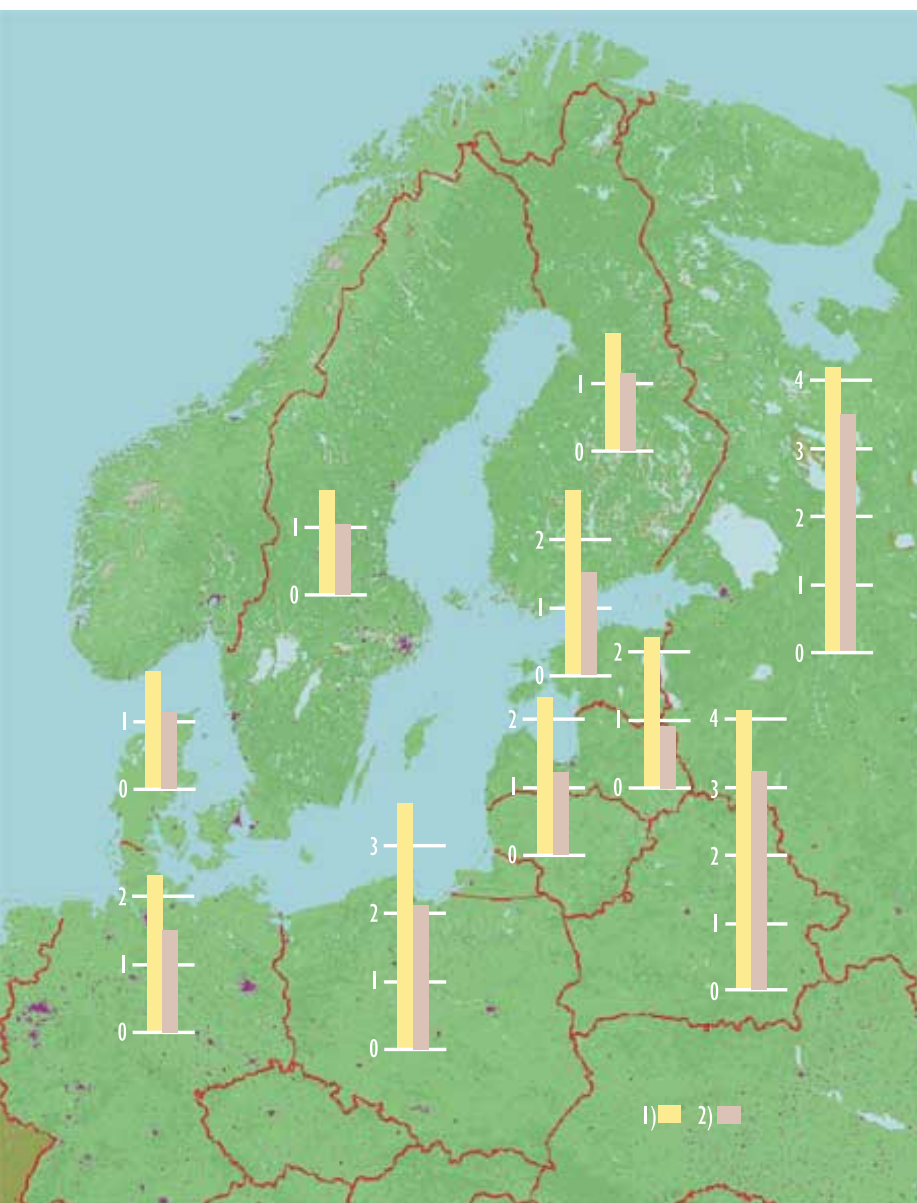


Figure 4.22. Opinions on the state of the environment in the countries of the Baltic Sea area. The average evaluations given to two statements: Scale of evaluations: 0 = not at all, 1 = a bit, 2 = to some extent, 3 = moderately, 4 = quite much, 5 = very much.

According to the respondents, in Sweden, Finland and Denmark environmental problems are not viewed as greatly affecting the health of the people. Respondents believe that in Germany and the Baltic States environmental problems affect the health of the people "to some extent". Finally, the respondents hold the view that in Belarus, Poland, and Russia the state of the environment is affecting the health of the people today. These results can be compared with previous multinational studies on environmental awareness. In the *Health of the Planet* survey people from 24 countries around the world were interviewed.³¹ Five of the Baltic Sea catchment area countries, Denmark, Finland, Poland, Russia and Norway, were included. It turned out that in the three Nordic countries, a relatively small number of people (from 14% to 27% of the population) believed that environmental problems affect their health now, whereas in Poland and Russia the number was remarkably higher (80% in Poland, 89% in Russia). To allow comparison with this previous international study, the question regarding the effects of environmental problems on health was posed identically in this project questionnaire. The results obtained were well in line with the *Health of the Planet* survey.

In the second statement the respondents had to evaluate the current trend in the state of the environment. According to the respondents' opinions, only in Russia and Belarus the state of the environment is becoming worse. Poland, which is seen as still having serious environmental problems, is at the same time seen as having started the recovery process. In all the other countries the state of the environment is believed to be improving.

The respondents were also asked to give their opinion on some statements which described external factors affecting the opportunities to act in an environmentally friendly way. These were as follows: 1) Everyday life situations do not prevent people from acting in an environmentally friendly manner; 2) It is easy to get environmental information through the media; 3) NGOs are working actively and are widely supported; 4) People have good practical means and opportunities to act in an environmentally friendly manner;

2) It is easy to get environmental information through the media; 3) NGOs are working actively and are widely supported; 4) People have good practical means and opportunities to act in an environmentally friendly manner.

The responses to the statements were averaged and the average evaluations for each country were compared (see Fig. 4.23). Differences in the perceived opportunities to act environ-

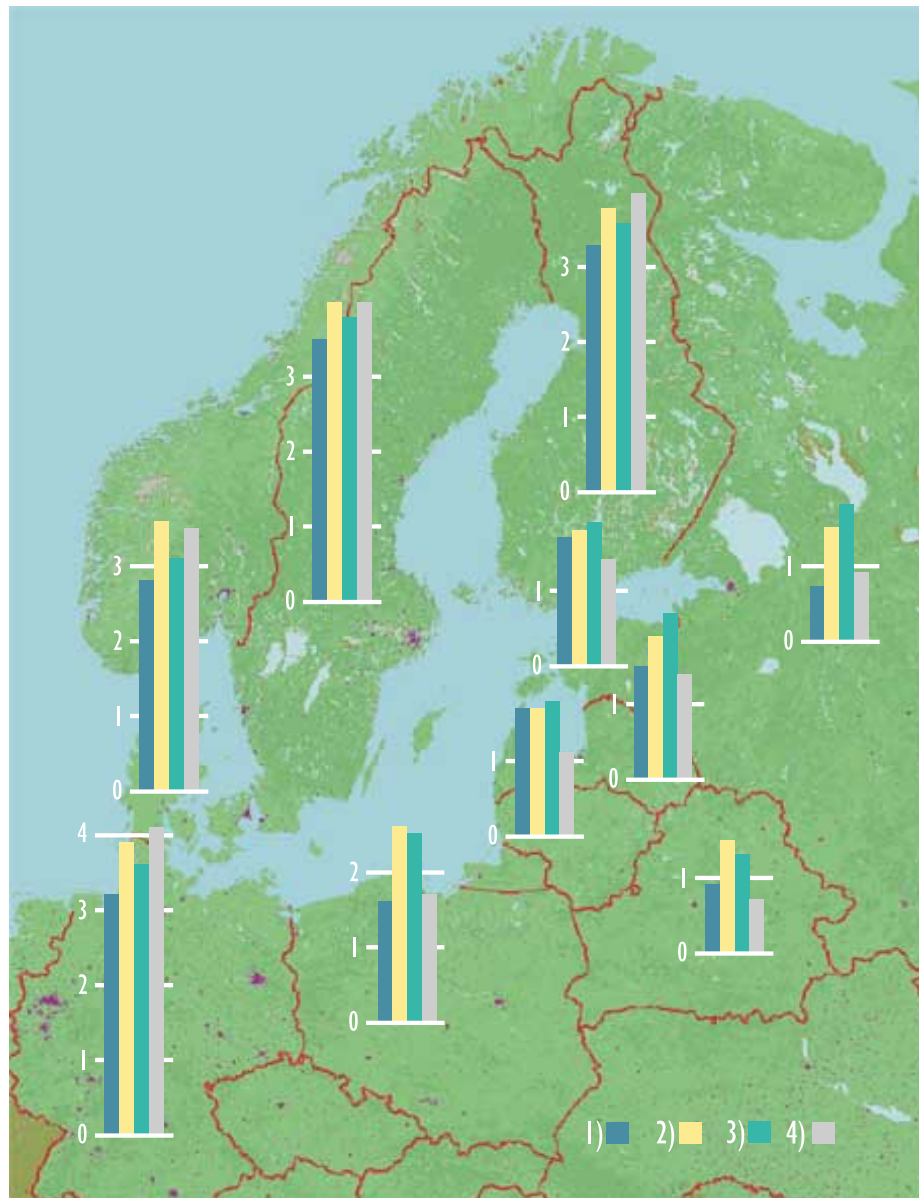


Figure 4.23. Opinions on the factors affecting the opportunities to act in an environmentally friendly way in the countries of the Baltic Sea area.

The average evaluations given to four statements: 1) Everyday life situations do not prevent people from acting in an environmentally friendly manner; 2) It is easy to get environmental information through the media; 3) NGOs are working actively and are widely supported; 4) People have good practical means and opportunities to act in an environmentally friendly manner. Scale of evaluations: 0 = not at all, 1 = a bit, 2 = to some extent, 3 = moderately, 4 = quite much, 5 = very much.

mentally friendly manner in the countries within the Baltic Sea catchment area are strong. According to the respondents' beliefs, in the four EU countries there are good opportunities that allow people to make environmentally friendly choices. Therefore, in these countries, it seems to be mainly up to the individuals' own environmental awareness whether they make environmental-

ly friendly choices or not. In the view of the respondents, the opportunities to act in an environmentally friendly way in the non-EU countries are limited. This can decrease the motivation to act environmentally friendly, and give rise to the belief that environmentally friendly actions are hindered to a large degree. According to the view of the respondents,

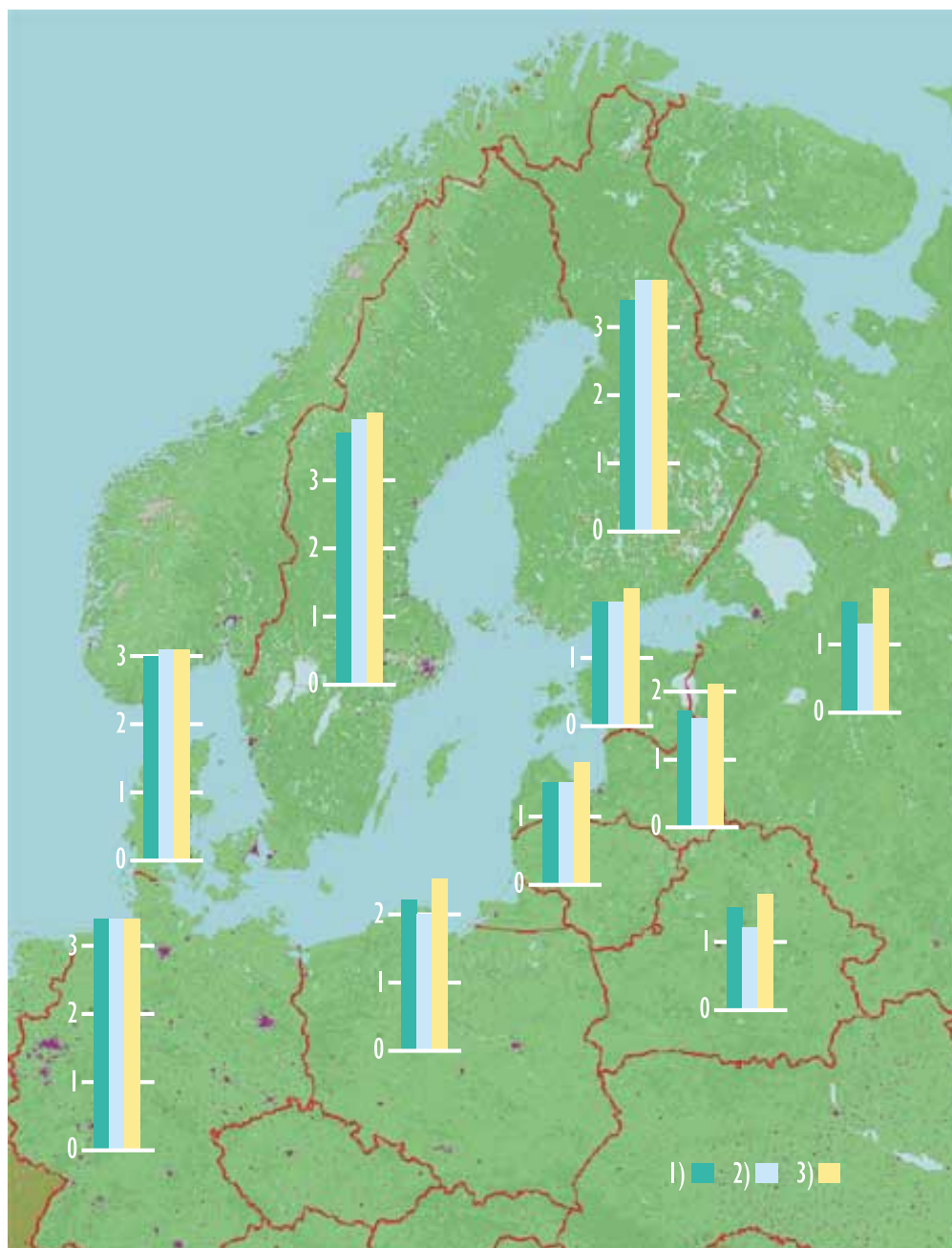


Figure 4.24. Opinions on the differences in the level of environmental awareness in the countries of the Baltic Sea area. The average evaluations given to three statements: 1) People have a good level of environmental and scientific knowledge; 2) People are well motivated to improve the environment; 3) People think that a healthy environment is a part of sustainable development. Scale of evaluations: 0 = not at all, 1 = a bit, 2 = to some extent, 3 = moderately, 4 = quite much, 5 = very much.

the countries most in need to improve the situation are Russia and Belarus.

Three statements were meant to characterise the **differences in the opinions on the level of environmental awareness**. These were: 1) People have a good level of environmental and scientific knowledge; 2) People are well motivated to improve the environment; 3) People think that a healthy environment is a part of sustainable development. The responses to the statements were averaged and the results were compared (See Fig. 4.24). Although there were marked remarkable differences between the EU and non-EU countries, they are less sharp than in the case of the perceived opportunities to act in an environmentally friendly way. Therefore, it has to be emphasised that together with direct **awareness-raising activities**, real investments in the **practical means** and **opportunities to act** are also needed.

4.7 Opinions about factors that encourage economy towards environmentally sustainable practices

In the project questionnaire the respondents were asked about their opinions on factors that encourage economy towards environmentally sustainable practices. When comparing the respondents' opinions between different subregions, the following distinctions can be made (see Fig. 6.3):

Subregion 1:

- **Effective supervision of environmental laws, financial subsidies for environmental investors and international influence** are the most important factors for this subregion
- **Environmental taxation and higher prices** are not favoured

- Decisions and actions made by individual citizens are not valued much.

Subregion 2:

- **Financial subsidies for environmental investors and effective supervision of environmental laws** are emphasized
- **Environmental information** is also valued more than among the respondents in other subregions
- **Environmental taxation and higher prices for harmful products** are favoured
- Decisions and actions made by individual citizens are not valued much.

Subregion 3:

- **Higher prices for harmful products** are favoured most within this subregion
- **Individual decisions and actions** are favoured more than in other subregions.

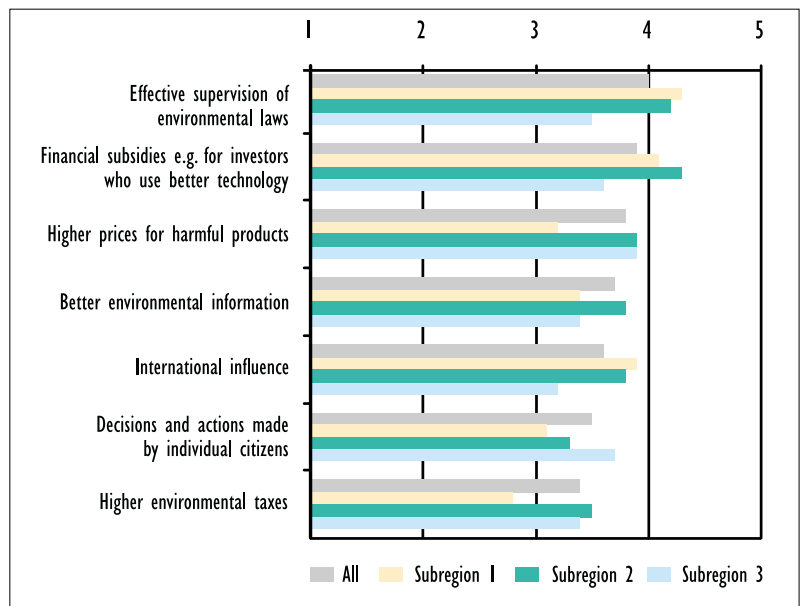


Figure 4.25. Importance of different factors in encouraging the economy in the respondents (138) own country to move towards more environmental practises. Comparison between different subregions. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

5

Current conditions for raising environmental awareness in the Baltic Sea catchment area

Many international and national actors influence the level of environmental awareness in the Baltic Sea area. To some degree they cooperate with each other but often their activities are overlapping. The overlapping activities can, on one hand, be wasting of available resources, but, on the other hand, they can strengthen the overall effect of those activities.

As mentioned in the introduction, in this project the 14 countries of the Baltic Sea catchment area are grouped into three subregions. The context of these subregions is also taken into account when analysing the current conditions for raising the level of environmental awareness.

5.1 The whole catchment area

5.1.1 Institutional framework

There are numerous international and national actors affecting to environmental issues in the Baltic Sea area: international conventions and agreements, ministerial declarations, inter-governmental organizations, financing institutions and assistance agencies, governmental agencies and parliaments, environmental non-governmental organizations (NGOs) and networks, organizations and networks for co-operation between regions and cities, and organizations and networks for business and trade.



Stephen F. Lintner

BOX 1: International cooperation and organizations around the Baltic Sea ³²

International Conventions and Agreements:

- Basel Convention, Bonn Convention, CITES, Convention on Biological Diversity, Convention on the Law of the Sea, Framework Convention on Climate Change, MARPOL 73/78, Ramsar Convention, Vienna Convention, Montreal Protocol, World Heritage Convention, Bern Convention, Århus Convention, Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Convention on the Transboundary Effects of Industrial Accidents, Espoo Convention, Convention on Long-range Transboundary Air Pollution (LRTAP), OSPAR, Gdansk Convention, Helsinki Convention 1974 and 1992.

Ministerial Declarations of relevance to the Baltic Sea Region:

- HELCOM Ministerial Declarations, Baltic Sea Summits (i.e. Ronneby Conference 1990, Visby Summit 1996, Riga Summit 1998), Council of the Baltic Sea States, VASAB, Barents Euro-Arctic Council, United Nations Conference on Environment and Development (UNCED), Convention on climate change (The Kyoto Protocol), Environment for Europe Process, European Council Presidency Conclusions,

Intergovernmental organizations:

- International: the European Union, Council of Europe, OSPAR Commission, UN ECE (UN Economic Commission for Europe), IMO (United Nations International Maritime Organization, OECD (Organization for Economic Co-operation and Development, OSCE (Organization for Security and Co-operation in Europe), Ramsar Convention Bureau, UN (United Nations), UNCED (UN Conference on Environment and Development, 1992 Rio Declaration), UNESCO UN (Educational, Scientific and Cultural Organization), UN ECE (UN Economic Commission for Europe), UNDP (UN Development Programme), UNEP (United Nations Environment Programme), UNEP GRID-Arendal, WHO (World Health Organization), WMO (World Meteorological Organization), WTO (World Trade Organization, formerly GATT)
- Regional: Baltic Council of Ministers, Council of the Baltic Sea States (CBSS), International Baltic Sea Fisheries Commission (IBSFC), Helsinki Commission (HELCOM), Nordic Council of Ministers

Financing institutions and assistance agencies

- International: GEF (Global Environment Facility), World Bank, EBRD (European Bank for Reconstruction and Development), EIB (European Investment Bank), USAid (US Agency for International Development)
- Regional/national: NEFCO (Nordic Environment Finance Corporation), NIB (Nordic Investment Bank), DANIDA (Danish International Development Agency), Finnish Aid, GTZ (German international development agency), Norad (Norwegian Agency for Development Cooperation), SIDA (Swedish International Development Co-operation Agency)

Governmental agencies and parliaments

- National ministries, government agencies and parliaments in the countries within the Baltic Sea Region.
- International fora for parliamentary co-operation: Baltic Assembly, Council of Europe Parliamentary Assembly, GLOBE (Global Legislators Organization for a Balanced Environment), European Parliament, Inter-Parliamentary Union, Nordic Council, OSCE Parliamentary Assembly, Parliamentary Conferences on Co-operation in the Baltic Sea Area

Environmental non-governmental organizations (NGOs) and networks

- International: ACOPS (Advisory Committee on Protection of the Sea), BirdLife, Friends of the Earth International, European Centre for Nature Conservation, EEB (European Environmental Bureau), EPE (European Partners for the Environment), EUCC (European Union for Coastal Conservation), Greenpeace, IISD (International Institute for Sustainable Development), IUCN (World Conservation Union), REC (Regional Environmental Center for Central and Eastern Europe), Taiga Rescue Network, T & E (European Federation for Transport and Environment), WCMC (World Conservation Monitoring Centre), Worldwatch Institute, WRI (World Resources Institute), WWF (Worldwide Fund for Nature),
- Regional/Subregional: ABNP (Association of Baltic National Parks), BALLAD, Baltic Institute of Finland, Baltic Institute (Sweden), Baltic Sea Foundation, Baltic Sea Alliance Interactive Data Workshop, BEF (Baltic Environmental Forum), BSP (Baltic Sea Project), BUP (Baltic University Programme), Baltic Sea Youth Forum, CCB (Coalition Clean Baltic), Environment Brigade, SMF (Stockholm Marine Research Centre), UMF (Umea Marine Sciences Centre), SEI (Stockholm Environment Institute), TEIA (Transboundary Environmental Information Agency)

Organizations and networks for co-operation between regions and cities

- International: CEMR (Council of European Municipalities and Regions), ICLEI (International Council for Local Environmental Initiatives),
- Regional: BTC (Baltic Tourism Commission), BSSSC (Baltic Sea States Subregional Cooperation), Baltic Seven Islands, ECAT (Environmental Centres For Administration and Technology), UBC (Union of the Baltic Cities)

Organizations and networks for business and trade

- International: E&P FORUM (Oil Industry International Exploration & Production Forum), EURO CHLOR (European Chlor-Alkali Industry), ESPO (European Community Sea Ports Organization), EuDA (European Dredging Association), EFMA (European Fertilizer Manufacturers' Association), ICC (International Chamber of Commerce)
- Regional: BIMCO (Baltic and International Maritime Council), Baltic Sea Business Summit 1998, Baltic Net - Westermann and Partner, BPO (Baltic Ports Organization), Baltic Sea Chambers of Commerce Association

Many of the already existing regional and national information and communication structures and strategies are quite much in line with the current interests of the **European Union** in the Baltic Sea catchment area. These EU interests consist at present mainly of the EU enlargement, the Northern Dimension initiative and the future cooperation with Russia. Moreover, the European Union has one of the most important regional environmental actors, the European Environment Agency (EEA). EU is also an active member of important regional actors like HELCOM and forums like Baltic Agenda 21.

The **European Environment Agency (EEA)** was launched by the European Union in 1993 with a mandate to orchestrate, cross-check and put to strategic use information of relevance to the protection and improvement of Europe's environment. The main objective of the EEA is to provide the European Community and its member states with objective, reliable and comparable information at the European level enabling them to take the requisite measures to protect the environment, to assess the results of such measures and to ensure that the public is properly informed about the state of the environment.³³ Moreover, the objective of the EEA is, to that end, to provide the necessary technical and scientific support.

The first Convention on the Protection of the Marine Environment of the Baltic Sea Area, **Helsinki Convention** was signed in 1974 by the coastal states of the Baltic Sea at that time. In 1992, a new Convention was signed by all the countries bordering on the Baltic Sea and by the European Economic Community. The governing body of the Convention is the Helsinki Commission – **Baltic Marine Environment Protection Commission** – also known as **HELCOM**. HELCOM adopts recommendations to be incorporated in the national legislation of the member countries, launches international programmes and projects and carries out assessments concerning the Baltic Sea area.

BOX 2: European Environment Agency (EEA) ³³

Current membership of the European Environment Agency includes all 15 EU states, as well as Iceland, Liechtenstein and Norway. The geographical scope of the Agency work is not confined to member states of the EU; membership is open to other countries that share the concerns of the EU and its member states and the objectives of the Agency.

The EEA is currently developing the European Environmental Reference Centre (E²RC). By developing it the EEA aims to establish a public information service that will be recognised throughout Europe as the main gateway to access easily understandable and well structured environmental information, wherever possible in the user's native language. The E²RC will be launched in the autumn 1999 and will include a series of WWW based services to facilitate public access to information.

The job of data handling, analysis and assessment is not centralised in the EEA but is done by national monitoring centres and other bodies in the European Information and Observation Network (EIONET). The EEA assesses the resulting data and information and distributes them in a streamlined form to would-be users. The EEA also has a duty to ensure the broad public dissemination of these conclusions through regular state of the environment reports, specialised assessment and bulletins and by other means.

Under the HELCOM activities, the **Baltic Sea Joint Comprehensive Environmental Action Programme (JCP)** was approved by the ministers of the environment in 1992. Under the JCP in the Baltic Sea catchment area 132 polluting so-called hot spots were defined, from which 17 have been deleted until now. In the future the activities under the JCP will be even more focused on removing the hot spots from the list. The hot spots include traditional point sources of pollution such as municipal and industrial sources, as well as non-point sources from agriculture, rural settlements, and land-based transportation. Reducing the harmful effects of the hot spots associated with municipi-

BOX 3: HELCOM

Main HELCOM activities

Assessment activities:

- I Periodic Assessments (every 5 years)
- II Pollutant Load Compilation (every 5 years)
- III Thematic reports (annual/biennial)

Other activities:

- I Marine environmental monitoring and quality assurance in accordance with the COMBINE Programme
- II Nature conservation, biodiversity and Integrated Coastal Zone Management
- III Evaluation of waterborne and air-borne pollutant loads from land-based sources
- IV Elaboration of technical measures to reduce discharges into water and emissions into air from urban areas, industry and non-point sources
- V HELCOM Recommendations and follow-up of these Recommendations, including harmonization of regulations between HELCOM and the EU
- VI Prevention of pollution from ships
- VII Elaboration of cooperative actions in combatting of oil spills and other harmful substances
- VIII Implementation of the Joint Comprehensive Programme (JCP) with the focus on the polluting hot spots
- IX Providing specialized information and analysis as a basis for technical design, political adoption, public acceptance and environmental evaluation of measures to protect the Baltic Sea marine environment.

pal and industrial pollution has been relatively successful, although it proved to be difficult in some cases, partially due to financial and technical reasons. Reducing the non-point source pollution has turned out to be a challenging task. This task is directly connected to the level of environmental awareness of a vast number of people whose lives exert a direct impact on the state of the environment. For this reason, the sixth element of the JCP concentrates on the issue of public awareness and environmental education. The aim is to develop a broad and sustain-

BOX 4: Baltic Agenda 21

34,35,36

Agenda 21 is a 900 page document describing the way to a sustainable future. Over 100 heads of states agreed on strategies for solving some of the greatest problems the world is facing; destruction of resources, increased poverty and ill-health. The aim of Agenda 21 is that all municipal areas and cities (local level) create their own action plan adjusted to their special needs and circumstances.

Baltic 21 was adopted by the CBSS (Council of the Baltic Sea States) in June 1998, as a local Agenda 21 for the Baltic Sea area. It focuses on the sectors of agriculture, energy, fisheries, forests, industry, tourism, transport and spatial planning. It consists of, among others, an action programme, as well as goals and visions for the Baltic Sea and its environment.

able base of support for the implementation of the JCP and for environmental protection policy issues in general.

Baltic Agenda 21 is an international forum which plays an important role in the Baltic Sea area. Agenda 21 came into being during the first Earth Summit, the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. One of the goals of Baltic Agenda 21 is for different actors and all levels of society to gain a high awareness of the steps and processes leading to sustainable development. The approach is, therefore, to integrate environmental awareness into all the eight sectors of activities in Baltic Agenda 21.

5.1.2 The changes in the roles of regional and international actors

The political and economic changes which took place in the 1990s had an impact also on the regional and international actors active in the Baltic Sea catchment area. When Finland and Sweden joined the EU in 1995, the EU's

role expanded in this area. The countries currently striving for future EU membership will harmonise their national laws with the EU legislation. The harmonisation process has also, to some degree, stimulated the development of environmental awareness and public participation activities in the accession countries. The EU influence is also apparent through the EEA, which was described in Box 2. Moreover, the EU launches and finances cooperation and development programmes targeted to the countries outside the Union, e.g. Tacis and Phare programmes.

The European Union is preparing to strengthen its “*Northern Dimension*”. This means, among other things, the concentration of more political and financial efforts around the Baltic Sea. The EU member countries situated in the Baltic Sea area have been actively working to strengthen the Northern Dimension within the EU and therefore to improve the relations between the EU and Russia. Russia emerged as a new state along with Belarus, Estonia, Latvia, Lithuania and Ukraine after the disintegration of the Soviet Union. The political and economic changes in Russian society strongly affect the organization and financing of the dissemination of environmental information, and of environmental education and other awareness-raising activities. Also the severe economic crisis that Russia faced at the end of the 1990s, means that progress in improving the situation will continue to be slow. The above mentioned factors increase the importance of international cooperation in these fields of activity. It is important to seek out partners from different interest groups and build up cooperation and synergy among them.

The Northern Dimension concept is still evolving in and developing towards a more practical direction. On the basis of the conference results of the foreign minister-level during Finland’s presidency of the EU, in autumn 1999, the European Council is expected to

decide on any subsequent measures to make the content of the Northern Dimension more tangible.

5.1.3 Availability of environmental information and public participation

There are many factors, which determine the availability and accessibility of environmental information in the Baltic Sea catchment area. One of them is the **lack of** comparable, reliable and relevant **environmental information**. Very often also the existing data cannot be compared because **different monitoring systems** were used for collection of data. For this reason, the task of harmonising the monitoring and assessment systems, collecting data, setting up databases, preparing informative reports and public information handouts, and delivering these to the various interest groups and through the public information channels has been very demanding for the various international, governmental, business and public organizations around the Baltic Sea.

Another problem is that the existing environmental information is unequally available in the different subregions. For the most part, the reason is that although the development of technology offers new opportunities, such as better telecommunications and the integration of multimedia, the **financial problems** facing some of the countries reduces the chances to buy and use expensive equipment, and to buy books and other printed materials.

Some of the new and relevant environmental information has been excluded from the public domain and discourse, because of the “**knowledge competition**” between businesses and research institutions, including some public universities. Even though environmental management systems and environmental reporting are supposed to provide information on companies’ environmental performance,

BOX 5: Northern Dimension ^{37,38, 39}

Through the enlargement of the EU, the Baltic Sea will become a main internal waterway of the Union, which is one reason why the Northern Dimension is important to the EU. Moreover, the Northern Dimension initiative arose largely from the fact that the EU now shares a common border with Russia. By means of addressing cross-border problems and investigating the opportunities in the Baltic Sea and Barents regions, the Northern Dimension can contribute to the implementation of the EU's general Russian policy.

The Northern Dimension initiative builds upon existing Union instruments, programmes and financing, and upon international agreements. The Northern Dimension concept should be incorporated where there is clear added value, within the existing instruments and frameworks (such as TACIS and PHARE).

The added value of the Northern Dimension initiative can be summarised under eight categories:

- Energy and raw materials – studying the possible future construction of new gas pipelines from north-west Russia.

Moreover, north-west Russia is rich in minerals and in forest resources.

- Environment and nuclear safety – promoting the sustainable development of the countries in the region by integrating environmental considerations in other activities. Reducing nuclear risks in north-west Russia, which has approximately 150 nuclear submarines.
- Cross-border cooperation – improving border procedures and preventing illegal trafficking.
- Trade – removal of trade barriers.
- Transport and communication – developing the region's transport infrastructure, telecommunications and postal infrastructures, and increasing access to the Internet.
- Health and other social issues – improving public health systems, fighting against communicable diseases and drug abuse.
- Research – promoting opportunities for young research workers.

some high technology companies are imposing restrictions on new environmental information because of competition with other companies. This problem manifests itself especially in such rapidly developing fields as biotechnology and genetic engineering, but it is also seen in traditional engineering dealing with environmental technology and in the nuclear and military industries. Moreover, in all the countries considered, a new trend has appeared where research institutes or the public administration, which are generally financed by the tax payers, **charge fees** for the previously free data and information they produce.

The accessibility of environmental information in the Baltic Sea area is also determined by the existing **language barriers**. For instance, much of the international work in the Baltic area, like HELCOM's work and Baltic Agenda 21

is done in English and documents are issued in English, as well. This is an obstacle for many people, even though English-language skills have lately become more common in this area. The non-EU countries' inhabitants face the same problem with the EU documents, although most of the major documents are translated into several languages spoken in the EU. Environmental information originating in the non-EU countries is mostly in their native languages – as well as national information all over – which makes it difficult to obtain and utilise by outsiders.

In some Baltic Sea area countries, problems with obtaining environmental information stem from previous **restrictive** administrative and political **practices**, which are slowly changing to be less restrictive.

All the above-mentioned factors have influenced the ability of the decision-makers and the public to take en-



European Commission: 95-240-11a

environmental concerns into account in their working lives and everyday lives.

An important step in improving the situation is the Convention on Access to Information and Public Participation, which is also called **Århus Convention**. It is a binding and legislative instrument, which will help to establish more open practices in distributing environmental information and facilitating public participation.⁴¹

In the European Union countries the public's basic rights to receive environmental information are secured in accordance with the EU Directive on **Access to Environmental Information** (90/313/EEC), presently under revision. This directive also specifies reasons for non-disclosure of documents and other information. Another important EU directive with large-scale effects on the access to and spreading of environmental information and hence raising awareness is the **Eco-Management and Audit Scheme (EMAS)**.

The public's right to access to European Parliament, European Council and European Commission documents was established in the **Treaty of Amsterdam** – agreed on by the Member

States of the European Union in June 1997 and was ratified in May 1999.⁴³

The Treaty of Amsterdam provisions reflect, among others, the cross-border nature of environmental problems and stress the importance of public support for action at the European level. According to the Treaty, the achievement of sustainable development becomes one of the explicit objectives of the Union. One means of promoting sustainable development is the integration of environmental protection requirements into the definition and implementation of all Community policies.⁴⁴

5.2 Subregional situation

While the multitude of languages divides citizens throughout the region, there are many features that are shared by the subregional groups of countries like, for instance, their financial situation, international cooperation partners or environmental policy development. The development of environmental policy varies noticeably in the different subregions.

BOX 6: Århus Convention ⁴¹

The UN/ECE Convention on Access to Information and Public Participation submitted by the United Nations Economic Commission for Europe, was signed by the Fourth "Environment for Europe" Ministerial Conference on June 25th, 1998, in Århus, Denmark. Signatories before June 1999 comprised the European Community and 35 countries, including the Czech Republic, Denmark, Estonia, Finland, Latvia, Lithuania, Norway, Poland, Sweden and Ukraine.

According to the Convention, the adequate possibilities for public participation require:

- access to information,
- a right to participate in the decision-making process, and
- access to justice.

One of the principle goals of the Århus Convention is to make people aware of their established rights to access to information, public participation in decision-making and access to justice in environmental matters. The Convention should strengthen the position of the public in obtaining the necessary environmental information in most countries in the Baltic Sea catchment area. Additionally, democracy and human rights should benefit from the processes subsequent to the implementation of the Århus Convention. However, the technical development of necessary information systems will take time. It will also take time to develop open administrative practices as suggested in the Convention.

Box 7: EMAS ⁴²

Eco-Management and Audit Scheme (EMAS) Directive (EEC/93/1836) was devised by the European Communities and came into operation in 1995. It was designed to invigorate the adoption of good environmental management practice in industry, including such methods as life-cycle analyses, integrated pollution control, materials and product substitution, recycling and environmental impact assessment.

EMAS requires an Environmental Policy to be in existence within an organization, fully supported by senior management, and outlining the policies of the company, not only to the staff but to the general public and other stakeholders. Information about the policy should be publicised in non-technical language so that the majority of readers can understand it. Additionally, the company has to conduct an environmental review of its operations, establish a programme, implement comprehensive environmental management systems and conduct regular environmental audits of its activities. The audits are to provide additional information in order to exercise effective management of the system and offer an opportunity for improvement. Under EMAS the bare minimum frequency for an audit is at least once every three years. EMAS is not a legally binding but a voluntary practice, that includes a wider publicity than ISO standards. It is useful for companies in their strategy building, management and marketing.

The countries of **subregions 1 and 2** are currently undergoing a process of **environmental policy formation**. In subregion 2 – which embraces the EU applicant countries – the national environmental legislation is being harmonised with the EU legislation and the EU environmental practices are being adopted.

The current stage of environmental policy development in **subregion 3** is **policy evaluation**. For these coun-

tries it is important to evaluate the results of international conventions, programmes and initiatives influencing the environment – their achievements and weaknesses. They are also developing further economic and financial means, regulation as well as information for coordinating and directing the market mechanism towards sustainable practices e.g. in energy and climate policy.

5.2.1 Subregion 1 (Russia, Belarus and Ukraine)

- The development of civil society and democracy constitute important presuppositions for promoting and implementing effective environmental policy and for increasing environmental awareness in this region.
- The role of different official organizations in producing and distributing environmental information and organising environmental education and training has been growing. However, there exists a need to accelerate the development. Economic difficulties restrict the planning and implementation of environmental awareness activities.
- The official activities in financing, organising and maintaining initiatives and projects for increasing environmental awareness remain insufficient.
- Different combinations of actors from non-governmental organizations, the media, business, and professional organizations are currently active in the work of raising environmental awareness.
- International cooperation in various investment and other initiatives have a tendency to increase environmental awareness because the project framework or the preconditions of the financing often demand environmental considerations.
- International cooperation enhances the motivation to act, while promoting environmental awareness and helping to carry out action programmes and projects.

- There are several environmental projects in subregion 1 which are in need of financial assistance from abroad. External support is often necessary to help keep the basic project functions operational.
- Since the banking system is still developing in this subregion, money flow is often unpredictable.
- In many international projects the national and local cooperating partners, for different reasons, have sometimes encountered difficulties in carrying out their share of the work.

5.2.2 Subregion 2 (Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia)

- Application for EU membership has stimulated the development of national and international coherent environmental policies, and has motivated national institutions to join, support or initiate international and national environmental projects and other activities.
- The adoption of the EU legislation and standards involves high costs.¹ Therefore, EU financial support is an important factor in the adjustment process.
- There are several environmental projects and initiatives in subregion 2 which are in need of financial assistance from abroad.
- International cooperation in various investment and other initiatives have a tendency to raise environmental awareness because

the project framework or the pre-conditions of the financing often demand environmental considerations.

- International cooperation enhances the motivation to act, while promoting environmental awareness and helping to carry out action programmes and projects.

5.2.3 Subregion 3 (Denmark, Finland, Germany, Norway and Sweden)

- The European Union plays a relevant role in supporting international projects and other activities that would have been difficult to implement before the last EU enlargement in 1995.
- The Northern Dimension in the EU policy (See Box 5) will offer considerable extra support and

resources for the international cooperation around the Sea.

- The Nordic Council has been the traditional forum for cooperation among the Nordic Countries. The Nordic practice of making information available makes it easy for people to increase their environmental awareness. The Nordic countries are thus clearly striving for open access to information, also within the EU framework.
- International cooperation is active since most of the professional and specialist organizations are involved nearly everyday with international contacts.
- The level of public participation within subregion 3 is relatively high. There are several independent environmental NGOs, as well as NGOs partially supported by the state, the EU, or the public.



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6

The need for environmental information and education

The inhabitants of the Baltic Sea area influence the state of the environment in their private, professional and political lives (see Fig. 2.4). In all cases individual decisions often touch on vital environmental matters. Therefore, the higher the level of environmental awareness, the more sustainable choices are likely to be made and, in consequence, the better the state of the environment.

Since the countries of the Baltic Sea area have different characteristics of the stages of environmental awareness (as discussed in the chapter 2), the already existing and potential demand for environmental information, education and training is extensive and variable.

6.1 Regional needs for environmental information and education

6.1.1 Public environmental information

According to the respondents of the questionnaire in this project, easily **comprehensible** and **comparable basic information** about the **state of the environment**, and its influence on health and the trends in this field, is constantly needed among the inhabitants of the Baltic Sea area.¹ There is a **need to compare** the condition of the local environment with other areas. People are interested in the condition of their surrounding environment be-

cause it exerts a direct impact on their and their children's health and well-being. This fact is often as the stimulus for generating a basic interest in environmental problems. According to the studies conducted, the increasing need for environmental information is often based on health concerns especially in subregion 1, which includes large areas suffering from acute environmental problems.

Once people become worried about the state of the environment, they need information on how to stop the deterioration of the environment and on what their role in this process might be. For this reason, basic information is needed enabling sustainable everyday life practices, such as advice on decreasing water consumption or sorting household waste for recycling purposes. People also begin to demand ecologically clean food and environmentally-friendly products. For the basis of their decisions, consumers need clear environmental information about products and services as well as their actual environmental costs.

Environmental product information should be included in product declarations.

See Chapter 9, the corresponding item no. 5.7

Eco-labelling and certification should be widely applied.

See Chapter 9, the corresponding item no. 5.8

Enhancing consumers' environmental awareness is one of the goals of Agenda 21 for the Baltic Sea area. However, this aim has not usually become a priority for European and national administration – not even consumer organizations. Most consumer organizations still work merely as expert organiza-

tions and not as active campaigners for enhancing consumers' environmental awareness.

Consumer organizations should be founded and other organizations should be taking up environmental consumer issues.

See Chapter 9, the corresponding item no. 5.9

Consumer organizations might participate more actively in building environmental awareness in consumers in the Baltic Sea area. They could strengthen the awareness of the public administration, businesses community and consumers of the fact that environmental quality is an indispensable part of the total quality of goods and products during the production process and during a product's life cycle.

In a democracy, access to environmental information is considered to be a given right. Such information is needed, for instance, while making voting decisions. Those people who actively seek environmental information benefit from the Århus Convention (See Chapter 5, Box 6) resolutions.

Information on the application of the Århus Convention should be made available; information that is public in accordance with the Convention, should be made available.

See Chapter 9, the corresponding item no. 1.2

The implementation of the Århus Convention creates new challenges and possibilities to reduce the differences in the access to information, the scope of public participation in decision-making and the access to justice in environmental matters. Therefore, information on how to implement the Århus Convention should be prepared and disseminated, and relevant environmental material should be made available in accordance with the Convention.

At the moment there are no measurement methods for assessing the level of environmental awareness that could be applied internationally. Because of the abstract nature of the environmental awareness concept, it is



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difficult to define suitable indicators. Therefore, more extensive studies must be conducted in this field.

International measurement methods should be developed and used for assessing the level of environmental awareness; assessments should be made of environmental awareness levels in the Baltic Sea area countries.

See Chapter 9, the corresponding item no. 1.3

6.1.2 Public environmental education and training

Environmental education and training opportunities both for children and adults have grown within the region. This is due to the actual need for personal and professional environmental information among individuals. Environmental awareness should be nowadays considered a valuable part of individual personal development. **High environmental awareness** in the public leads to both **economic and ecological benefits** in the society. For example, the export of German environmental know-how is very strong: Germany is the world's leading exporter of environmental protection technology, with a global market share of 18.7 per cent, closely followed by the USA with



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18.5 percent (1995).⁴⁵ Such economic benefits are obtained mostly in subregion 3, but also to some extent in the other subregions. The growing realization of the economic and ecological benefits in the society as a result of higher environmental awareness has considerably increased the **status of environmental education** on different levels of the educational system - kindergartens, primary and secondary education and universities. This in turn has improved the contents and pedagogic practices within this field of education. However, in spite of the positive direction of the changes, the amount and the level of environmental education varies across the region. Many potential activities face obstacles in some of the countries because of economic difficulties.

Kindergartens

Environmental education and training in kindergartens should be supported with appropriate teaching material and facilities.

See Chapter 9, the corresponding item no. 5.10.

Environmental education and training should already start in pre-school. The kindergarten itself and its immediate surroundings offer many possibilities

to make children acquainted with environmental matters. The everyday functions of institutions such as food preparation, waste management, heating or cleaning can be used as good examples promoting sustainable practices and ideas. Kindergartens need proper facilities for this kind of activities. Furthermore, taking care of the plants and vegetation outside the building, or handling the compost pile can be included in children's daily routine. The new skills and ideas learnt in kindergarten can be subsequently adopted at home and indirectly have an impact on the environmental awareness of the parents.

In order to improve the possibilities of raising environmental awareness at the pre-school level of education, it is important to provide the administrators with adequate training and a set of instructions and advice on how to run an environmentally-friendly kindergarten. The kindergarten teachers should be trained and should receive ready-made educational material including examples of games and activities which develop environmental awareness in children. Parents should be informed about the importance of an environmental education and training, and should be actively involved in the process.

Schools and secondary education

Schools should be supplied with integrated environmental curricula, material, training and facilities.

See Chapter 9, the corresponding item no. 5.11

Environmental education at school is the next stage of enhancing children's environmental awareness. In principle, two mutually interactive levels of activities contribute to it. First, the very organization of environmentally friendly schools and, second, the content of an environmental education. As in kindergartens, the school administrators should be trained and provided instructions on sustainable management methods; and the schools should have

appropriate facilities for sustainable practices. Schoolteachers should from beginning of their basic studies be trained in order to apply the sustainable issues and activities in all education and practice. Moreover, the support of the parents, NGOs and the local administration plays an important role. At this level it must be remembered that children could find nothing more discouraging than, for example, witnessing their carefully sorted “waste” being dumped in an ordinary landfill as mixed garbage.

The success of environmental education depends to a large degree on good professional skills of the teachers and an appropriate curriculum. For this reason:

- teachers’ environmental education capacity should be ensured throughout their whole professional career by integrating environmental concerns to other subjects
- easily applicable environmental education curricula and educational material should be prepared and distributed by the ministries of education.
- networks between schools, administration, NGOs and homes should be built up.

Schools with environmental programmes do exist – in different forms and under various names (e.g., Baltic Sea Project, Globe Project) – in most countries around the Sea. These schools have often served as development sites for curricula, methods and material for environmental education. Other schools can take advantage of the experience and expertise of these specialised schools when setting up their own environmental education programmes.

Universities, institutes and public education for adults

Universities, other public education institutes for adults and research/development institutes should be supplied by in-

tegrated environmental training, curricula and study material as well as facilities.

See Chapter 9, the corresponding item no. 5.12

Sustainable development has to be integrated into all study programmes and particular courses. For this reason, lecturers need training and assistance in planning environmental education material and courses. Easy-to-use education material with accompanying visual aids, such as video or CD-Roms and information on Internet sites is needed. Therefore, packages of general environmental material for teachers and researchers in the regional level should be produced.

The environmental education material could be adapted to more specific local or professional conditions (with local examples) and translated to local languages for the purposes of schools, universities and other institutes. Therefore, useful environmental education material would be created in a cost-effective way by utilising already existing material from other countries.

Universities and other institutes should also be managed sustainably. One possibility that is considered is implementing environmental management systems at universities, higher education institutes as well as research/development institutes.

6.1.3 Professionally-oriented environmental information

In the project questionnaire respondents gave their opinions about the **factors that increase the need of environmental information**.¹ The need for environmental information is considered to increase, especially because of cooperation with the European Union and staying professionally up-to date. These are among the most important factors in all professional groups. Other international cooperation, saving resources, legislative changes, health reasons, policy changes and customers demand are, in this order, the next important factors.

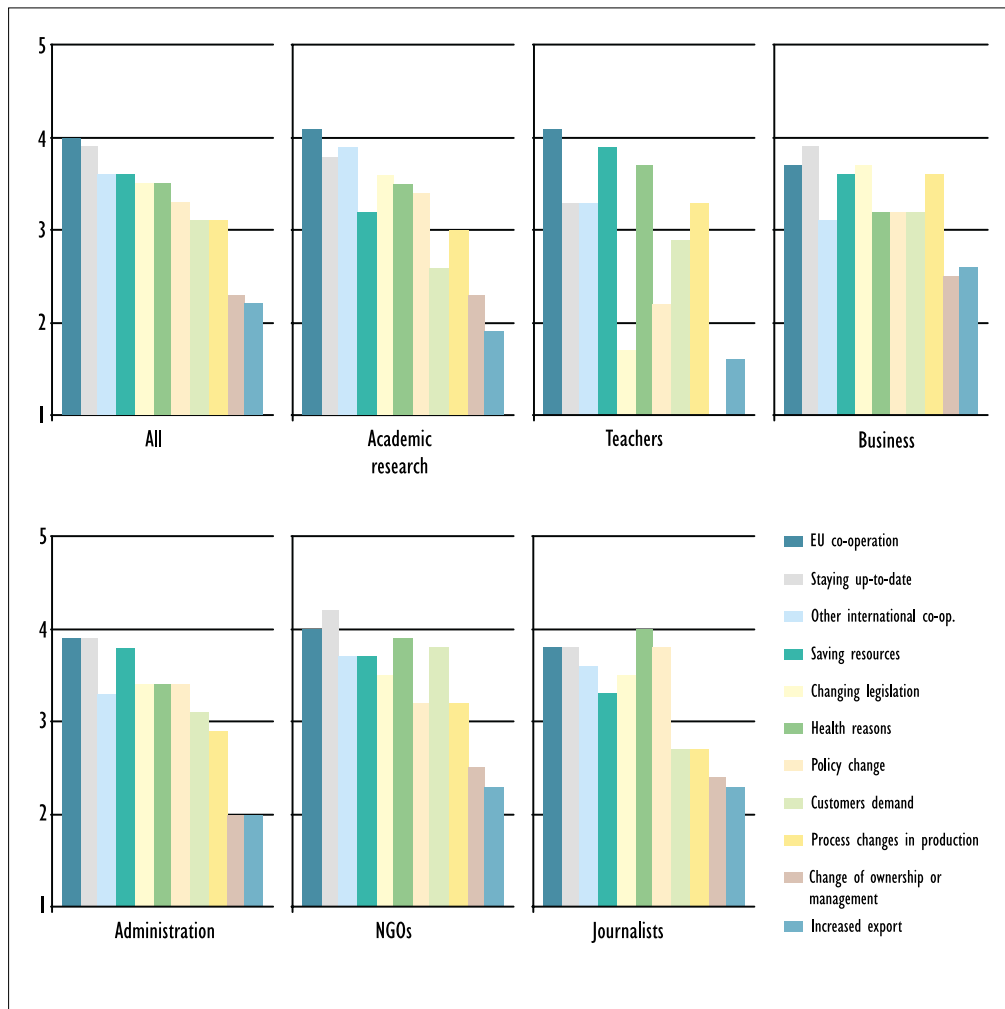


Figure 6.1. Factors increasing the need of environmental information in respondents (138) field of work. Comparison between different professional groups. Scale of evaluations: 1 = “not at all”, 2 = “not very much”, 3 = “to some extent”, 4 = “quite much” and 5 = “very much”.

Following distinctions can be made, when comparing the answers from different professional groups (see Fig. 6.1):

- The importance of the cooperation with the European Union (EU) is rather equally important in each professional group.
- For academic researchers the most important factors according to the respondents are the EU and other international cooperation as well as staying up-to-date
- For teachers the EU cooperation, saving resources and health reasons seem to be the most important factors
- For business, industry and trade the most important factors are staying up-to-date, cooperation with the European Union, changing legislation, saving resources and process changes in production
- For administration the most significant factors that increase the need of environmental information are the EU cooperation, staying up-to-date and saving resources
- For NGOs the most important factors are staying up-to-date, the EU cooperation, health reasons and customers demand
- For journalists the most important factors according to the respondents are health reasons, the EU cooperation, staying up-to-date, and policy changes.

Experts, professional groups and interest organizations in the Baltic Sea catchment area should have access to the core information concerning environment and environmental awareness around the Baltic Sea. This information – so-called **backbone information** – will be discussed in chapter 7.1 (p. 72).

6.1.4 Professionally-oriented environmental education and training

Professionals expertise for understanding, analysing and evaluating environmental issues in their work needs to increase. Professionals often need training in order to improve their knowledge and enhance motivation to more sustainable practices in their work. In environmental communication the networks between different professional groups are efficient on all levels. For instance, establishing and maintaining environmental management systems require broad and continuous education and training of the whole personnel. In this chapter the need for professional education is discussed separately for each professional group; for teachers and researchers see chapter 6.1.2 and for people working in NGOs see chapter 7.1.4.

Business organizations

Environmental knowledge and sustainable skills are effectively spreading through business to business activities – such as demands of environmental certificates and sustainable practices for subcontractors – , gradually reaching small companies also. Still, the situation in different subregions varies a lot. Education and training within various industrial associations and separate enterprises is very challenging. This education should include laws and regulations concerning environment as well as the technical and other possibilities to act accordingly. The main aim, especially in subregions 1 and 2, is to increase the



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environmental awareness inside the industry and business itself.

Environmental policies and programmes including education and training should be established for local and international business and industrial companies, preferably as integral parts of environmental management systems and investments projects.

See Chapter 9, the corresponding item no. 5.5

New means of disseminating environmental information and improving environmental education within business and industrial organizations have recently begun to be adopted throughout the whole region. For example, environmental management systems, such as the ISO 14001 standard and the EU's environmental management and audit scheme (EMAS) have become more and more common in European business and industrial organizations.



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Organizations implement these systems to improve their environmental performance. Environmental education and training are integral parts of the environmental management systems. Environmental management systems have therefore a noticeable impact on environmental education and training all over the Europe.

The use of environmental management systems in business and industrial organizations offers opportunities for the present and potential future EU member states in the Baltic Sea area. According to the respondents, subregions 1 and 2 exhibit a strong interest in promoting similar phenomenon throughout all subregions for competitive reasons and for gaining experience in business. One step in achieving this goal is improving the networking between business in the whole area.

Environmental networking between businesses in different subregions would play an important role in the exchange of information and experiences from one subregion to another.

Success stories in combining environmental and business performance need to be well disseminated from one subregion to another.

See Chapter 9, the corresponding item no. 5.6.

The understanding of possible benefits resulting from interaction between environmental and business performance has to be improved, especially in the subregion 1. The need for environmen-

tal information and training for business organizations in the Central and Eastern European (CEE) countries ought to be evaluated. According to the respondents, information about environmental material and training possibilities should be distributed directly to the people responsible for environmental and information matters in private enterprises in the CEE countries.¹

Cooperative projects between national and international business information organizations and Chambers of Commerce would probably have the best chance for success in designing, establishing and implementing environmental awareness programmes in business and industry.

Journalists

One of the characteristics of a democratic society is the free flow of information. To this end, journalists play an important role. All journalists would benefit from greater knowledge of environmental topics and from environmental education.

Key environmental, economic, international, political, etc. journalists should be trained and should be offered exchange programmes.

See Chapter 9, the corresponding item no. 5.14.

Journalists specialising on environmental issues should be able to integrate economic and international aspects into their work. For this purpose, they need adequate training and information. Promoting networking between journalists writing on environment might also improve the situation.

On the other hand, political journalists and journalists writing on economic, general and international matters, often lack sufficient basic knowledge on key environmental issues. More environmental information and up-to-date background material that is written in their "language" and in a journalistic style with graphs etc. would help them to include environ-

mental aspects in their articles or news reports. Moreover, personal contacts and training courses should also be included in environmental education.

The exchange of documents, videos, or programmes on environmental matters for the purposes of media should be organised through established networks of interested actors in the Baltic Sea area; this will be discussed more in chapter 8.1.2.

Administration and political decision-makers

Environmental education and training for administrators and political decision-makers should be promoted.

See Chapter 9, the corresponding items no. 5.1 and no. 3.5

Administrators and political decision-makers should be supported concerning cooperation and communication with other actors of the society.

See Chapter 9, the corresponding items no. 5.2 and no. 3.5

The administrators and political decision-makers need the abilities to analyse the main trends of the state of environment and the matters influencing them. They need to understand what is important and what is their own role in striving to good environment. The administrators and political decision-makers should be given training in environmental matters and should be encouraged to take environment into account in decision-making in their own fields of specialities. Environmental awareness should be an integral part of the professional skills of the administrative staff. In general, the administrators and political decision-makers should also be able to see the civil society as an open society made up of many important actors, and they should comprehend the society's need for information and cooperation. The willingness to communication increases through understanding the essentiality of environmental matters.

Farmers

The ways and means of encouraging farmers to become more interested in and concerned about the environment has been widely discussed. One solution has been to take a regulatory approach through national legislation and EU directives, as well as applying financial incentives along with the market mechanisms (see Fig. 2.1). For instance, in the EU countries of the Baltic Sea catchment area, farmers are increasingly required to take the environment into account for financial and marketing reasons, such as to receive agricultural production subsidies or to meet the demands of important consumer groups.

Farmers should be assisted in sustainable agricultural practises and in maintaining them.

See Chapter 9, the corresponding item no. 5.3

Ecological farming should be promoted.

See Chapter 9, the corresponding item no. 5.4.

Farmers may benefit more from environmental education and training if its content is closely linked to their professional concerns and local habits. Local advisory networks, farmers cooperatives and associations and the tradition of caring for one's own land, since a farmer's livelihood depends on land, can help and provide motivation for sustainable practices.

6.2 Subregional needs for environmental information, education and training

As mentioned in the chapter 6.1.3, the project questionnaire respondents gave their opinions about the **factors that increase the need of environmental information** in their field of work. The need for environmental information was considered to increase especially

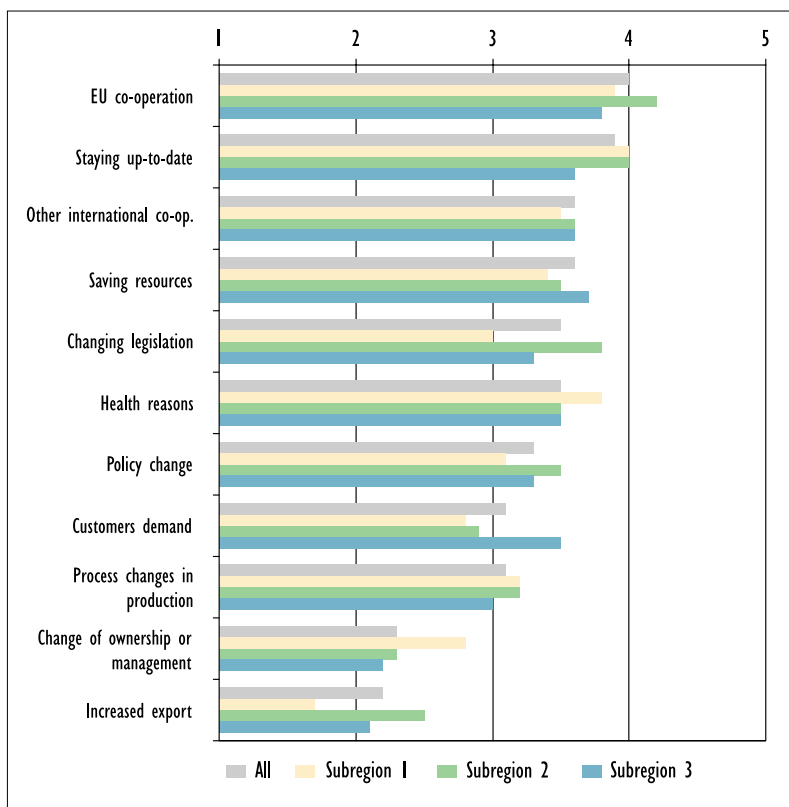


Figure 6.2. Factors increasing the need of environmental information in respondents (138) field of work. Comparison between different subregions. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

because of **cooperation with the European Union and staying professionally up-to date**. These are the two most important factors in all regions. The next important factors were considered to be other international cooperation, legislative changes, saving resources, policy changes, health reasons and customers demand. When comparing the questionnaire answers between different subregions, the following distinctions can be made (see Fig. 6.2):

Subregion 1:

- Staying professionally up-to-date and the EU-cooperation seem to be the most important factors increasing the need of environmental information
- **Health reasons** are estimated to be the third important factor, and are more important than in other subregions.
- **Change of management/ownership** is ranked here higher than in any other subregion. This is probably because of strong structural changes happening both in private and public sectors.

Subregion 2:

- The order of the most important motivating factors is quite similar to the medium order of factors among all respondents within the whole region.
- Staying professionally up-to-date and the EU-cooperation seem to be the most important factors increasing the need of environmental information. The value of the EU cooperation is noticeably strong, probably due to the application for the EU membership.
- **Legislative changes** are considered to be the third important factor in this subregion. This is probably because the legislation has been changing rapidly due to the EU harmonisation.



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Subregion 3:

- Staying professionally up-to-date and the EU-cooperation are the most important factors increasing the need of environmental information.
- **Saving resources** is the third important factor, and far more remarkable than in other subregions.
- According to the respondents **customers demand** is noticeably higher than in the other two subregions. This is probably because of the existing well developed market economy with active consumer and customer pressure.

The questionnaire respondents also gave their opinions about **the factors that decrease the ability or motivation to use more environmental information in their field of work.**

Disharmonious legislation, information overload – probably often combined with **too many things to cope with** – and **bureaucracy** are according to the respondents the most important reasons discouraging the use of environmental information in their field of work. In addition, sometimes respondents considered the low priority of environmental issues at work, lack of knowledge in own or other organizations, corruption and lack of competition to be quite or very important factors decreasing the use. When comparing the questionnaire answers between different subregions, the following distinctions can be made (see Fig. 6.3):

Subregion 1:

- According to the respondents, bureaucracy is the strongest de-motivating factor in the subregion 1.
- Disharmonious legislation is here a very important factor.
- Corruption was also experienced more heavily than in the other subregions.
- Lack of knowledge in ones own organization seems to be a strong de-motivating factor.

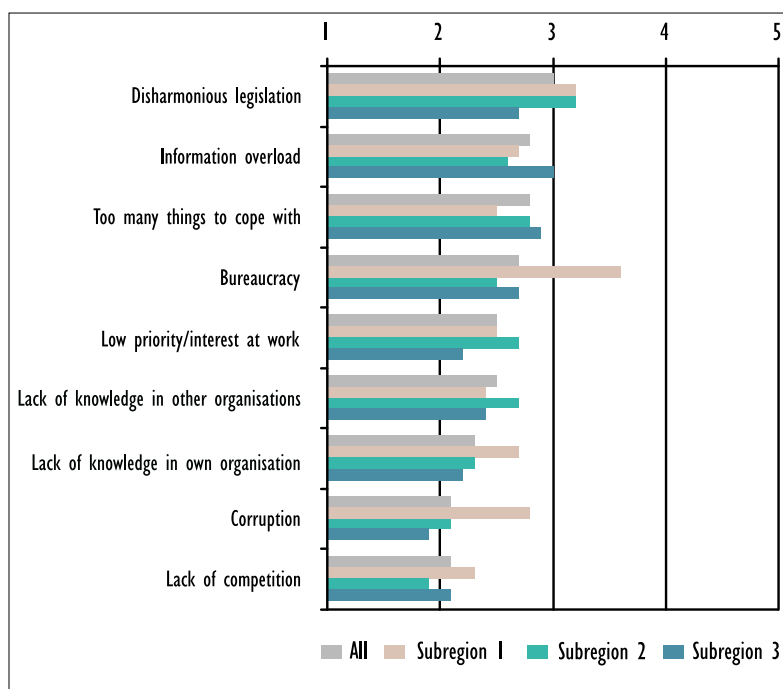


Figure 6.3. Factors decreasing the ability or motivation to use more environmental information in respondents (138) field of work. Comparison between different subregions. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

Subregion 2:

- Disharmonious legislation is according to the respondents a very important factor.
- Low priority at work and the lack of knowledge in other organizations seem to be important factors, too.

Subregion 3:

- Information overload is considered to be the most important factor along with too many things to cope with. Both of these factors were more heavily present than in other subregions.

As mentioned earlier in chapter 2, the countries in the Baltic Sea area are in different stages of environmental awareness. In subregion 1 health concerns and a feeling of helplessness among individual citizens prevail. The social and economic circumstances, characterised by, among others, insufficient environmental legislation and

the need for development of administration and environmental monitoring systems are at present challenges to the acquiring of environmental awareness.

Public environmental awareness, education and training have developed rapidly in subregion 2. The process of democratisation and applying for EU membership have given new impetus to improving the state of the environment and environmental management at every level of the society. National environmental legislation is being harmonised with the EU legislation. Environmental monitoring and information systems are being set up and new comprehensive national environmental policies and programmes are being implemented. Moreover, every country in this subregion signed the Århus convention on public participation and access to information.

Applying for EU membership and taking part in other international cooperation should be fully utilised in environmental awareness work.

See Chapter 9, the corresponding item no. 2.1

Cooperation between different subregions in environmental awareness issues should be promoted.

See Chapter 9, the corresponding item no. 2.2

The environmental legislation and administration are well established in subregion 3 and in a dynamic process of further development. Environmental issues are beginning to be integrated in decision making of various sectors of the society. In this subregion environmental monitoring systems and environmental databases allow for the storage and distribution of information for both official and public use. A lot of information is also comparable because of similar monitoring systems. The EEA organises and coordinates environmental information service for the European Union. This service is meant for national administrations, private sector and the public. In general, the availability of administrative and scientific information for public and business

purposes is quite good, and still improving. The need for more sophisticated environmental knowledge and skills is growing. The threats from hazardous substances, global ecological changes and risks are becoming more evident to the decisionmakers and to general public.

6.2.1 Subregion I (Russia, Belarus and Ukraine)

This subregion would benefit most from a wide variety of basic and general environmental information. Also specialised information from many fields of study is needed.

According to the respondents, the need for environmental information in this subregion includes for example:

- Basic **scientific** information on pollution prevention and the changes in the state of the environment; for instance, radioactive contamination and chemical pollution, the state of the Baltic Sea environment and respective mathematical modelling of water bodies; general, comparable statistical emission information, and changes in the flora and fauna in polluted areas; comparative environmental data from other European countries.
- Basic **technical** information on pollution prevention and energy production; for example, waste water treatment and relevant technology, technologies for preventing the discharge of substances that cause eutrophication (e.g. denitrification), alternative energy production methods; spatial planning in urban areas; environmental management and quality systems, EMAS-level of environmental quality information.
- **Political** and **social** issues, for example, problems in urban areas; information on legislation, local, regional and national admin-

istrations; research results, and the right to distribute information that might be considered classified or otherwise is not made public – and information on environmental conflict resolution methods, nature reserves, and environmental education programmes.

- **Economic and administrative** information on; for example, financial assistance for environmental projects and European cooperation; environmental taxation or fees; business offers of environmental technology, and economic effects of environmental pollution and damages; education/training systems; possibilities to integrate various forms and levels of environmental administration.

6.2.2 Subregion 2 (Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia)

Subregion 2 needs multi-disciplinary and rather sophisticated environmental information along with the general and basic information.

The respondents in this subregion stated for example the need for the following information:

- **Scientific information** about the state of the environment in the Baltic countries and in Europe, HELCOM documents, and reliable scientific research data on pollution and the environment, local emission levels; hazardous wastes and banned chemicals; inland water monitoring (agricultural runoff, semi-urban and rural nitrogen and phosphorus discharges); air pollution from stationary point sources (energy production); health issues relating to the state of the environment and health risks; climate change.

- **Technical information** about; EU and other European legislation and norms; i.e. environmental impact assessment (EIA); environmental management systems and standards (EMAS and ISO 14001); Local Agenda -21; Environmental Technology Databases; waste water treatment, waste processing and circulation; methods to restore the environment; new technologies with proven market potentials; ongoing projects; environmental education methodology.
- Information on **political and social** issues, for instance, public participation and public relations methodologies; environmental policy and comparative legislation and norms in other European countries and the EU.
- **Economic and administrative** information, for example, on ways to control environmental risks in real estate development activities; level of environmental fees for water; project design and financing; contact proposals from international development agencies, financing options.

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6.2.3 Subregion 3 (Denmark, Finland, Germany, Norway and Sweden)

Environmental information needed in this subregion is usually treated as an integrated part of professional skills development. It is often sophisticated and interdisciplinary in nature.

The respondents of the project questionnaire stressed that environmental information should be up-to-date, compatible and reliable. All information on **future developments, early signals** and **raising topics** is considered important. Information which helps to understand the dynamics of ecosystems is in general more needed than barely the information on the state of the environment. According to the studies conducted, the professionals in this subregion need the following type of environmental information:

- **Scientific** environmental data including indicators of water quality; the role of ammonium in the Baltic Sea; industrial and municipal emission levels; information on the causal relation between nutrient loss and pollution; sustainable development in

all societal sectors in the region/ country/ or local community; economic analysis of the consequences of the Kyoto protocol (concerning the climate change) on the national economy.

- **Technical information** like environmental management systems and international standards (EMAS, ISO); Environmental Impact Assessment (EIA); cost-benefit analysis of environmental investments; practical information on implementing Agenda 21; environmental performance of industrial production; pollution control methods; educational brochures and handbooks for professional groups like farmers, teachers, journalists, administrators, business; the contents and results of the public awareness and environmental education projects; comparisons of legislation in different countries.
- **Political and social** environmental information that can be applied to solving environmental problems, especially local examples and initiatives (for educational and public awareness purposes), short summaries "in every field", possibilities for joint international projects and initiatives, advice on how to start municipal garbage awareness campaigns by taking the existing level of awareness into account, ideas about the relationship between politics, the economy and the environment; the latest news on international treaties, sustainable way of life of a citizen.
- **Economic and administrative** information like advice and assistance for farmers who are preparing their environmental plans, information on financial assistance for environmental investments and actions; advice on how to support farmers and other occupational interest organizations in the countries with economies in transition.

6.3 Information for local purposes and public participation

Raising the level of local environmental awareness requires the development of **civil society** and **democracy**. It also needs the existence of **independent local actors**. Such actors should be able to define their positions and opinions according to their own understanding of the problems. Subsequently, they should be able to make independent decisions taking into consideration the local reality.

On the other hand, local and municipal actors ought to have contacts to wider networks and structures in order to get relevant, comparable information and up-to-date views concerning environmental issues.

Individuals should be motivated and trained to adopt environmentally friendly behaviour.

See Chapter 9, the corresponding item no. 4.2.

Active public participation in local decision-making should be promoted.

See Chapter 9, the corresponding item no. 4.3.

According to the results of the analysis of the project questionnaire, local communities need:

- basic information on the state of the local environment compared to other areas
- information increasing the understanding of the socio-economic infrastructure of the community
- information about economic, technological and other means of improving the state of the environment
- information on current projects including the results of the public participation in local decision-making
- information on financing projects and initiatives.



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7

Information producers and distributors

Since many of the Baltic Sea area countries are undergoing major international, political, economic and social changes, the state of the environment around the Baltic Sea is not currently high enough on the agenda. Consequently, there is a lack of practical actions to improve the situation. After perceiving the continuing deterioration of the sea personally on their lives, many people in the area hope that concrete measures to initiate positive changes will be taken soon in the whole catchment area. As a part of this process, several actors should take a more active role in pro-

ducing and distributing environmental information. This task demands a vision for the future which embraces regional information and communication skills.

Promoting **cooperation** between different actors and bodies responsible for environmental information production and distribution is one of the important regional goals that could be included in such a vision. Since the environmental issues are worldwide, there also is a need for wide international cooperation in this field. The production and distribution of environmental information could be shared more holistically. New technologies and new means could be used to achieve these goals. BALLERINA is a good example of these kind of initiatives in the Baltic Sea area.



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7.1 The whole Baltic Sea area

7.1.1 Regional network for raising environmental awareness

Experts, professional groups, politicians and interest organizations around the Baltic Sea should have access to the fresh, high-quality core information increasing environmental awareness. This information – so-called **backbone information** – improves all the elements of environmental awareness: motivation, knowledge and skills for sustainable actions (see Fig. 2.2 and 2.5). The backbone information could embrace the following issues:

- comparable information on the state of the environment as a whole including the abilities to foresee the changes in it, and in

- special actual issues such as algae blooms, oil spills etc.
- the dynamics of ecosystems and the effects of the environmental changes to human activities
- legislation, administrative activities, policy changes, international treaties
- technical and scientific information, about sustainable agriculture, energy, fishery, forestry, industry, tourism, transport, spatial planning environmental restoration etc. with links to numerous related themes and practical interests including public awareness and environmental education
- comparable national and international information on environmental initiatives and studies in particular fields of work
- local, national and international examples of projects
- the possibility for financing and cooperation in project designing and implementation
- possible partners in various fields
- future developments, early signals of change in environmental matters.

In general, the backbone information would serve the target groups like professionals and other decision-makers in the Baltic Sea area through:

- creating a background for understanding environmental issues in the Baltic Sea area,
- functioning as a tool which enables seeking out, comprehending and utilising new information,
- providing possibilities to establish special projects and initiatives which include basic elements of environmental information and education.

A network of actors for Baltic Sea environmental information should be launched.

See Chapter 9, the corresponding item no. 1.1

A regional network for environmental information and communication can



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promote concrete solutions for cooperation in environmental awareness issues, if the main actors support and develop it. Cooperation – even without a fixed strategy – where different visions and actors are activating and supporting each other can save resources and time. For this kind of aim, a regional network of active organizations that carry the elementary backbone information would be a good solution. Backbone information creates a framework which not only enables a person to understand the present state of the environment and the ways to improve it, but also to strive for comprehending and using new relevant information.

In the first phase, the **core of this regional network** should include the international actors which have the strongest financing capacities and other resources, as well as international fora, such as:

- UN: UNEP, UNESCO, UN/CSD
- OECD
- EU: European Environment Agency (EEA)
- Council of Nordic Ministers
- HELCOM
- CBSS
- BALTIC 21
- VASAB 2010.

This core group should aim at harmonising the information systems and at cooperation with other actors, to secure maximal comparability and availability of information in the whole region. According to the characteristics of this core group, wide international communication and cooperation are natural phenomena as well.

International organizations should create and implement environmental information and communication policies/strategies.

See Chapter 9, the corresponding item no. 5.13

7.1.2 Baltic Sea environmental information carrier network

After creating the core of the regional network, various **other actors such as major environmental, business and other professional organizations would be able to join the network.** Participating in the network could further develop the potential for regional cooperation and strengthen the status of the organization(s) offering the services to the target audience.

During the process of developing the network the present initiatives and measures should be taken into account – and maybe included in the network. Such initiatives are for example the BALLERINA which is an Internet approach to increase access to transboundary environmental information in the Baltic Sea Region and BALTIC-SEA WEB for bibliographic material and documents.

The participants in the enlarged network should discuss the contents of the backbone information that would serve best the needs for various professional experts and the public (see chapter 6.1.3.). After discussing the backbone information, **participating actors could choose the roles in the network that would suit to their interests.** The actors responsible for the services could be called backbone information carri-

ers. It would be useful to establish information services like clearing houses to store and distribute the backbone information.* It is likely that the most effective and economical way of disseminating backbone information would be through electronic means. As a result, it would be easy for each supplementary actor to adjust and enrich the backbone information to fit subregional, national, local and professional needs.

On the basis of the commonly available backbone information, the other active information producers and distributors such as journalists, publishers, NGOs, international organizations, administrators, business people and other professional groups could develop specific information for their own target audience. Such information has to be distributed in ways most suitable for the audience.

7.1.3 Professional groups as environmental information producers and distributors

The project questionnaire included a section devoted to the producers of environmental information. There were two questions asking about the role of the different professional groups: 1) Who should be active in your country in focussing on environmental problems; and 2) How active are the following groups or sectors in producing and distributing environmental information in your country.¹

NGOs, academic researchers and journalists should according to all respondents be most active in focussing on the environmental problems (see Fig. 7.1). Academic teachers, national and local administrators and school-teachers should also have an active role. In subregion 1, the role of international organizations in focusing on environmental problems is rather strong compared to the roles of other actors. In the other subregions they were not seen to

* clearing-house: originally used in the business sector, a clearing-house is a service which facilitates and simplifies transactions among multiple parties.⁴⁶

be so important actors, though environmental problems are in many ways international. If this is the case among the experts, this attitude may be even more distinctive among the general public.

In subregions 1 and 2 only a few professional groups were supposed to focus on environmental problems. Most of the responsibility was assigned to journalists, NGOs, teachers and academics. The respondents in subregions 1 and 2 have expectations targeted on the specialists, experts and specific activities. In subregion 2 the administrators also have a relative important role. Actors focusing on environmental problems are considered to be a more separate part of the society than in the EU countries.

In subregion 3 the differences between professional groups are smaller than in the other subregions, which indicates stronger general belief in everybody's responsibility on solving environmental problems. It seems therefore that in subregion 3 people are favouring more holistic responsibility of the society towards the environment.

In subregion 3 researchers, NGOs, journalists, teachers, administrators and consumers have highest scores. The high percentage of consumers may be a sign of the market economy, where consumers have a functional established role that is acknowledged by other actors. Also the scores of business and farmers are relatively high in this region when comparing to the other subregions.

The second question considered the current situation regarding the activity of the professional groups in producing and distributing environmental information in respondents country (see Fig. 7.2). According to the analysis of the answers from the whole area, environmental NGOs play a prominent role in producing and distributing environmental information. They were considered to be the most active producers and distributors of environmental information throughout the area, and their role was expected to remain important. All the other professional groups re-

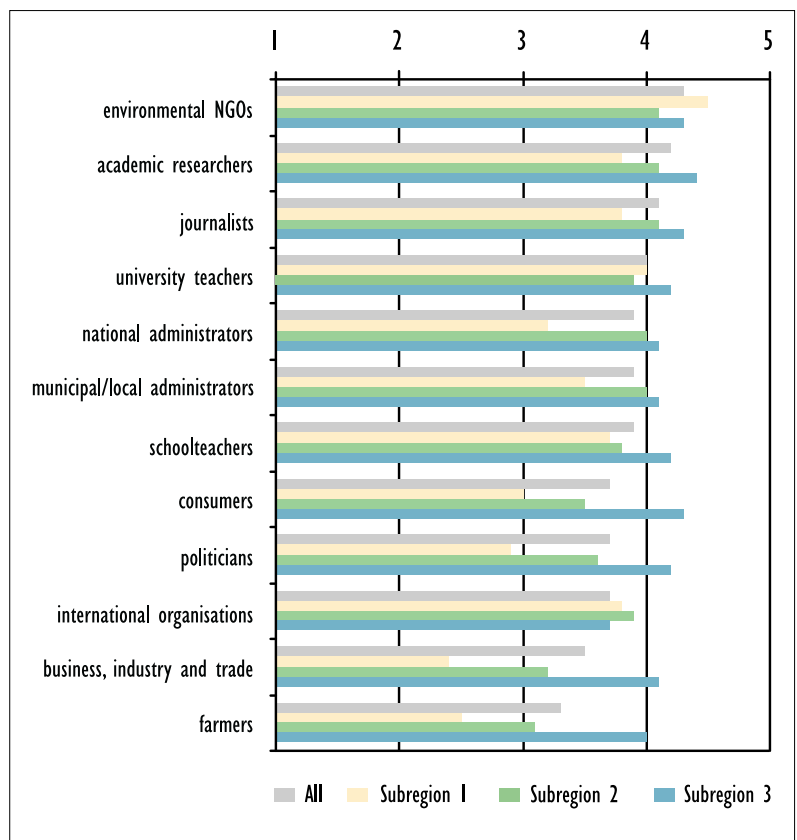


Figure 7.1. Who should be active in focussing on environmental problems in respondents (138) country. Comparison between different subregions. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

ceived here noticeably lower scores than in the previous question (see Fig. 7.1).

Journalists were considered to be the second active professional group in producing and distributing environmental information in every subregion. Academic researchers reached the third highest evaluations. National administrators were according to respondents more active than local/municipal administrators, except in subregion 1. Teachers in schools and at universities were also somewhat active in producing and distributing environmental information. Consumers and consumer organizations as well as business, industry and trade were also regarded rather active in subregion 3.

The respondents of the project questionnaire also were of the opinion that the EU and HELCOM were active international actors. According to the respondents international organizations were, in general, not very active

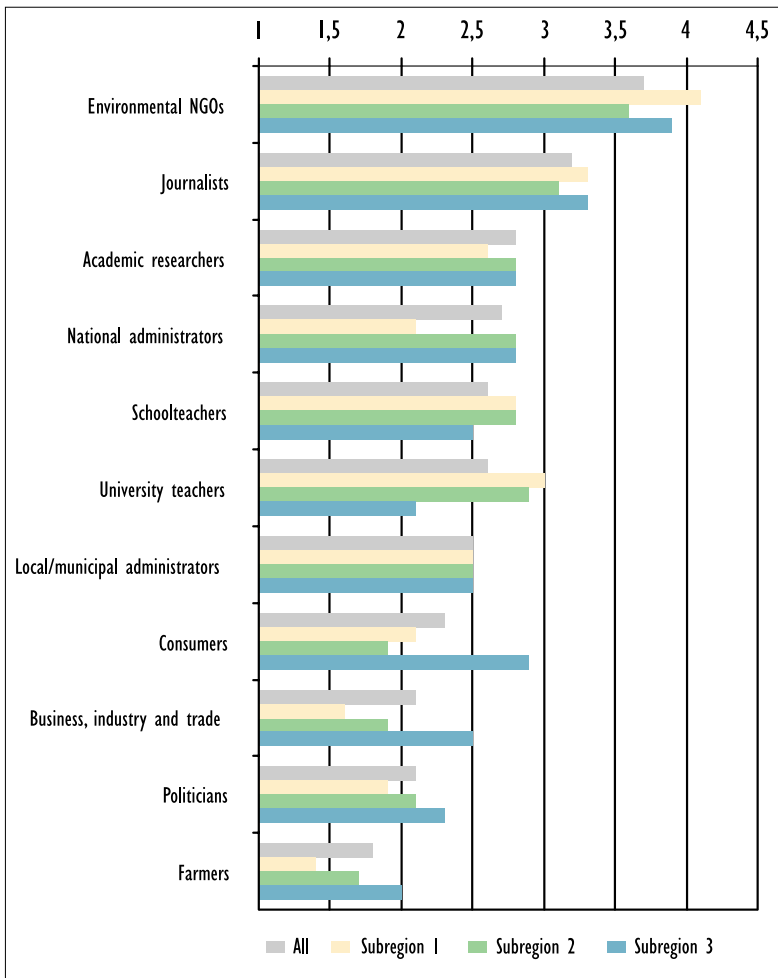


Figure 7.2. How active are the following groups or sectors in producing and distributing environmental information in respondents (138) country. Comparison between different subregions. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

in comparison to other producers and distributors of environmental information. In subregion 1 their importance was felt more strongly.

In addition, a gap between actual and potential information producers and distributors was noticed when analysing the questionnaire results. The role of some groups, such as farmers and business people, was considered by the respondents to be very weak in focussing on environmental problems in subregions 1 and 2, even though they exert a strong direct influence on the state of the Baltic Sea. Their role in distributing environmental information was regarded even weaker. Therefore, farmers and business organizations should become more active in producing and distributing environmental in-

formation directly connected to their fields of work – at least within their own professional sector. This process has already started in subregion 3, where environmental knowledge is becoming a part of professional knowledge. Environmental education and training for these groups were discussed previously in chapter 6.1.4.

7.1.4 Environmental non-governmental organizations as environmental information producers and distributors

The project questionnaire analysis showed that environmental NGOs have an important role in focussing on environmental problems. They were considered to be the most active distributors of environmental information throughout the area, and their role was expected to remain important. Their experience and knowledge in this field has grown considerably in the last decade. Environmental NGOs play an important role in putting pressure on other actors.

The sphere of environmental NGOs activities embrace:

- training and seminars, for example, introducing the Internet as a tool for use by the civil society
- organising exhibitions (e.g. of existing environmental literature and documentary films)
- producing toolkits for starting local initiatives and projects for sustainable development, for example, under the framework of Agenda-21 or independently
- making professional and official research results and information available for and open to public use. This is a major task in relation to strengthening public awareness and encouraging independent local activity of the people in their everyday lives.

According to the results of the questionnaire, the people active in NGOs need various environmental information from basic facts to actual complicated ecological issues. NGOs tend to

BOX 8. Environmental NGOs

Many western environmental NGOs are well-established organizations which are either supported financially by their governments (in the Nordic countries) or directly by the people or other private donors (e.g. in the Netherlands, France, Germany).

In the Central and Eastern European countries, before the political transformation began, there had existed a few official environmental organizations (associations for nature protection) subordinate to and financed by the governing political party. After the democratisation process started, the number of environmental NGOs has considerably increased. However, in many cases they are marginalised in relation to the official authorities. They seldom receive financial support in their society- partly due to the general financial difficulties, partly due to the fact that the development of the civil society in these countries is still a recent phenomenon. The old organizations struggle with the task of establishing new functions and changing their image. The new NGOs are often led by strong academic personalities who have not been seeking broader support from the general public or professional groups. Nowadays some NGOs in CEE countries receive temporarily bilateral or EU support.

educate and train their own members themselves. They use for this purpose also networks of NGOs as well as international sources, if needed.

Practical access for NGOs should be provided to the resources and financial support.

See Chapter 9, the corresponding item no. 5.17.

The following facts should be taken into account while planning ways to support NGOs for Local Agenda 21 and other activities through international financing programmes.

- NGOs often initiate and carry out small and specialised projects of cooperation in the field of the environment. This tendency to initiate relatively small projects constitutes a limi-

tation for the financial support in the project planning stage

- NGOs cannot generally use months for designing and reporting project activities
- after having started a project, NGOs usually cannot wait for a very long time for financial support.

For processing NGOs project proposals and initiatives, a faster and more flexible system on the intermediate decision-making level could be created for targeting financial support.



Stephen F. Lintner

7.2 Subregional situation

Environmental multi- and bilateral cooperation concentrating on fields of activity that are in need of strongest development; Increasing effect on environmental awareness.

See Chapter 9, the corresponding item no. 3.2

There exist considerable differences in the level of environmental information production and distribution throughout the whole Baltic Sea catchment area. Some countries have already developed sophisticated monitoring, processing, data distribution and public information systems. For the purposes of the Helsinki Convention and for the European Environmental Agency (EEA) there is a strong need for internationally standardised environmental data in different countries. Some of the countries have only recently begun to establish their basic environmental data **monitoring systems**. Such services as environmental data **storage, processing** and **distribution** systems are still in the development stage.

If the quality of environmental information is considered in the whole catchment area, it is important to produce **interpreted reliable data**, to increase the **comparability** and **harmonisation** of information and to continue

organising the compiled information in public databases, with extensions in popular formats and languages.

7.2.1 Subregion 1 (Russia, Belarus and Ukraine)

Local and professional networks should be promoted in environmental information production and distribution (subregion 1)

See Chapter 9, the corresponding item no. 3.4

Nowadays the administration in this subregion faces certain restrictions and lack of resources. The administrative structures are sometimes overlapping and competitively parallel, and they may suffer from insufficiently defined responsibilities, norms and administrative practices. Therefore, considering these structural limitations, organising coordinated activities for raising environmental awareness might not prove an easy task.

Various local and professional actors could design, initiate and manage relevant operations for developing environmental awareness. At the moment, there are attempts to create cooperative information and participation **networks** of researchers, business organizations, international organizations, journalists and NGOs. For instance, Environmental North-West Line (ENWL), based in St. Petersburg, in cooperation with the Socio-Ecological Union in Moscow, is a relevant producer and distributor of electronic information in the north-west part of Russia.

Along with producing and disseminating environmental information there is a need for promoting public participation and to organise two-way communication (hearings, questionnaires, environmental impact assessments, etc.) between the general public and the administration, scientific circles, NGOs, as well as business and industry.

Although producing and disseminating environmental information within the society is important there is also a need, for creating a forum for an **open discussion** within a community.



European Commission

Such discussion might be carried out through the mass media and on the Internet, since many NGOs, journalists, scientists, teachers and administrators already have access to the Internet.

The close dependency of publishers of the business organizations and politicians does in many countries endanger journalists' critical, open discussion in the public media.

7.2.2 Subregion 2 (Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia)

Civil society and democratic public administration have been developing rapidly in these countries within the past ten years. National and local **administrations** have played a significant role in organising environmental information and education. The administration cooperates with other emerging actors of the civil society in this field.

Some characteristics of certain environmental information producers and distributors in this subregion:

- The development of **independent interest organizations** like political parties, trade unions, chambers of commerce, farmers unions and consumer organizations in this subregion started in the late 1980s and early 1990s.
- Even though independent **NGOs** are a recent phenomenon in this subregion, they still constitute an important source of environmental information. However, communication between environmental NGOs and public institutions have not yet been fully developed.
- The existence of an **independent media** is also quite recent. Moreover, journalists are sometimes dependent on the relationship of the chief editors and publishers with the business or political world. Therefore, journalists are sometimes careful in covering certain environmental topics.

7.2.3 Subregion 3 (Denmark, Finland, Germany, Norway and Sweden)

In this subregion, the public administration is one of the most important environmental information producers because of the tradition of a relatively open information policy. Cooperation with other actors of the society in producing information is common. The administration is generally considered a reliable source of information. However, there are some topics such as energy policy, genetic engineering and road construction projects that still awaken some distrust in the society.

Strong professional and interest organizations play an important role in producing and distributing environmental information. A few examples of such organizations are:

- environmental NGOs
- national farmers organizations
- various national and local chambers of commerce; industrial organizations; business information and lobby organizations
- consumers organizations
- national unions for teachers and journalists.

In order to reach the most influential parts of the civil society and to organise effective environmental information and education campaigns, it is important to cooperate with above-mentioned actors.



Stephen F. Lintner



Katarzyna Kreft-Burman

cal actors who have chosen their roles in this field.

There is a need for cooperative international environmental awareness actions to be created including different branches and levels of administration. For example activities of Interreg/EU, Twin City project, Union of Baltic Cities, Transboundary Waters create effectively local actors having regional networks. Cooperation – also international – is needed especially in projects having strong environmental impacts and public assessment of their effects, concerning for example the regional earth gas-grid reconstruction, massive port construction projects and traffic investments.

On the local level, cultural and linguistic differences are not so many as on the regional, national or international levels. Therefore, dissemination of information and communication is generally easier than with wider and more inhomogeneous audiences. However, there are still important socio-economic characteristics which have to be taken carefully into account in environmental awareness activities:

- size of the community
- rural or urban community
- amount of industrial, forestry and agricultural activities
- level of prosperity
- environmental condition of the community.

7.3 Local actors and public participation

Functional roles of various national and local actors in environmental awareness issues should be formulated.

See Chapter 9, the corresponding item no. 3.3

Main environmental objectives and partners as well as possible measures of local actors (incl. municipalities) should be linked.

See Chapter 9, the corresponding item no. 4.1

The local level creates a platform for environmental information to enter the society. Therefore, it is important to define legally the roles of various national and local administrative bodies in environmental awareness issues. Environmental awareness activities on the local level are very much connected to the existence of independent lo-

Environmental awareness policies and actions in the regional and national levels should be linked together.

See Chapter 9, the corresponding item no. 3.1

Transboundary local cooperation should be promoted.

See Chapter 9, the corresponding item no. 4.4

Positive examples and experience are especially useful on the local level as motivating factors. Especially cooperation in international projects and initiatives is beneficial for local actors and communities. Good examples can encourage citizens towards environmental-friendly behaviour.

Channels and forms of information

Numerous channels of information exist throughout Baltic Sea catchment area (see Fig. 8.1). Usually the distributors of information are simultaneously a target audience for some other distributors. When information is mutually exchanged the communication process begins to influence both the content and the form of information. Newspapers, magazines, TV and radio are information channels for distributing high quality environmental material in different forms – news, documentaries and entertainment for the purpose of raising environmental awareness. In addition to the traditional information

channels, the Internet and other forms of electronic communication have become increasingly significant education tools and means of spreading environmental information, although their availability appears not to be equal in the area considered. Advertising or direct mailing are expensive ways of distributing information, but they can be effective in reaching the local level and special target groups within the Baltic Sea area.

Key expert and interest groups exert an impact on each society, and on professional groups and local communities. In this way, they directly and

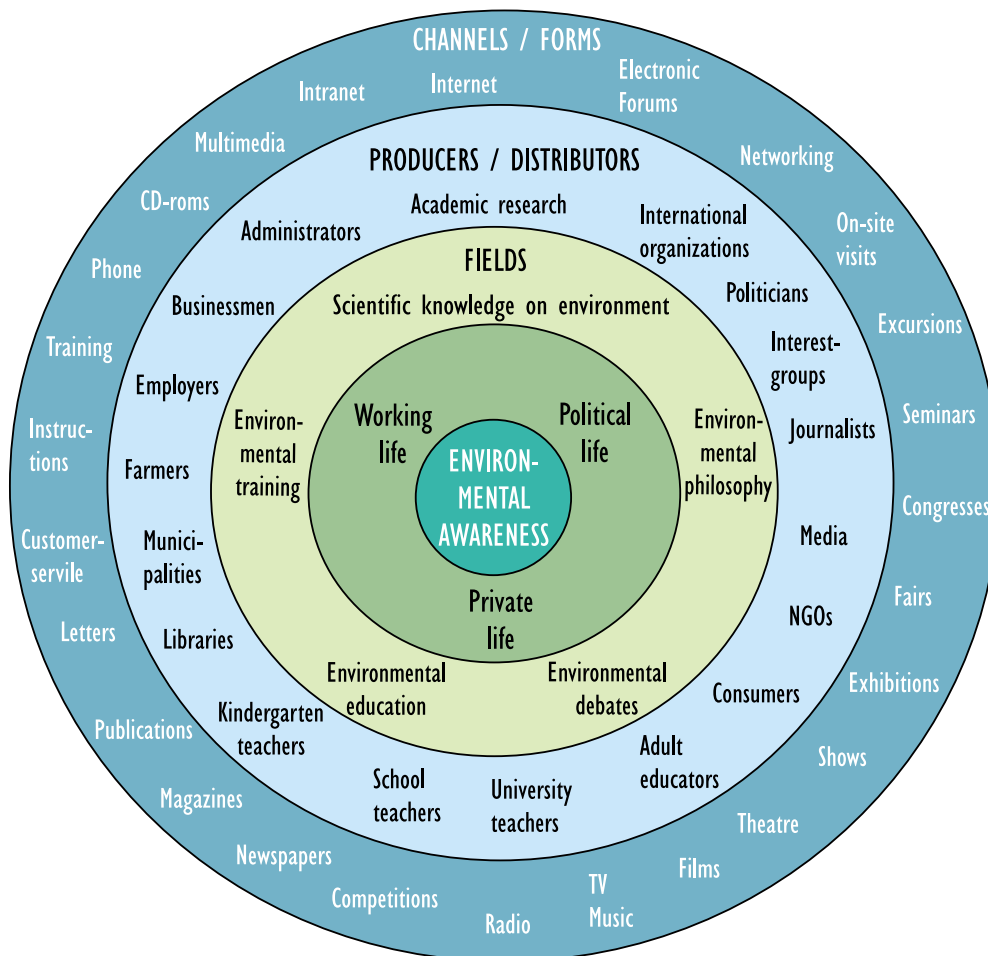


Figure 8.1. Raising environmental awareness in a society.

indirectly influence the environmental awareness level. Professional and interest groups rely on professional channels and forms of information. These include newsletters, scientific or occupational magazines, newsletters of professional associations, conferences and seminars, visits and excursions. With these channels, information has usually been adapted and developed for the professional groups' purposes. Through cooperation with the target groups during the process of creating environmental information, it is possible to adjust the content and the form of information to the needs of a particular group.

8.1 Considerations for the whole Baltic Sea area

8.1.1 Different professional groups and their channels of information

In the project questionnaire the different professional groups and their channels of information were investigated.¹ Professionals follow the mass media – primarily newspapers, magazines, TV news and documentaries – for news and general information. However, they receive professional information primarily through different occupational channels. Therefore, it seems most

effective to utilise professional channels for disseminating environmental information to the professional target groups. Through professional and personal contacts there also is the possibility to clarify the contents and meaning of a piece of information, and to estimate how essential it is at work. Based on the results of the project questionnaire, the following channels are most important in reaching experts:

- influential **colleagues** through **personal** communication: speeches, discussions, communication via the Internet
- professional **magazines, bulletins** and **mailing lists**,
- **visits** and **excursions**
- the **Internet**.

The information is valued when it is authorised by the professional context and adjusted to address the specific needs of the group in question. Each professional group, however, tends to favour some particular channels of information (see Fig. 8.2). While addressing certain professional groups it is important to use those channels most popular among them.

Information targeted to professional and expert groups should be prepared using their professional and technical language, including terms and concepts characteristic of a particular group. The importance of **personal impact** of “gurus” and other influential persons should also be emphasised.

8.1.2 The mass media

The mass media – newspapers, television, radio – is effective in distributing **general** environmental information to the public (see figures 4.9, 4.10, 4.13, 4.14). Each of these also is a powerful tool for presenting concrete examples with a large emotional load, if needed. They play an important role in stimulating and raising the public's level of environmental awareness.



Angelika Lindenbeck

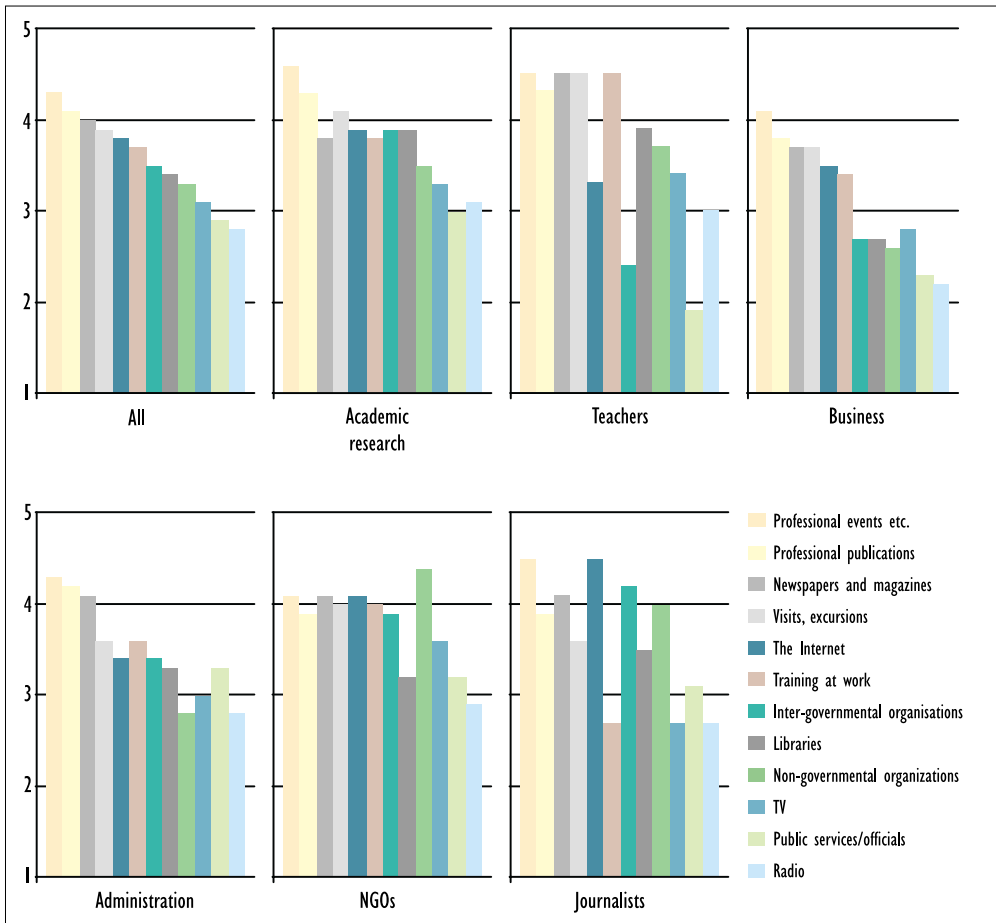


Figure 8.2. The importance of different information channels in respondents (138) field of work. Comparison between different professional groups. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

In most countries of the Baltic Sea area there are **regular environmental programmes** on television and radio, as well as environmental **news and articles** in major newspapers and magazines. It is useful to develop the existing regular **channels and forms** of environmental **information**, but at the same time to integrate environmental information into other programmes and news stories. This would probably raise the level of environmental awareness of the public and journalists. It might also be effective to broadcast brief stories on environmental matters in between regular popular programmes like the news. Moreover, there is a need for creating more **popular** programmes – for instance, informative, but enjoyable presentations of interesting initiatives around the Bal-

tic Sea presenting how to reduce non-point source pollution, or successful investments to reduce important point source pollution.

In many countries of this area, it is important that **regular programmes and series of articles containing environmental information** in the mass media are created and supported.

Environmental programmes, videos, documents, articles, cartoons and other material should be exchanged effectively in the Baltic Sea area and the mass media should be offered this kind of high quality material on low-cost terms.

See Chapter 9, the corresponding item no. 5.15.

In order to enable the media to utilize the existing and new material on the environment, their needs for such ought to be evaluated. The relevance



Jari Kosiet

of this material (examples, facts and action programmes) has always to be estimated carefully from the perspective of the country in question. Much material already exists on video and on paper that could be translated and circulated with low cost all around the Baltic Sea area. Programmes and material related to hot environmental topics like blue-green algae blooms are most likely to fit the existing needs.

The production of various environmental stories for television – which is one of the most influential media forms in the Baltic Sea area – is at present often expensive in relation to the number of the supposed audience. In general, these stories are rarely broadcasted during prime time hours. They are usually also made with small resources, which means that the quality of the production tends to be low. As a result, the programmes are not always popular.

In order to attract a wider audience, the producers should strive for creating high quality environmental stories that would be both **informative and entertaining**. These stories could be woven into the plot of **soap operas**, TV-families serials or other similar programmes. In this way, by using integrated presentations and soap operas

to distribute environmental information, people who are not already receptive to environmental information could be encouraged to follow it and become educated if the information was well presented. The difficulty in applying this method requires quite a high level of environmental awareness of the publishers, producers and journalists making the relevant decisions.

The production of high quality **environmental news, documentaries** and other programmes that could be distributed and broadcasted on **low-cost terms** throughout the whole region is one solution that might help some regional actors to disseminate regular, up-to-date environmental information to a large audience of environmentally receptive people, and to raise their awareness and interest.

Co-production teams between different TV and radio stations or newspapers and magazines, should be supported in planning, preparing, and distributing high quality environmental information in the whole Baltic Sea area.

See Chapter 9, the corresponding item no. 5.16.

This information could be in forms of documentaries, films, videos, news, reports, articles, cartoons, and photos. Periodic evaluation of the need for and use of such exchangeable material should be done.

Short pieces of environmental information could be incorporated into some popular programmes. This requires a high quality technique, in order not to irritate the viewers that usually do not follow the environmental segments of programmes. For example, in some TV-channels brief pieces of environmental information have been included in the weather reports.

News on the Internet allow the user to choose various amounts of background information linked to the regular news stories. This news format is rapidly expanding in many countries with high access to the Internet – usually starting as accessories of the regular electronic or printed media and quickly becoming more independent.

8.1.3 Modern electronic communication

Most experts answering the questionnaire underlined the importance of using and developing electronic forms of information. The **Internet** was considered one of the fastest, most effective and relatively inexpensive ways of communication throughout the catchment area. However, its use is to some degree limited due to economic reasons, such as among others, the cost of equipment, modems and phone bills. The Internet seems to attract many people by its novelty, potential independence and the **uncontrolled** nature of the transmitted information. This concerns not only young people but, also those who are frustrated by the lack of ordinary, high quality TV and radio programmes or newspaper articles.

The Internet is possibly among the most important **future media** for distributing environmental information – for both direct and indirect use through further translation, conversion, interpretation and multiplication. This applies also to the countries where telecommunication networks have just started to develop. It is likely that the role of actors producing and distributing electronic environmental information will become stronger in the future.

The electronic distribution of environmental information should be strengthened in countries where it is difficult or expensive to get it through other channels.

See Chapter 9, the corresponding item no. 3.6

Existing **actors in the electronic communication** field need to be encouraged and supported especially in subregion 1. The Internet offers many possibilities in countries where other means of communication do not function well. Active consumers and producers of environmental information in subregion 1 get often their environmental information through the Internet. This is a clear phenomenon even though the electronic communication infrastructure of this region is other-

wise not very strong, although it is expanding rapidly in the most urban centres like St. Petersburg.

Technical infrastructures enabling widespread environmental information for professionals and for libraries (subregions 1 and 2) should be improved.

See Chapter 9, the corresponding item no. 3.7

Basic technical infrastructures for professionals enabling the use of the Internet constitute important targets for external support. Key professional groups can benefit considerably from being able to use the Internet.

Since most of the people have access to electronic information only in the work place, especially within subregions 1 and 2, it is important to support the development of computer networks in public libraries and Internet cafes among other relevant places for those who cannot use the Internet and e-mail in their work or home.

8.2 Subregional characteristics

Channels and forms of environmental information vary depending on the information distributors' resources and preferences, and also on the field of communication, the target audience and the content of the information itself.

According to the respondents, professional events and publications are **the most important channels of information in the respondents' fields of work** in the whole area (see Fig. 8.3). Other professional events, such as visits and excursions are also considered very important.

Newspapers and magazines are also regarded as important channels of information. However, in the subregion 1 they are less important. The importance of the Internet for professional purposes turned out to be equal in all the subregions, even though access to it is unequal in the Baltic Sea area. Training at work seems to be more important in subregions 1 and 2 than in

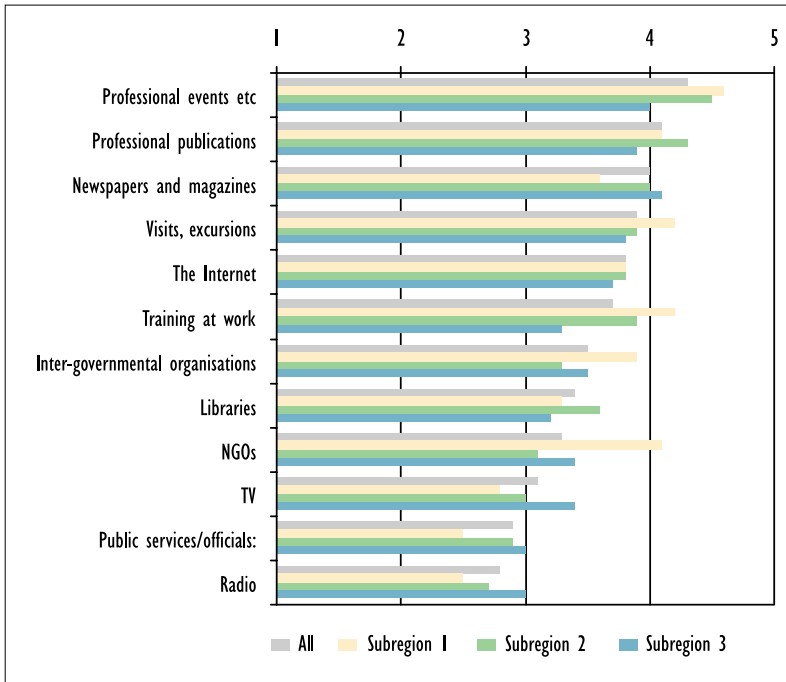


Figure 8.3. The importance of different information channels in respondents (138) field of work. Comparison between different subregions. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

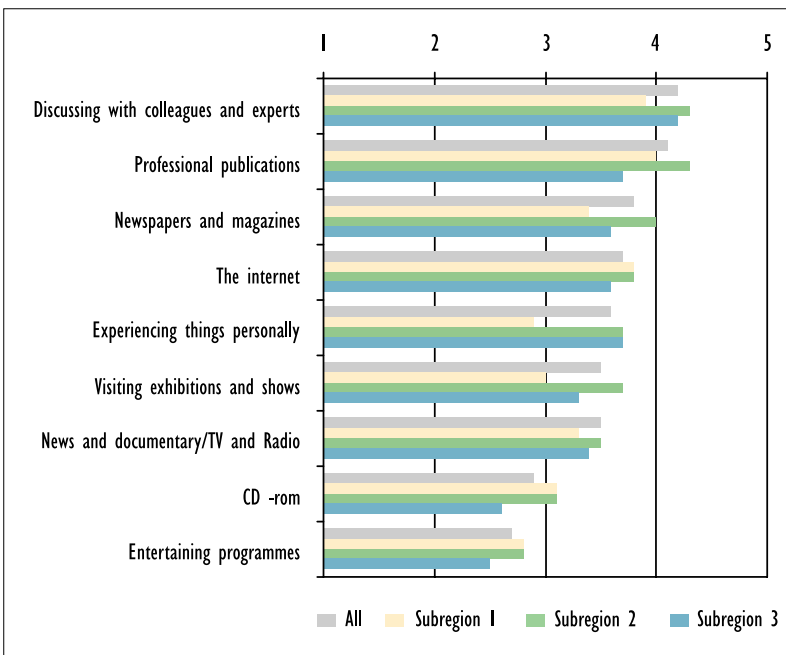


Figure 8.4. Preference of ways and means of spreading environmental information. Comparison between different subregions. Scale of evaluations: 1 = "not at all", 2 = "not very much", 3 = "to some extent", 4 = "quite much" and 5 = "very much".

subregion 3. Intergovernmental organizations such as EU and HELCOM were considered to have medium importance as an information channel. The importance of libraries seems to be highest in subregion 2, but they seem to be less important in the other subregions. In the case of subregion 1, this might be due to the economic problems and lack of international publications in the libraries, as reported by the respondents. Whereas in subregion 3, the fact that the Internet is gradually taking over the functions of a library might serve as an explanation. The role of NGOs as information channels is stressed most in subregion 1. For professional information, TV and radio are considered rather secondary information sources in all the subregions. Public services and officials are most valued in subregion 3 and are least important in subregion 1. This may be due to the differences in the availability and transparency of official information for the public in the whole area.

The respondents of the questionnaire also gave their opinions on the preference of ways and means of spreading environmental information (see Fig. 8.4). Discussing with professional colleagues, professional publications, newspapers and magazines as well as the Internet were the most favoured means of spreading environmental information.



Jari Kostet

8.2.1 Subregion 1 (Russia, Belarus and Ukraine)

This subregion is equipped with good TV and radio network systems. Newspaper and magazine publishers seem to have suffered from the economic crisis which started in autumn 1998. This, in turn, has led to higher unemployment among journalists.

In the case of libraries and professional organizations, the lack of resources limits purchases of international journals and other publications. This is one of the reasons why the Internet has become so important for the professionals in this subregion. According to the respondents, the Internet is also popular because of the relatively slow delivery of printed information and the ineffectiveness of the traditional post. The range of the Internet is rather limited to the bigger cities but it is continuously expanding. Traditional telephone networks seem to be satisfactory, but the mobile phone networks are expanding in a similar fashion as the Internet.

There are some regular environmental magazines along with TV and radio programmes in this subregion. The recent economic crisis did, however, affect the job security of journalists who write on the environment.

Strengthening the information infrastructure is necessary for improving the distribution of environmental information and for raising environmental awareness in this subregion. Additionally, the Internet offers many possibilities in this field.

The Internet networks could be supported in this area by:

- **technological solutions** (servers, modems, computers, telephone costs subsidies)
- development of autonomous, edited and updated information, **news and documentary production and web sites**,
- developing libraries, Internet-cafes and other public places where it would be possible to use the Internet.

8.2.2 Subregion 2 (Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia)

This subregion is characterised by well-developed TV and radio networks. The same applies to newspapers and magazines. There already are some regular environmental magazines as well as TV and radio programmes.

However, international scientific and professional publications are not always easily available. The questionnaire respondents from the Baltic states pointed out the lack of national professional publications.

The mobile telephone networks have been developing rapidly (e.g. in Poland) because of the competing operators and the lighter infrastructure requirements compared with expanding the traditional telephone networks.

The Internet networking and inclusion could be supported by technological solutions such as servers, modems, computers, telephone costs subsidies. In addition, the Internet networking can be supported by development of high quality news, data and documentary production as well as professionally designed and managed web sites.

8.2.3 Subregion 3 (Denmark, Finland, Germany, Norway and Sweden)

This subregion is characterised by good media facilities and rapidly increasing electronic communication with only some economic and technical limitations. Strong competition of operators results in development of services and lower costs – nearly anybody in this region could afford a mobile phone and electronic communication.

The press, TV and radio are also well established and widespread. For instance, Nordic countries have one of the best newspaper coverages per capita in the world.

8.3 Local channels and forms of information

The local media: newspapers, radios and TV are often the only way to publicise local issues and discuss them in public. This applies to environmental problems, information, awareness and public participation. Local events and influential people are also very important in this context. Many important local aspects that have to be beared in mind when carrying environmental awareness projects and activities are presented in the next chapter.

8.4 Practical suggestions regarding channels, forms and contents of information

Although there are many programmes and initiatives increasing the level of environmental awareness in the Baltic Sea area, there is a need for more effective projects and other activities. Based on the findings of this project, several relevant suggestions need to be taken into account for successful dissemination of environmental information, education and training:

Influential professional persons and interest groups have to be reached through the most effective channels of information, especially professional fora and networks.

According to the respondents of the project questionnaire, the characteristics inside each professional group are rather homogeneous throughout the whole region. Therefore, working within different professional group is one of the most effective means to strengthen environmental awareness. Information targeted to professional and expert groups should be prepared using their profes-

sional and technical language, including terms and concepts characteristic of the particular group. More emphasis has to be given to the importance of the **personal impact** of “gurus” and other influential persons, since they are well-versed in the most suitable local forms and habits of communication.

Information that is clearly connected to professionals’ fields of work and the public’s everyday life activities is the most effective and motivating.

It is important to make people realize that protecting the environment does not “take money out of their pockets”. The same applies to the business organizations which need positive examples of effective and economically profitable ways of reducing harmful environmental impacts. **Internalisation and integration of environmental aspects, factors and costs in decision-making, plans and investments** are necessary for sustainable development. The target groups have to be made aware that ignoring for example, environmental affects on health may often turn out to be more expensive for the whole society than preventing environmental problems in advance. Solving environmental problems requires not only legislation and taxation and may be financial subsidies for cleaner production, but also raising environmental awareness in the society.

The projects and activities should preferably help the project partners in reducing the workload by producing useful ideas and time- or effort-saving methods and means (logistical, financial, etc.), since, according to the respondents, the **workload** of active professionals is continuous and other **capacity limitations** frequently occur. Many professionals have very tight time schedule and high performance requirements, and face strong financial pressure to cut extra costs. This has to be carefully noted when planning environmental information and awareness activities for these groups.

Professionals and the public should be able to act based on the information they receive, and they should have the opportunity to participate in the decision-making concerning their personal environment.

When the risks of environmental and possibly health problems are high, and the environmental information that is available and the opportunity to act based on that information are limited, there is a danger that the situation could lead to feelings of frustration. In countries with severe socio-economic problems this is often true. All public information should be **aimed at increasing motivation and improving knowledge or skills**, in order to create an active awareness of the situation including practical solutions for action.

It is important to initiate and support pilot projects that could be extended or applied in other countries and under various contexts. The most successful projects and actions should be well documented and presented in the media - or used in education and training.

Broadcasting background information on the projects is usually beneficial. This must be done according to the local, ethnic, professional or other practises or traditions. The effects of peoples' actions can be cost-effectively disseminated by documenting their actions on film, and by broadcasting or otherwise distributing their experiences of these projects to other people within the catchment area. The media can refresh or enrich personal experiences through distributing such supportive information. Under challenging conditions, the media's support of projects may be useful in keeping the projects going. Moreover, people often believe that a project is more important if the media covers it.

Public participation and economy of resources in environmental projects have to be encouraged. If appropriate, projects should be self sustaining in the long run.



European Commission: 95-251-8a

Local actors should be responsible for projects as much as possible. Low-cost activities are especially essential in sub-region 3, because of the financial and structural problems faced by the national and local authorities.

Simply formatted, reliable, up-to-date, easily applicable, properly analysed and edited environmental information has to be produced and distributed.

The main problem connected to environmental awareness throughout the Baltic Sea area may not be the **amount** of environmental information produced and compiled. Raising the quality of distributed information is more important than increasing the quantity.

Allocating more resources to producing **better quality** information can **save resources** in the distribution process because, generally, a smaller amount of information is transmitted, and a better voluntary re-distribution of interesting, updated information occurs among all possible respondent groups. Although quality is rarely cheap in the production stage, the careful selection and editing leads to effective information – less words and more visualized information. This kind of strong non-verbal, visual information



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is also more economic to transmit and translate for use by other professional or linguistic groups. Carefully visualised information in various forms (maps, graphs, cartoons, animations etc.), does not need as many words as only verbally expressed information, which decreases the linguistic obstacles. Consequently, simply formatted environmental information can be easily edited, translated, adapted and distributed to serve various purposes. Properly analysed and edited information is also easiest to transfer into professional and public information.

In order to ensure the high quality of information, all decisions concerning priority settings in producing and distributing the necessary information need continuous evaluation and criticism.

Providing environmental information, education and training in local languages is one of the most useful means of reaching the public and interest groups within each society.

The language barrier is one of the most limiting factors for using otherwise high quality information and raising the environmental awareness of the whole population in the Baltic Sea catchment area. English is frequently used as an international official, scientific, and business language. Russian is widely known in the south-eastern part of the area and Swedish in the Nordic countries. Still – none of these languages could be used as the only regional language in the catchment area. Most of the professionals living in the area do not have sufficient ability to use just one of these languages – not to mention the general public. Most people within the area speak only their native language. Many of the people who can speak other languages may have difficulties in using the specialised administrative, scientific and technical terms that are used in disseminating the basic environmental information available – especially through international channels.

Conclusions: Proposals for the regional, subregional, national, local and sectoral action levels



The conclusions of this report are provided in Tables 9.1-9.5, where the main findings are presented in the regional, subregional, national, local and sectoral (i.e. according to the professional groups) levels. When reading the results of the proposed activities in the tables, it is useful to read the corresponding text in the other chapters of the report. The location of the corresponding text is always indicated in the left margin of the results.

The tables 9.1-9.5 are constructed according to the Logical Framework

method, which is a part of the Project Cycle Management (PCM) method. In order to make it easier for the reader to comprehend the logic of the tables, the short description of the logical framework is presented in Box 9.1.

In the end of the chapter the findings of the project are adapted to the context of an international organization – HELCOM. As a result, the activity proposals presented in the chapter 9.6 could serve as the foundation for an information and communication policy of HELCOM.

Box 9.1 Project Cycle Management (PCM) method

The **Project Cycle Management** method is widely used for improving project management, for example in the EU projects concentrating on the development of the financed aid. The method consists of an analytical process and a presentation of the results of this process. This allows defining

systematically and logically the project/programme objectives, purposes, results and activities.

The logical framework presents the most important aspects of an operation. It gives a chance to check if the operation has been properly designed.

Structure of the logical framework

Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objective			
Project purpose			
Results			
Activities	Key actors	Estimated cost	

Overall objective: the objective, which is wider than the project itself

Project purpose: the objective, which can be reached by implementing the project

Results: “products” of the activities undertaken

Activities: activities, which must be undertaken in order to achieve the results

Objectively verifiable indicators: operational description of the overall objectives, project purpose and results in terms of quantity and quality of results

Sources of verification: defined sources of information on the achievements of project purpose and results

Key actors: The most potential actors likely to carry out the planned activities

Assumptions: the external factors outside the direct control of the project.

These factors are, however, crucial for the project success.

9.1 Regional action level

	Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objectives	High environmental awareness in the Baltic Sea catchment area	Increased motivation, knowledge and skills towards sustainable development Environmentally friendly actions increased: projects, consumer habits, recycling, etc.	Opinion polls, surveys of the media, the public and professionals Project surveys Surveys of legislation, international agreements and their implementation Voting, political parties Decisions, actions, products, markets	
Purpose	I. Regional visions for raising environmental awareness created and roles for different actors chosen	Decisions Reported actions	Documents of common visions Internet pages for the Baltic Sea environmental information (HELCOM homepage etc.)	Positive democratic and economic development Deepening of global and regional cooperation Development of regional environmental awareness approach continues
Results				
See Ch. 7.1.1	I.1. A network of actors for the Baltic Sea environmental information launched and active	Decisions Reported actions Reported names of participating organizations and other actors in the network	Documents of visions presented on the Internet etc. Documents of the process of creating the backbone information* network	Main actors interested and committed: UNEP, UNESCO, UN/CSD, ECE, WHO, OECD, EU/EEA, CBSS, HELCOM, Baltic 21, VASAB 2010, IFIs, etc. Other actors support the process
See Ch. 6.1.1	I.2 Information on the application of the Århus Convention is made available; Information that is public in accordance with the Convention is made available	Available Århus documents, translations and other public information material Available environmental material	Reports on the progress of the Århus Convention	Århus Convention ratified and implemented
See Ch. 6.1.1	I.3 International measurement methods are developed and used for assessing the level of environmental awareness; assessments made in the Baltic Sea area countries	Decisions Reported actions Assessments of environmental awareness levels	Study report on the measurement methods Assessment reports	
Activities		Key actors:	Estimated cost (Euro):	
	I.1.1 Initiative for creating the core of the network; starting meeting	Core of the network: EU/EEA, UNEP, UNESCO, UN/CSD, ECE, WHO, OECD, CBSS, HELCOM, Baltic 21, VASAB 2010, International financing institutions (IFIs), etc.	50 000 – 100 000	Initiator/Coordinator exists and is committed (such as HELCOM)
	I.1.2. Creating and documenting visions for raising environmental awareness		100 000 – 200 000	
	I.1.3. Recognising and defining the need for the backbone information*		100 000 – 200 000	

1.1.4. Different actors choosing their roles including the clearing house functions		less than 50 000 per each actor	
1.1.5 Inviting other participants to the network; they choose their roles for providing information, including adaptation to local languages and conditions	Core of the network and other regional actors	less than 50 000 per each actor	
1.2.1. Producing and transmitting information about how to apply Århus Convention	ECE, national governments	less than 50 000 per actor	ECE and the responsible/involved governments ratifying and effectively implementing the Århus Convention
1.2.2 Making continuously available information that is public according to Århus Convention	National governments, officials, various other actors	less than 50 000 per actor	
1.3.1. Development of international indicators and methods for assessing the level of environmental awareness	UN, EU, HELCOM, research institutes etc.	200 000 – 500 000	Interested/committed actor exists
1.3.2. Carrying out assessments of environmental awareness in the Baltic Sea area countries	Any interested, competent actor (UN, EU, HELCOM), national governments	50 000 – 1 000 000 (depending on the scale and type of measurements)	Baltic Sea area countries are committed; coordinator exists (such as HELCOM)

* Backbone information is the core information concerning environmental issues and enabling the environmentally friendly actions around the Baltic Sea.



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9.2 Subregional action level

	Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objectives	High environmental awareness in the Baltic Sea area	Increased positive attitudes towards sustainable development Environmentally friendly actions increased: projects, consumer habits, recycling etc.	Opinion polls, surveys of the media, the public and professionals Project surveys Surveys of legislation, international agreements and their implementation Voting, political parties Decisions, actions, products, markets	
Purpose	2. Subregional* characteristics taken into account and utilised in environmental awareness activities	Levels of environmental awareness are raising throughout the area; at the same time the differences between the subregions* are diminishing	Surveys of the media, the public, professionals, concerning — Attitudes, knowledge and skills — Concrete actions	
Results See Ch. 6.2	2.1 Applying for EU membership and taking part in other international cooperation has been fully utilised in the work on environmental awareness	Harmonised legislation and activities according to the EU practises in subregions 2 and 3 Sustainable features in legislation and practises in subregion 1 Environmental activities supported by EU instruments (such as Phare and Tacis), and by HELCOM actions and Baltic 21 implementation etc.	New laws, regulations, directions Project reports New laws, regulations, directions Project reports EU, HELCOM and Baltic 21 reports, etc.	EU harmonisation and accession processes continue and progress is achieved Countries outside the accession partnership process will increase their cooperation
See Ch. 6.2	2.2 Cooperation in environmental awareness issues exists between different subregions	Reported cooperation activities	Subregional and national documents; possibly WWW pages	
Activities		Key actors:	Estimated cost (Euro):	
	2.1.1 Subregion 1*: Cooperation in trade including environmental standards and certificates; Various organizations plan and implement environmental awareness projects and other initiatives that include environmental awareness elements	Various official and business organizations, NGOs, other actors (such as HELCOM, Baltic 21, VASAB 2010, IFIs, chambers of commerce etc)	Generally less than 100 000 per activity depending on the size and characteristics of the project initiative	
	2.1.2 Subregion 2*: Preparing and adopting legislation that defines environmental awareness activities and their responsible actors	National parliaments and governmental, municipal and international organizations (such as HELCOM)	50 000 — 200 000 per each actor	IFIs and other relevant actors committed to diminish differences in quality of environment between subregions.
	2.1.3 Subregion 3*: Including criteria for environmental awareness also in financial instruments (Tacis, Phare, etc.), which are targeted to other subregions	The EU, national governments	50 000 — 200 000	Amsterdam Treaty and Agenda 2000 of the EU implemented and integrated in all relevant activities

2.2.1 Strengthening information exchange concerning environmental awareness issues between national governments	National governments, HELCOM	less than 50 000	Forum/ coordinator exists (such as HELCOM)
2.2.2 Promoting subregional cooperation in policy development concerning environmental issues	National governments, HELCOM, etc.	less than 50 000 depending on the scale of the word	Forum/ coordinator exists (such as HELCOM)

* The three subregions of the catchment area: Subregion 1 = Russia, Belarus and Ukraine; Subregion 2 = Estonia, Latvia, Lithuania, Poland, the Czech Republic and Slovakia; Subregion 3 = Denmark, Finland, Germany, Norway and Sweden. In the case of Russia we mean the area covered by the city of St. Petersburg, the Leningrad Oblast, Karelia and Kaliningrad; not the whole of Russia.

9.3 National* action level

	Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objectives	High environmental awareness in the Baltic Sea area	Increased positive attitudes towards sustainable development Environmentally friendly actions increased: projects, consumer habits, recycling etc.	Opinion polls, surveys of the media, the public and professionals Project surveys Surveys of legislation, international agreements and their implementation Voting, political parties Decisions, actions, products, markets	
Purpose	3. National characteristics taken into account and utilised in environmental awareness activities	Levels of environmental awareness are raising throughout the area; at the same time the differences between the countries are diminishing	Surveys of the media, the public, professionals, concerning – attitudes, knowledge and skills – concrete actions	Structures of societies are functional
Results				
See Ch. 7.3	3.1. Linked policies and actions in environmental awareness raising in the regional and national levels	Decisions Reported actions	National and municipal budgets	Appropriate international support available
See Ch. 7.2	3.2. Environmental multi- and bilateral cooperation concentrating on fields of activity that are in need of strongest development; Increasing effect on environmental awareness	Decisions Reported actions		Awareness of the weak points exists
See Ch. 7.3	3.3. Functional roles of various national and local actors in environmental awareness issues formulated	Decisions Reported actions	National legislation Statutes of different organizations	National and local authorities capable of working together
See Ch. 7.2.1	3.4. Improved environmental information production and distribution by local and professional networks (subregion 1)	Reported actions	Reports of subregion 1	
See Ch. 6.1.4	3.5. Increased environmental awareness among the key administrative and political decision-makers	Environmental friendly actions increased in decision-making	National budgets National legislation	
See Ch. 8.1.3	3.6 The electronic distribution of environmental information strengthened	Amount of the use of electronic environmental information	Surveys of the public and the professionals	

See Ch. 8.1.3	3.7 Improved technical infrastructures enabling widespread environmental information for professionals and for libraries (subregions 1 and 2)	Amount of purchased equipment for electronic communication	Surveys of the public, the professionals and libraries
Activities		Key actors:	Estimated cost (Euro):
	3.1.1 Creating co-operative international environmental awareness actions including different branches and levels of administration, (examples: Interreg/ the, Twin City project, Union of Baltic Cities, Transboundary Waters)	Governmental and business organizations, EU, municipalities, international organizations (i.e. HELCOM)	100 000 – 500 000 per country
	3.1.2 Promoting international cooperation in environmental awareness actions in projects having strong environmental impacts and public assessment of their effects. For example, the regional gas-grid reconstruction, massive port construction projects and traffic investments	Governmental and business organizations, EU, municipalities, the media, the public, international organizations (such as HELCOM)	200 000 – 500 000 or more
	3.2.1 Improving in a cost effective manner actors capacity and activities in environmental multi- and bilateral cooperation by focussing on the weak points	Governmental and international organizations (such as HELCOM)	
	3.2.2 Spreading environmental information on multi- and bilateral activities to general public	Governmental and international organizations (i.e. HELCOM)	Less than 50 000 per activity
	3.3.1 Defining responsibilities, tasks and resources of various national and local administration for environmental awareness issues in national legislation and practises	National parliaments and governments National and district branches of administration	50 000 or more per country
	3.3.2 Various non-governmental actors establishing their roles and tasks regarding to environmental issues	Organizations and networks for business and trade, NGOs, IFIs,	Less than 50 000 per actor
	3.4.1 Supporting bottom-up and horizontal networks in a local and professional level to improve national coordination in environmental issues (subregion 1)	Functional organizations with the public, business, the media, etc.	100 000 – 500 000 per country
	3.5.1 Training key administrators and politicians to apply environmental thinking and facts within their own field	Governmental organizations, NGO's, the media, international organizations (i.e. HELCOM)	100 000 – 200 000 per country
	3.5.2 Editing and delivering actual environmental information to key administrators and politicians	Governmental organizations, NGO's the media, international organizations (such as HELCOM)	Less than 100 000 per country in a year
	3.5.3. Providing information support to key administrators and politicians concerning the cooperation and communication with other actors of the society (subregions 1 and 2)	Governmental organizations, municipalities, NGOs, international organizations	100 000 – 500 000 per country
	3.6.1 Supporting competent distributors of electronic environmental information and communication	The EU, governmental organizations, international organizations (i.e. HELCOM)	Less than 50 000 per actor
	3.6.2 Promoting electronic channels in information policies of organizations	Various organizations	Less than 50 000 per actor
	3.7.1 Creating a secondhand computers recycling/transport system from subregion 3 to subregion 1	Business, national governments, NGOs, the EU	100 000 – 500 000 depending on the scale of activities
	3.7.2 Supporting purchases of equipment for electronic communication in public libraries	National governments, the EU, IFIs	50 000 – 500 000 per country

* In the case of Russia we mean the area covered by the city of St. Petersburg, the Leningrad Oblast, Karelia and Kaliningrad; not the whole of Russia.

9.4 Local* action level

	Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objectives	High environmental awareness in the Baltic Sea area	Increased positive attitudes towards sustainable development Environmentally friendly actions increased: projects, consumer habits, recycling etc.	Opinion polls, surveys of the media, the public and professionals Project surveys Surveys of legislation, international agreements and their implementation Voting, political parties Decisions, actions, products, markets	
Purpose	4. High environmental awareness achieved concerning local issues	Levels of environmental awareness are raising throughout the area, and at the same time the differences between local environmental awareness is diminishing	Surveys of local media, concerning the public and professionals — Attitudes, knowledge and skills — Concrete actions	
Results				
See Ch. 7.3	4.1. Main environmental objectives, partners and possible measures of local actors (incl. municipalities) linked	Decisions Reported actions EIA and similar assessments Public hearings	Local environmental awareness guidelines, documents	Democratisation and decentralisation proceeds and local communities are functional
See Ch. 6.3	4.2. Individuals motivated and trained to adopt environmentally friendly behaviour	Statistics of, e.g. recycled material, water and energy saving, etc.	Measured amounts of material and energy saved, recycled, etc.	
See Ch. 6.3	4.3. Active public participation in local decision-making	Public hearings Public information	Public information material	
See Ch. 7.3	4.4. Transboundary local cooperation promoted	Transferred and adapted activities and information		
Activities		Key actors:	Estimated cost (Euro):	
	4.1.1. Organising meetings, seminars, working groups for local actors concerning environmental issues	Local actors (incl. municipalities)	Less than 100 000 per municipality	
	4.1.2. Supporting decision-making regarding environmental issues by the local actors	Local actors (incl. municipalities)	Depends on the size of the municipality	
	4.2.1 Dissemination of concrete information and positive examples of local environmentally friendly behaviour	Municipalities, teachers, the media, employers, trade unions, other NGOs	Less than 100 000 per municipality	
	4.2.2 Providing better facilities for individuals to act environmentally friendly	Municipalities, employers, the public	Depends on the size of the municipality	
	4.3.1 Arranging hearings, delivering material about issues under preparation early, transparently and widely	Municipalities, employers, trade unions, other NGOs, the media	Less than 100 000 per municipality	
	4.4.1 Promoting cooperation with local actors and communities in international projects and initiatives where they have common interests	Local actors (incl. municipalities), the EU, international organizations (such as HELCOM)		

* local means municipal and other smaller units or their co-operative units under the national level

9.5 Key professional target group level

	Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objectives	High environmental awareness in the Baltic Sea area	Increased positive attitudes towards sustainable development Environmentally friendly actions increased: projects, consumer habits, recycling etc	Opinion polls, surveys of the media, the public and professionals Project surveys Surveys of legislation, international agreements and their implementation Voting, political parties Decisions, actions, products, markets	
Purpose	5. Targeted means for improving environmental awareness through professional key groups created and utilised	Differences in professional/ occupational environmental awareness and activities decreased	Surveys of local media, the public, professionals, concerning — attitudes, knowledge and skills — concrete actions.	
Results				
	Administration			
See Ch. 6.1.4	5.1. Administrators educated and trained in environmental issues	Courses arranged	Participants	National governments committed
See Ch. 6.1.4	5.2. Administrators trained to use the means for cooperation and communication with other actors of the society	Courses arranged, handbooks		
	Agriculture/farming			
See Ch. 6.1.4	5.3 Farmers assisted in sustainable agricultural practises and in maintaining them	Field adviser network, handbooks	Advisory statistics, handbooks Reports of ministries, farmers organizations, researchers, etc;	Support of farmers unions, co-operatives, food industry and the media
See Ch. 6.1.4	5.4. Ecological farming spreading	Number of ecological farmers; number of ecological production (certified)	Certified ecological production statistics	
	Business and industry			
See Ch. 6.1.4	5.5 Environmental policies and programmes including education and training for local and international business and industrial companies, preferably as integral parts of environmental management systems and investments projects	Established environmental management systems (EMS) Established policies and programmes	EMS Certificates, Life Cycle Analysis, environmental reports, Annual reports and budgets, Company environmental policy and programme documents	Support of business organizations and trade unions/workers, Customers and citizens increasing interest
See Ch. 6.1.4	5.6 Environmental networking between businesses in different subregions play an important role in the exchange of information and experiences from one subregion to another. Success stories in combining environmental and business performance well known			
	Consumer issues			
See Ch. 6.1.1	5.7. Environmental product information included in product declarations	Environmental product information (in packages and elsewhere)	Statistics of products with environmental information and their market shares;	Increasing consumer and customer demands
See Ch. 6.1.1	5.8. Eco-labelling and certification is widely applied	Eco-labels; certificates		
See Ch. 6.1.1	5.9. Consumer organizations founded and other organizations begun to take up environmental consumer issues	Number of consumer organizations	Product labels and certificates, Consumer organizations	Development of civil society

See Ch. 6.1.2	Education 5.10. Environmental education and training in kindergartens supported with appropriate teaching material and facilities	Amount of nature Schools, Baltic Sea Project Schools, etc., amount of training courses and trained teachers;	Existing curricula for educational institutes, training reports, existing educational material and training; studies on existing facilities	Support of teachers organizations
See Ch. 6.1.2	5.11 Schools supplied with integrated environmental curricula, training, material and facilities	number and quality of environmentally friendly facilities		
See Ch. 6.1.2	5.12. Universities , other public education institutes for adults and research/development institutes supplied by integrated environmental training, curricula, study material and facilities			
See Ch. 7.1.1	International organizations 5.13. Environmental information and communication policies/ strategies for international organizations created and operational	Number of environmental information and communication plans	Query to international organizations	
See Ch. 6.1.4	The Media 5.14. Key environmental, economic, international, political, etc. journalists trained and offered training and exchange programmes	Training courses Exchange programmes Lists of participants	Course and exchange organizers Trained journalists Published articles, programmes, documents	Publishers and professional organizations supporting
See Ch. 8.1.2	5.15. Exchanged environmental documents, videos and other material effectively in the Baltic Sea area	Environmental material exchanged		
See Ch. 8.1.2	5.16. Coproduction teams between different media organisations in the whole Baltic Sea area supported	Number of coproduction Teams; Reported Coproduction activities	Documents and possibly WWW pages on the cooperation	
See Ch. 7.1.4	NGOs 5.17 Practical access for NGOs to the resources and financial support	Supported small NGO projects	Lists of beneficiaries in financing organizations	Administrators and donors are willing to include local and small projects and partners among their possible contractors.
Activities		Key actors:	Estimated cost (Euro):	
	Administration 5.1.1 Providing education and training for applying environmental thinking and facts within administrators own expertise	Governments, the EU, municipalities, international organizations (i.e. HELCOM)	200 000 – 500 000 per country	
	5.2.1 Providing support concerning the means for cooperation and communication with other actors of the society	Governments, municipalities,	100 000 – 500 000 per country	
	Agriculture/farming 5.3.1 Assessing and evaluating the need for environmental field advisers; establishing field adviser services	EU/CAP, governments, Farmers organizations, HELCOM, Baltic 21	100 000 or more	
	5.3.2 Creating networks of farmers practising sustainable agriculture		500 000 – 1 000 000 or more	
	5.3.3 Production of short training courses and manuals for applying sustainable agricultural practises for farmers		2000 000 – 5 000 000	
	5.4.1 Promoting ecological farming including finding good means to distribute the products in delivery channels		1000 000 – 5 000 000 per country or more	

Business and industry

5.5.1 Support environmental education attached to establishing environmental management systems	Companies, business organizations, international organizations (i.e. HELCOM), chambers of commerce	500 000 – 1 000 000
5.5.2 Evaluating the need for training for business organizations in the CEE countries		200 000 – 500 000
5.5.3 Designed and implemented training for company environmental policies and programmes		500 000 – 1 000 000 per country less than 100 000
5.6.1 Promotion of business environmental networking		
5.6.2 Distributing examples of success stories in combining environmental and business performance through printed material, the media, seminars, the Internet		500 000 – 1 000 000 per country
Consumer issues		
5.7.1 Promoting attaching environmental information to products	Companies, officials	Responsible companies decide
5.8.1 Promoting eco-labelling and certification of products and processes	Consumer organizations, officials	500 000 – 1 000 000 per country
5.9.1 Support establishing consumer organizations (in subregions 1 and 2) and promoting the existing ones in environmental issues	Consumer organizations	100 000 – 500 000 per country
Education		
5.10.1 Sustainable kindergarten management training for directors of kindergartens and providing facilities for environmental friendly behaviour	Ministries responsible for kindergartens, municipalities, Schools for kindergarden teachers, International organizations (such as UNICEF)	Less than 100 000 per country
5.10.2 Promoting special kindergartens with environmental programmes		Less than 100 000 per country
5.10.3 Study on possible cooperation of kindergartens in the regional level		Less than 100 000
5.10.4 Creation of ready-made simple environmental education material (games, plays etc.) for kindergartens, using local examples and languages		Less than 100 000 per country
5.11.1 Dissemination of ready-made environmental education curricula for schoolteachers , assistance in making curricula examples	Ministries of education, teachers, municipalities	Less than 200 000 per country
5.11.2 Promoting special schools with environmental programmes	Ministries of education	100 000 – 1 000 000 per country
5.11.3 Spreading already existing experience and expertise from special schools with environmental programmes to other schools (training of directors and teachers) for their sustainable school management: providing facilities for environmentally friendly behaviour	Ministries of education, teachers	100 000 – 1 000 000 per country

5.11.4 Preparation of packages of general environmental material for schoolteachers in the regional level	A main international organization (i.e. the EU, HELCOM), teachers	Less than 100 000
5.11.5 Adapting the packages of environmental education material to local conditions (with local examples) and translating to local languages	Ministries of education, teachers, Existing projects such as Coastwatch Baltic Schools, homes, NGOs, municipalities	Less than 100 000 per country
5.11.6 Promoting networks on environmental cooperation between schools, homes, NGOs and municipalities		
5.12.1 Preparation of environmental education curricula for university teachers and teachers in other public education institutes for adults	Ministries of education, teachers A main international organization (i.e. the EU, HELCOM), teachers	Less than 100 000 per country
5.12.2 Preparation of packages of general environmental material for teachers and researchers in the regional level	Ministries of education, teachers	Approx. 100 000 (maybe in connection with 5.11.4)
5.12.3 Adapting packages of environmental education material to more specific local or professional conditions (with local examples) and translating to local languages		Less than 100 000 per country
5.12.4 Environmental training for teachers and researchers at universities, in other public education institutes for adults and research/development institutes; supporting to manage institutes in a sustainable way; providing facilities for environmentally friendly behavior		
International organizations		
5.13.1 Creation of information policies/strategies for international organizations	International organizations (i.e. HELCOM)	less than 100 000 per organization, depending on the organization
The Media		
5.14.1 Educating key environmental journalists to combine environmental issues with other topics, and economic, international, political, etc. journalists vice versa.	Journalists, their organizations and employers	100 000 – 200 000
5.14.2 Targeted training of key journalists by professional exchange and short training courses. Promoting environmental journalists networking		100 000 – 500 000 per country
5.15.1 Evaluating needs for environmental documents, videos and other material	The Media, publishers, ministries of education and environment, EU International organizations (i.e. HELCOM)	Less than 100 000
5.15.2 Organising exchange of environmental documents and programmes by creating a network of parties interested. Exchanging/providing environmental documents, videos and other programmes in the Baltic Sea area		100 000 – 500 000
5.16.1 Supporting coproduction teams from different TV and radio stations, newspapers and magazines in planning, preparing, and distributing high quality environmental information in the Baltic Sea area.	The EU, TV and radio stations, newspapers and magazines etc.	100 000 – 500 000
NGOs		
5.17.1 Developing new policy and fast procedures for handling small NGO project proposals and reporting within the EU and national frameworks	The EU, national Governments	100 000 – 200 000

9.6 The international organizations as environmental information producers and disseminators – CASE HELCOM

Helsinki Commission – the Baltic Marine Environment Protection Commission – is governing the Helsinki Convention and playing a major role as a central environmental actor in the Baltic Sea area (see Chapter 5.1.1 and BOX 3). The structures, procedures and programmes of Helsinki Commission (HELCOM) have been recently reviewed. According to the review HELCOM should be refocused to take account of changing needs, and adapted to make it more coherent, proactive and flexible. ⁵⁴ HELCOM and the review process have been frequently informed on the proceeding and preliminary results of this project.

The 1992 Helsinki Convention stated, that the Contracting Parties – the coastal states and EEC – shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea area and the preservation of its ecological balance. Therefore, all the environmental policy instruments (see Fig. 2.1) could be used for implementing the statement. The principal kind of measures for work are common regulations, regional action programmes, preparation for combatting oil spillages and other pollution incidents, coastal zone management as well as nature protection programmes. The role of HELCOM in this could be concentrated to specialized information and analysis, common regulations and standards, and joint programmes and operations. The working process of HELCOM consist of a circle of setting new goals regularly, implementing the needed activ-

ities, analysing the results and their impacts on the environment and on the society, evaluating how well the goals are filled and the quality of the work done in HELCOM and assessing the new needs for knowledge and investments (see Fig. 9.2). Open communication within HELCOM and outwards from it is needed through all the phases of this working process.

HELCOM is active in the whole catchment area including parts of 14 countries. According to the results of the project questionnaire distributed to different professional groups in the Baltic Sea area, HELCOM enjoys a good reputation among those who are already familiar with this organisation. On the other hand, HELCOM and its activities still remain unknown among various professionals – not to mention the general public in this area. The feedback to the questionnaire supports a broader and more comprehensive communication as a future task for HELCOM. However, the information created through HELCOM activities should be more popularised. Considerable amount of valuable information is now left in the administrative and scientific reports that are mainly distributed through expert channels. To be able to transform an important scientific and administrative expert organization to an actively communicating entity is a challenging but an important task.

The development of HELCOM activities is needed in order to improve the role and capacity of HELCOM as a provider of specialised information and analysis. This information and analysis form a basis for the political adoption, public acceptance, technical design and environmental evaluation of measures to protect the Baltic Sea. In order to be a prominent information provider HELCOM needs to be known and to have a good credibility along with a fast and reliable information dissemination and communication system. This should consist of channels and forms of communication enabling the effective exchange of messages be-

tween the original sender – in this case HELCOM – and the target audience (see Fig. 9.2).

HELCOM would need an information and communication policy and system with a limited number of core tasks that should be based on the HELCOM's strategic vision for its future development.
See Chapter 9, the corresponding item no. 5.13.

The structure of HELCOM consists of Secretariat in Helsinki, Heads of Delegation and various contact persons of the Members and of the Observers belonging to the Helsinki Convention or HELCOM PITF, which is governing the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) (see Fig. 9.3). In addition, there are subsidiary bodies such as working groups.

In the process of creating an information and communication policy and system it is important to define the relevant tasks in it for different parts of the HELCOM structure. This report – all the findings and conclusions in it, and special proposals concerning HELCOM – serve as a basis for formulating this information and communication policy.

HELCOM should investigate how the implementation of the 1992 Helsinki Convention, art. 16 and 17 has proceeded.

As part of the planning process HELCOM should collect the experiences so far concerning information producing and dissemination.

In order to make the interaction effective, HELCOM should join the major existing information provider networks that are active in the area or promote the development of a network with backbone information carriers, for instance, UNEP, UNESCO, UN/CSD, UNECE/WHOEURO, OECD, EU/EEA, IMO, ECE, CBSS, Baltic 21, VASAB 2010 and IFIs.
See Chapter 9, the corresponding item no. 1.1

An efficient tool for raising environmental awareness would be a network of actors which can distribute information that enables a receiver to under-

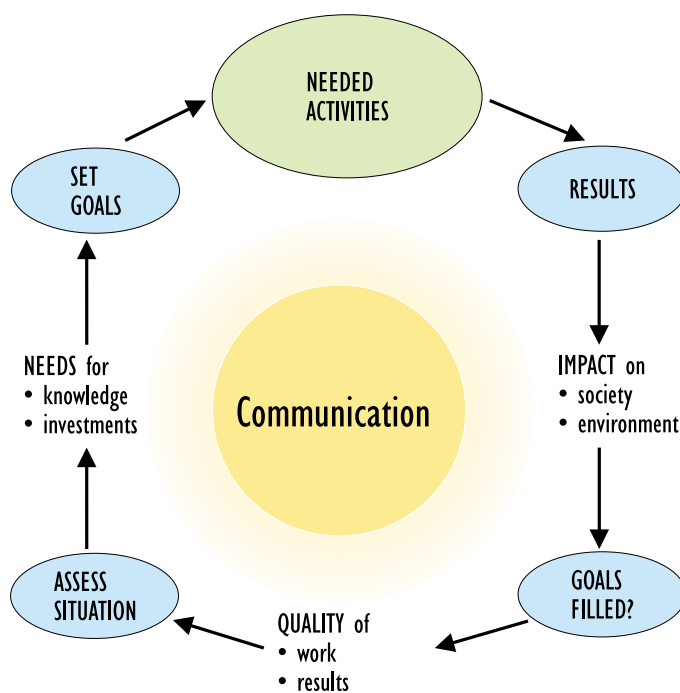


Figure 9.1. HELCOM activities and communication.

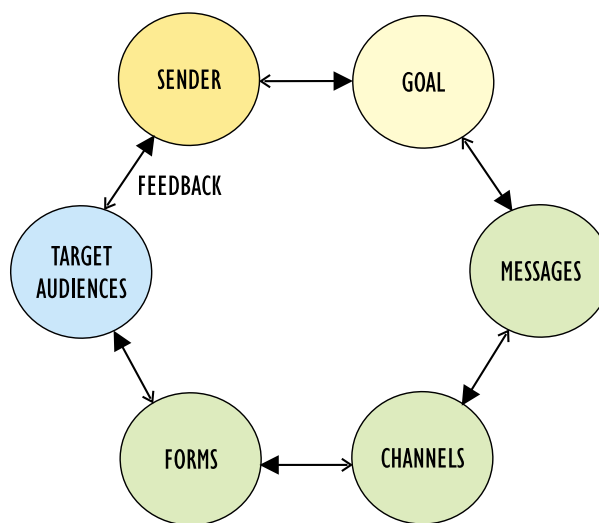


Figure 9.2. Elements in communication.

stand the state of the environment and the ways to improve it as well as to strive for comprehending and using new relevant information. HELCOM – as an appreciated and neutral actor – could play a prominent part here as an initiator/coordinator of the network. The network which is discussed in a greater detail in chapter 7.1.1 could also include clearing house functions.

During the process of developing the network the present initiatives and activities should be taken into account – and maybe included in the network. Examples of these are BALLERINA which is an Internet approach to increase access to transboundary environmental information in the Baltic Sea Region and BALTICSEA WEB for bibliographic material and documents.

During the planning process of the new information and communication policy, HELCOM should reconsider its mission and role among the international and national information producers that are active in the Baltic Sea area.

See Chapter 9, the corresponding item no. 1.1.

The interaction should be improved, in order to save resources and avoid unnecessary duplication. Moreover, HELCOM should maintain and develop contacts also with those environmental information producers that are active outside the Baltic Sea area, to be aware of the contemporary activities and future plans in the different parts of the world.

HELCOM should decide how to communicate with and promote information among the decision makers and other key persons in the Baltic Sea catchment area.

See Chapter 9, the corresponding items no. 3.5, 5.1, 5.3, 5.4, 5.5, 5.11, 5.12, 5.14, 5.15, 5.16.

These target groups should embrace, among others, politicians, administrators, researchers, educators, farmers, business and media persons, and people working for NGOs – which all have different cultures for receiving information. Also it has to be beared in mind that the stage of environmental awareness varies in the countries, organizations and among more specific target audiences considerably. Raising environmental awareness should include considering the quality of environment as an essential part of a functioning economy and sustainable development as a whole, including public health and well-being. All these factors have an influence on the contents, channels and forms of needed information, see Chapter 2.

While making the goals and activities of HELCOM more known and appreciated among a broader public, HELCOM should take into consideration the use of local languages spoken in a specific area.

See Chapter 8.4: _

In the project questionnaire the need to use local languages that are accessible and attractive for the receiver was clear even among target audiences where the skills to use foreign languages are good. The objectives and activities of HELCOM and other basic information should be distributed with leaflets in several languages. Also HELCOM homepages should include basic information in several languages of the area.

HELCOM should promote creating an international measurement method for assessing the level of environmental awareness. The assessment of environmental awareness should be carried out in the Baltic Sea area countries with a coordination of HELCOM.

See Chapter 9, the corresponding item no. 1.3.

Environmental awareness can be seen to consist of motivation, knowledge and skills. The indicators chosen to measure these could be studied by surveys focusing on attitudes, the level of knowledge or skills, as well as on practical actions and their results. This kind of indicators should be carefully selected in order to allow time-series analysis and the comparison of environmental awareness between different countries and regions.

HELCOM should develop its internal information dissemination and communication system in order to raise its capacity for fast activities as well as dissemination and utilisation of information.

See Chapter 9, the corresponding items no. 2.1, 2.2, 3.1, 3.2

Because of the complexity of HELCOM framework (see Fig. 9.3) and the elemental interdependence of the different bodies in it, a competent internal communication system is essential for a high degree of coordination and cooperation.

HELCOM information policy should take into account and utilise the growing importance of the electronic communication in the Baltic Sea area. The HELCOM WWW pages should be the subject of continuous improvement.

See Chapter 9, the corresponding item no. 1, 3.6 and Chapter 8.4:

The answers to the project questionnaire point to the strengthening role of new integrating communication systems such as the international TV-channels, the Internet and multi-functional mobile phones – all over the area.

In order to raise knowledge on the environmental state of the Baltic Sea and HELCOM actions to improve it, the HELCOM Secretariat and other bodies should not only be experts of the environmental issues of the Baltic Sea but also be competent to communication and information practices.

See Chapter 8.4.

The promotion of environmental awareness is important in many different fields of society (see Fig. 8.1). The possibilities to choose channels and forms to raise environmental awareness are numerous. Moreover, the multitude of information producers and distributors as well as target audiences are overwhelming. In order to be a successful information provider and communicator the whole HELCOM including all its subsidiary bodies needs a clear policy, and competent decisions and effective actions in accordance with it.

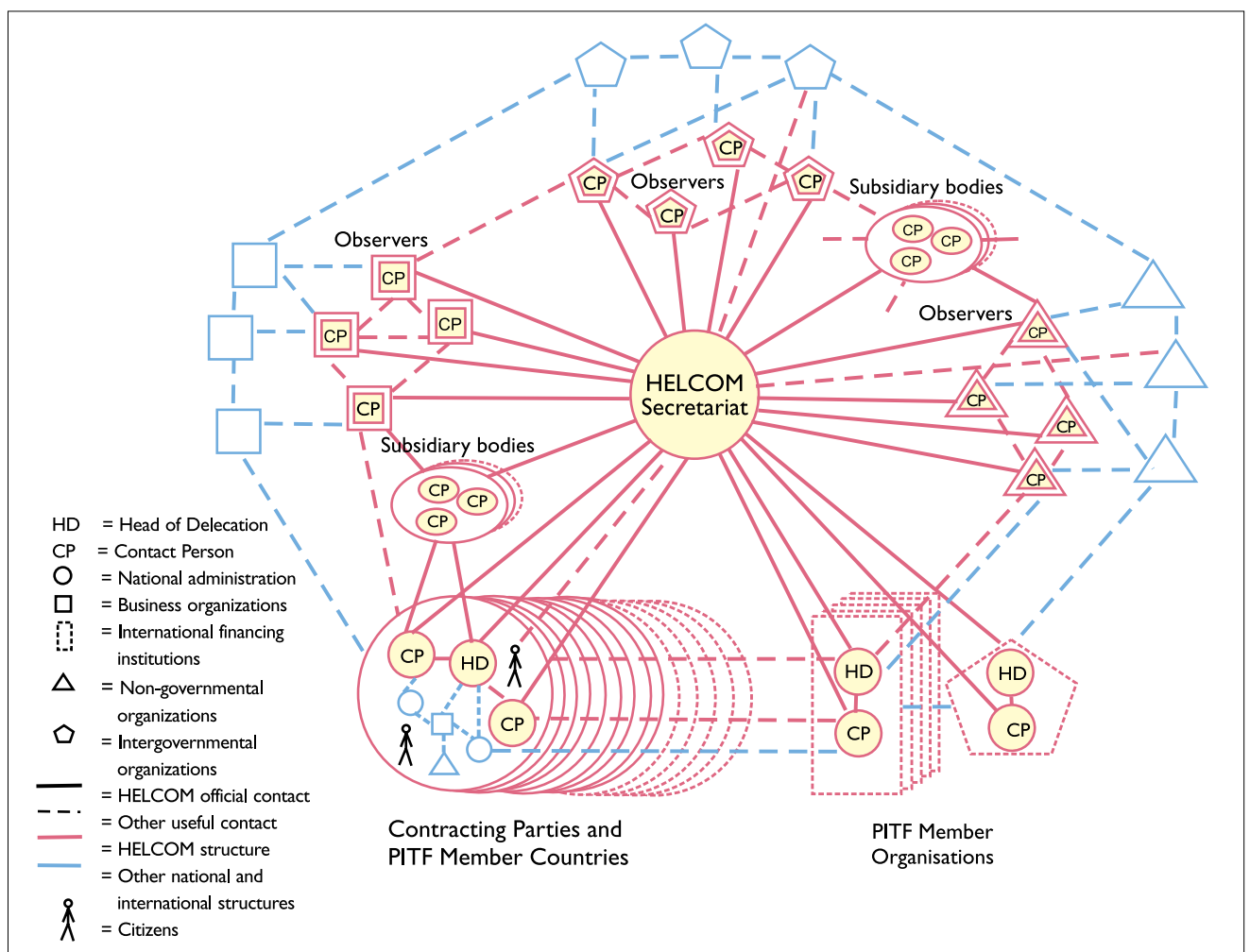


Figure 9.3. Information and communication structure of HELCOM.

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List of abbreviations

ABNP	Association of Baltic National Parks
ACOPS	Advisory Committee on Protection of the Sea
BALLERINA	Baltic Sea Region On-line Environmental Information Resources for Internet Access
Basel Convention	Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
Bern Convention	Convention on the Conservation of European Wildlife and Natural Habitats.
BEF	Baltic Environmental Forum
BIMCO	Baltic and International Maritime Council
Bonn Convention	Convention on the Conservation of Migratory Species of Wild Animals
BPO	Baltic Ports Organization
BSP	Baltic Sea Project
BSSSC	Baltic Sea States Subregional Cooperation
BTC	Baltic Tourism Commission
BUP	Baltic University Programme
CBSS	Council of the Baltic Sea States
CCB	Coalition Clean Baltic
CEMR	Council of European Municipalities and Regions
CIESIN	Consortium for International Earth Science Information Network
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
COPERNICUS	Co-operation Programme in Europe on Nature and Industry through Co-ordinated University Studies
CRE	Conference of European Rectors
DANIDA	Danish International Development Agency
DDT	1,1,1-trichloro-2,2-bis-(p-chlorophenyl)ethane
E ² RC	European Environmental Reference Centre
E&P FORUM	Oil Industry International Exploration & Production Forum
EBRD	European Bank for Reconstruction and Development
ECAT	Environmental Centres For Administration and Technology
EFMA	European Fertilizer Manufacturers' Association
EEA	European Environment Agency
EIB	European Investment Bank
EIONET	European Information and Observation Network
EMEP	European Monitoring and Evaluation Programme
ESPO	European Community Sea Ports Organization
EU	The European Union
EuDA	European Dredging Association
EURO CHLOR	European Chlor-Alkali Industry
GDP	Gross Domestic Product
GEF	Global Environment Facility
GLOBE	Global Legislators Organization for a Balanced Environment
GRID	Global Resource Information Database
HCB	Hexachlorobutadiene

HELCOM	Baltic Marine Environment Protection Commission, the Helsinki Commission
Helsinki Convention	Convention(s) for the Protection of the Marine Environment of the Baltic Sea.
html	Hypertext macro language
IBSFC	International Baltic Sea Fisheries Commission (Gdansk Commission)
ICC	International Chamber of Commerce
ICLEI	International Council for Local Environmental Initiatives
IISD	International Institute for Sustainable Development
IUCN	World Conservation Union
IMO	United Nations International Maritime Organization
Espoo Convention	Convention on Environmental Impact Assessment in a Transboundary Context
Gdansk Convention<	Convention on Fishing and Conservation of the Living Resources of the Baltic Sea and the Belts
GTZ	German international development agency (Deutsche Gesellschaft für Technische Zusammenarbeit)
LRTAP	Long-range Transboundary Air Pollution
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships
Montreal Protocol	Protocol on Substances that Deplete the Ozone Layer
NEFCO	Nordic Environment Finance Corporation
NIB	Nordic Investment Bank
Norad	Norwegian Agency for Development Cooperation
OECD	Organization for Economic Co-operation and Development
OSCE	Organization for Security and Co-operation in Europe
OSPAR Convention	A convention for the Protection of the Marine Environment of the North-east Atlantic
PAH	petroleum hydrocarbon
PCB	Polychlorinated biphenyl
PITF	Programme Implementation Task Force
Ramsar Convention	Convention on Wetlands of International Importance Especially as Waterfowl Habitat
SEI	Stockholm Environment Institute
SMF	Stockholm Marine Research Centre
SIDA	Swedish International Development Co-operation Agency
TEIA	Transboundary Environmental Information Agency
UMF	Umea Marine Sciences Centre
UN	United Nations
UNCED	UN Conference on Environment and Development, 1992 Rio Declaration
UNESCO	UN Educational, Scientific and Cultural Organization
UN ECE	UN Economic Commission for Europe
USAid	US Agency for International Development
VASAB	the Vision and Strategies around the Baltic 2010 Initiative of Ministers of Spatial Planning
Vienna Convention	Convention for the Protection of the Ozone Layer
WCMC	World Conservation Monitoring Centre
WHO	World Health Organization
World Heritage Convention	Convention Concerning the Protection of the World Cultural and Natural Heritage
WRI	World Resources Institute
WWF	Worldwide Fund for Nature
WWW	World Wide Web
Århus Convention	Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters