



FIFTH LEAD PARTY MEETING (LP 5)  
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## **Item 6**

# **Baltic 21 Indicators - Report on data availability, identified data sources and a proposed system for data provision for the Baltic 21 core indicators**

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Submitted by the Secretariat and UNEP/GRID-Arendal  
Required action: for revision and approval

The enclosed statistical material has been sent out for comments on September 7. The Baltic 21 Secretariat has received a few comments that have been included in the attached document.

In the enclosed report (also submitted to the SOG 11 Meeting as document SOG 11/7.2.a/1), the Baltic 21 Secretariat and UNEP/GRID-Arendal present the result of the work to compile statistics for the Baltic 21 overall and sector core indicators, as well as a system for providing data for the future monitoring of the Baltic 21 overall and sector goals. There is not yet an operative set of indicators to monitor the goal for spatial planning, and thus statistics have not yet been compiled.

The general conclusion is that data is, or will be, available for the majority of the Baltic 21 indicators. There are however gaps in the compiled statistics, due to insufficiently defined indicators, poor data availability, late data submissions, or low frequency of international data compilations. Many of the gaps will however be filled during autumn, when additional data is provided from national and international sources.

The sector LPs are invited to consider the recommendations presented in section 5 in the report (that also will be presented to the SOG 11 meeting for consideration and approval). The recommendations concern both the future Baltic 21 indicator process in large, and the finalisation of the chapter in the first Biennial Report that will present the monitoring of the Baltic 21 goals.

Furthermore, the sector LPs are invited to revise the presented statistics for their respective sector indicators (Annex 3-9), to make a final decision on what data sources that should be used, and to assess the quality of the data compiled via questionnaires. Requested changes should be submitted to the secretariat by November 15 at the latest. Finally, the sector LPs are urged to contact the sector contact persons that have not yet submitted requested data for their countries, and to urge them to do this as soon as possible, and no later than November 15.

# Report on data availability, identified data sources and a proposed system for data provision for the Baltic 21 core indicators

September 24, 1999

The following annexes are attached to this report:

Annex 1: Overall and sector goals and core indicators

Annex 2: Overview of identified data providers for the Overall and Sector indicators, including years for which data is available

Annex 3: Compiled statistics for the Overall indicators\*

Annex 4: Compiled statistics for the Agriculture sector indicators\*

Annex 5: Compiled statistics for the Energy sector indicators (to be added)\*

Annex 6: Compiled statistics for the Fisheries sector indicators\*

Annex 7: Compiled statistics for the Forest sector indicators\*

Annex 8: Compiled statistics for the Industry sector indicators\*

Annex 9: Compiled statistics for the Tourism sector indicators\*

Annex 10: Compiled statistics for the Transport sector indicators\*

Annex 11: Abbreviations

\*Please note that this material has been sent out earlier (September 7) for comments, with the exception of the data for the fisheries sector indicators that are submitted for the first time in Annex 6, and the statistics for the Energy sector indicators that has not yet been submitted by the Energy sector LPs. The secretariat has been informed that the Energy Sector will submit the requested data in time for the SOG 11 meeting.

## 1. Background information.

The Baltic 21 action programme, adopted in June 1998, includes an action (Joint action No 6, JO 6) that aims at setting up a system for providing data for indicators to be used for monitoring the adopted Baltic 21 goals for sustainable development in the Baltic Sea Region. The indicator-based monitoring of the Baltic 21 goals will be included in the biennial reporting to sector and environmental ministers, and in the reporting to Prime ministers approximately every 5<sup>th</sup> year. Besides the **Overall** goal for sustainable development, goals for the seven Baltic 21 sectors; **Agriculture, Energy, Fishery, Forest, Industry, Tourism** and **Transport**, as well as a goal for **Spatial planning**, have been adopted.

The **Overall** indicator set was adopted by the Baltic 21 steering group, the Senior Officials Group (SOG), on February 11-12, 1999. The **Sector** indicators were adopted by the SOG Bureau at their meeting on June 8, 1999. There is not yet an operative set of indicators to monitor the goal for **Spatial planning**, and thus statistics have not yet been compiled.

The Baltic 21 secretariat has commissioned UNEP/GRID-Arendal to assist the secretariat and the sectors in compiling statistics for the Baltic 21 **Overall** and **Sector** core indicators to be included in the first ministerial Biennial Report, and to identify a system for future provision of statistics for the indicators. The services also include the production of a presentation of the indicators at the Baltic 21 web site.

## 2. Organisation of work

The compilation of a data-based set of Baltic 21 indicators to be included in the first ministerial Biennial Report has been carried out by UNEP/GRID-Arendal in close co-operation with the Baltic 21 secretariat as the main co-ordinator and political supporter for the entire process. UNEP/GRID-Arendal has followed the initially set data collection mechanism: for **Overall** indicators using international data sources as much as possible, for **Sector** indicators following instructions given by the respective sector Lead Parties (LP).

The role of the LPs in this work has been to:

- Define the indicators and specify what data is required.

- Supported by UNEP/GRID-Arendal, identify suitable national and international data providers.
- Provide political support in case there is a problem to obtain necessary data from international and national statistical authorities.
- In the case of data gaps, prepare a questionnaire, together with UNEP/GRID-Arendal, where the required data is specified.
- Assess and comment on the compiled statistics.

The work was “kicked off” by UNEP/GRID-Arendal and the Baltic 21 Secretariat in Stockholm in May, 1999.

## 1. Mode of work

### 3.1 Overall indicators

As was intended, the data collection for the overall indicators set has mainly been carried out using international data sources. National data sources have only been used for one indicator, namely “*participation in local and national elections*”. In this case, data has been provided by national embassies in Sweden.

### 3.2 Sector indicators

Gathering of data for the sector indicators was discussed with the sector LPs (**Agriculture** – HELCOM, **Energy** – Denmark, **Fisheries**– IBSFC, **Forest** – Finland, **Industry** – Russia, **Tourism** – BTC, **Transport** – Germany).

When it has not been possible to use international data sources, data from national sources has been compiled via questionnaires, sent out to the sector contact persons in each country. The questionnaires have been prepared jointly by UNEP/GRID-Arendal and the respective LPs, while the distribution of the questionnaires has been the responsibility of the LPs.

Development and priorities of the LPs regarding Baltic 21 indicators have been rather different.

The **Energy** and **Fisheries** sectors have taken the full responsibility for collecting and assessing the data needed for their indicators. Data has been compiled both from international data sources (The International Energy Agency, The International Council for the Exploration of the Sea (ICES) and International Baltic Sea Fishery Commission (IBSFC)) and from national sources via national focal points.

When starting the work to compile statistics, many of the **Agriculture** sector indicators did not have a clear definition. It has only been possible to use international data sources (FAO, WB and HELCOM databases) for a limited number of the **Agriculture** sector indicators. The identification of international data providers has been carried out by GRID-Arendal. The **Agriculture** sector LP (HELCOM) organised a seminar in Berlin 21 July, 1999 to further the indicator work. The meeting agreed on elaborating a questionnaire in order to check the availability of data for the remaining indicators on the national level. This survey is presently ongoing.

International data sources for **Transport**, **Tourism** and **Industry** are not fully covering the submitted indicator sets. Data has therefore also been collected by questionnaires distributed via the LPs to the sector contact persons in the countries. The **Tourism** LP convened a meeting in Riga on June 17. The meeting brought together contact persons from Denmark, Estonia, Finland, Germany, Latvia, Lithuania and Poland. This meeting decided to reduce the indicator list to four core indicators.

The **Forest** sector has decided to follow the international report on Sustainable Forest Management in Europe, reported for the Third Ministerial Conference on the Protection of Forest in Europe. The missing parts of the report are Russian regions and Estonia. Russian data was collected by a questionnaire, while Estonia has not responded to a request.

## 4 Results and assessment

### 4.1 Indicator sets

At the initial stage of defining the Baltic 21 indicator set, much emphasis had been put on looking at parallel indicator processes, both world-wide and in Europe (e.g. UN, OECD, EU), in order to gain as much as possible from their methodologies as well as from collected data. On the other hand, the Baltic 21 indicators have been selected to monitor the Baltic 21 goals for sustainable development. Despite considerable overlaps, the Baltic 21 indicators thus differ from the sets of indicators developed by others. It has therefore been needed to also collect data directly from countries. Besides, not all countries in the region equally participate in other indicator development processes, e.g. Central European countries are outside the EU information system (although they are making considerable attempts towards harmonisation), the Baltic States do not directly participate in the OECD indicator work, Russia is not part of either.

Rather often it has been possible to refer to corresponding indicator definitions from e.g. OECD, UNCSO or EEA. The **Energy**, **Fisheries**, and to a less extent **Transport** and **Forest** indicators, are well harmonised with authoritative international processes. **Agricultural** indicators are moving in a similar direction. There seems however to be a certain lack of awareness and/or involvement of the Baltic 21 community with respect to some current European processes such as work on EU sectoral indicators (Transport, Energy, Industry, Agriculture). On the other hand, a desire to better harmonise activities with the international agenda has a high priority

### 4.2 Data

Data availability has been better wherever there has been a good match between Baltic 21 and international definitions. Gaps have been filled by directly approaching national data sources. An open question is however whether the frequency of data from international sources is sufficient for Baltic 21, and what happens if these sources change their routines and/or definitions.

#### 4.2.1. Overall indicators

National data for many of the **Overall** indicators have been easily (freely or for a low fee) available in digital format and in hard copies from such international or regional sources as the WB, WRI, OECD, FAO, UN/ECE, EMEP, HELCOM, BEF, EEA, IEA, UNDP and WCMC. A drawback of using published statistics is a usual time delay between data delivery, sometimes official quality control by the countries, and publication (typically, 1997 data are available in 1999). The delay can be reduced by working directly with data collecting organisations and/or their national focal points (see Institutional Framework below).

In a number of instances, statistical information has not been internationally available even though an indicator is internationally recognised. Data for such social indicators as “*access to safe water*”, “*population in cities exposed to pollution level*” and “*housing*” are in principle collected but are not always available for all countries or for all years. The indicator on “*waste generation*” is collected by OECD but with a frequency of once in five years.

For “*seals and eagles*” only national case-studies rather than a systematic coverage was identified.

#### 4.2.2. Sector indicators

Out of 11 indicators for **Agriculture**, 3 are covered by data from international data sources (FAO, WB and HELCOM). The sector is presently conducting a separate study to map the data availability for the remaining indicators at the national level.

Data compilation for the **Energy** and **Fisheries** sector indicators is advanced. Data is routinely collected by the sector LPs in co-operation with relevant international bodies. One issue of concern is however the geographical coverage for **Energy** which excludes Iceland as well as the regions of Novgorod and

Arkhangelsk. **Fisheries** doesn't include Iceland and Norway because these countries are outside of the Baltic Sea division.

Data availability on **Forest** is relatively good, 22 out of 30 indicators are covered by the UN/ECE assessment. The LPs has decided to limit the presentation to only those indicators. Data in the UN/ECE assessment normally represent only one year, and no time series are therefore available. To retrieve data from Estonia (not included into the UN/ECE assessment) and Russian sub-national data, national focal points in the countries were contacted.

Data for the majority of the **Industry** sector indicators is partly available from various international sources: IEA, OECD, UN/ECE and EMEP (data on NO<sub>2</sub> and SO<sub>2</sub> from EMEP has not yet been delivered). These international compilations lack however data for several countries. International data on injuries and fatalities in industry sector has not been found at all. Regarding the work to compile data directly from the countries, so far only the Russian Federation has submitted the requested statistics. More work is needed to identify reliable international and/or national data sources for the future.

No international database for the **Tourism** sector indicators has been found. Submission of data via distributed questionnaire is still missing for Denmark, Estonia, Lithuania, Norway, Russia and Sweden. Within national data sources, data on "employees" and "tourism overnight stays" are common, whereas "EMAS and ISO" and "tourism sector share of GDP" data are only available for a few countries. The frequency of these data is also a possible problem.

Data on **Transport** was collected directly from countries. Poland and Russia have not yet submitted any data. In general, the data availability is good. Only one out of 12 indicators, "unfragmented, low-traffic area", has no data coverage at all. Data availability problems however also exist for some of the other indicators. Only Germany, Sweden and Latvia have frequent data on "ton-km of hazardous material transported by modes of transport", but not for all kinds of modes; European coverage has not been found yet. Little data from the countries were available on "population exposed to transport noise higher than 65 db (A)", there is however a respective EU process. Data for "population in cities exposed to pollution standards" are derived from 1996 EEA publication, according to the EEA the data may be biased. Data on days when air quality standards are exceeded are available in AIRBASE/APIIS database regularly updated for the EEA countries and irregularly for non-EU countries, but there are methodological problems associated with data (for instance, trend is available only for Denmark and Finland). WRI also provides similar data for some European cities. Finally, a recommendation was received from Estonia and Norway that length and density of *public transportation network* should be changed to domestic passenger transport in passenger-km.

#### 4.2.3. The Russian Federation

A special case has been the **Russian Federation** for which sub-national level data have been required. As a rule, such data are not available from international bodies (only partly for Energy) and need to be collected from national and even sub-national agencies. Russian sub-national data were primarily collected from Russian national statistical publications that contained about 40% of the required data. Similar information was also collected from the same sources for sector indicators on Agriculture and Transport.

### 4.3 Institutional framework

The experience in 1999 has shown that the present Baltic 21 framework for indicator development and data collection generally serves its purpose. For the **Overall** indicators, collection of data from international sources proved to be efficient. Reaching a complete coverage has however required sometimes time-consuming talks with individual organisations that could have been even more resource intensive had many contacts not been established before. Nevertheless, official requests for data have sometimes been required e.g. by EMEP regarding acidification data. Established agreements about regular data exchange with Baltic 21 could have been useful in these connections.

On the **Sector** level, an officially nominated and active sectoral co-ordinator, with a network of national focal points in all countries, is well capable of organising consultations and data collection. In cases where such a co-ordinator or a network has been missing, a centrally-run process became rather time-consuming. A mechanism has also sometimes been lacking for inter-sectoral consultations which could help eliminate some redundancies in both the sets of indicators and the data-sets.

The overall co-ordination of the process, and the synthesis of the outputs, have been critical for completing the draft report. This function will most likely remain with the Secretariat in a direct or out-sourced form.

Table 1: Summary of mode of work and results – sector indicators

Sector	Data collection	The result of data collection
Agriculture	- International data sources (WB, FAO, HELCOM)	- 3 indicators out of 11 from international sources. - Ongoing national survey to map data availability for the remaining indicators
Energy	- Collected solely by the LP	- The LPs have not yet submitted any data. The data availability is however expected to be good - No data is collected for Iceland and two Russian regions
Fisheries	- Collected solely by the LP (national data sources, ICES, IBSFC)	- Data collected for all indicators.
Forests	- International data sources (UN/ECE) - Questionnaires to Russia and Estonia	- Data is available for 22 indicators out of 30 - No time series available yet - Estonia has not yet submitted any data
Industry	- International data sources (EEA, IEA, WB, OECD, UN/ECE) - Questionnaire	- Data for 9 of 10 indicators partly available from international data sources (data for several countries is however missing) - Questionnaire returned only by Russia
Tourism	- Questionnaire	- Denmark, Estonia, Lithuania, Norway, Russia and Sweden have not yet submitted any data
Transport	- Questionnaire	- Data available for all but one indicator – however not always for all countries. Poland and Russia have not yet submitted any data

## 5. Recommendations

The SOG is invited to consider and approve of, as appropriate, the recommendations presented below. The recommendations concern both the future Baltic 21 indicator process in large, and the finalisation of the chapter in the first Biennial Report that will present the monitoring of the Baltic 21 goals.

### 5.1 Baltic 21 indicator process

#### 5.1.1 Indicator sets

- As stressed by several sectors, the development and selection of Baltic 21 indicators must be seen as a process.
- There should be a continuous process to revise the indicator sets so that they better monitor the overall and sector goals for sustainable development in the Baltic Sea Region.
- There should be a continuous process to improve the “external” harmonisation with, and involvement into, European and other indicator processes of relevance for sustainable development.
- The need to improve the “internal” inter-sectoral harmonisation, as regards e.g. the selection of indicators and the use of definitions and units, should be assessed.

#### 5.1.2 Data

- International bodies should be used as the principal sources of information. This to avoid double work and to ensure a higher level of international harmonisation of the presented statistics. A drawback of using international statistics is the usual time delay and that the frequency of data compilations can not be controlled by Baltic 21.

- The availability and quality of data for the sector indicators delivered from national sources should be thoroughly evaluated by the respective sector networks.

### 5.1.3 Institutional framework

#### Overall indicators:

- The secretariat should be responsible for collecting data for the overall indicators.
- Identified international data providers should be used as far as possible.
- To assure a sustainable and efficient delivery of data from international data providers, the secretariat should enter longer-term agreements for routine data exchange with major international data providers.
- In those cases when national data sources are used, statistics should either be provided via the SOG members from national statistical authorities, or collected by the secretariat directly from national statistical authorities or publications. The first option will allow for a simultaneous assessment and approval of the data, and is therefore more efficient. The second option requires more financial resources and must be politically supported in the respective countries so that the required data is delivered. This is mostly important for the Russian Federation since international compilations do not contain sub-national statistics.

#### Sector indicators:

- The sector networks should be responsible for collecting the needed data from identified data providers and for assessing the data. It is important that the indicator process is owned by the sectors and that the quality of the statistics is assessed by the sectors.
- The sector LPs should supervise this work.
- Identified international data providers should be used as far as possible.
- To assure a sustainable and efficient delivery of data from international data providers, the sectors should enter longer-term agreements for routine data exchange with major international data providers, or request that the secretariat enters such agreements. The needed data must however be specified by the sectors.
- Sector contact persons (nominated by each country) should be responsible for collecting needed national statistics (this is specifically important as regards regional data from the Russian Federation).

(The collection and assessment of indicators to monitor the Energy and Fisheries sector goals already follow this framework.)

#### General:

- The secretariat should be responsible for co-ordinating the Baltic 21 indicator work by providing time frames and ensuring harmonised presentation of the indicators.
- The secretariat should be responsible for producing Biennial Reports and for publishing the indicators and statistics on the Baltic 21 website.

### 5.2 First Biennial Report to be adopted at SOG 12

- Sector contact persons should be urged to submit requested national data as soon as possible.
- The work to provide all Baltic 21 indicators with a clear definition must be completed. This refers mainly to the agriculture sector indicators, but also to some of the overall and other sector indicators.
- Only indicators for which data is available should be included in the report. Remaining indicators must be further developed before they are published. The SOG should decide which overall indicators that should be included, and the sectors which sector indicators that should be included.

Following these recommendations, there are a number of issues regarding the overall indicators that the SOG must consider. Those issues are summarised in table 2 below. The secretariat proposes i.a. that some indicators should not be included in the first Biennial Report due to, either lack of good definitions and thus available statistics, or to incomplete statistical material.

The possible exclusion of the indicator does not mean that it should not be possible to re-include it, as soon as suitable definitions and/or data are available. Exclusion of some indicators is also aiming at limiting the set of overall core indicators.

Table 2: SOG decisions needed regarding the overall indicators

Overall indicator	Comment	Proposal
Population in cities exposed to pollution levels above WHO air quality standards	Data is available from WRI and EEA. The EEA statistical material is presently very incomplete, but the indicator is considered as important and efforts are made to improve the data base.	Use WRI data until the EEA data set has been improved.
Percentage of population with access to safe water	Very incomplete statistical material. Data is only available for countries with 100 %, or close to 100 %, access.	Exclude until better data is available
Living conditions (housing)	Several definitions are available: 1) Floor area per person: median usable living space per person (m <sup>2</sup> ). 2) House price to income ratio: ratio of the median free-market price of a dwelling unit and the median annual household income. 3) House rent to income ratio: ratio of the median annual rent of a dwelling unit and the median annual household income of renters. 4) Permanent structures: percentage of housing units located in structures expected to maintain their stability for 20 years or longer under local conditions with normal maintenance. 5) Housing in compliance: percentage of the total housing stock in compliance with current regulations. 6) Land development multiplier: average ratio between the median land price of a developed plot at the urban fringe in a typical subdivision and the median price of raw, undeveloped land with planning approval in an area currently being developed. 7) Infrastructure expenditure: ratio of the total expenditures (operations, maintenance, and capital) by all levels of government on infrastructure services (roads, sewerage, drainage, water supply, electricity and garbage collection) during the current 8) Mortgage to credit ratio: ratio of total mortgage loans to all outstanding loans in both commercial and government financial institutions. 9) Housing production: total number of housing units (in both the formal and informal sectors) produced in the previous year per 1000 population. 10) Housing investment: total investment in housing (in both formal and informal sectors), as a percentage of gross domestic product.	Exclude until better indicator is available  (It is difficult to single out one definition that carries sufficient information.)
Percentage of population below poverty line	Alternative definitions/data sources: WB: Rural poverty rate is the percentage of the rural population living below the national poverty line.  WB: Urban poverty rate is the percentage of the urban population living below the national urban poverty line.  WB: National poverty rate is the percentage of the population living below the poverty line deemed appropriate for the country by its authorities. National estimates are based on population-weighted subgroup estimates from household surveys.  UNDP: Population below income poverty line (%) 14.40\$ a day (1985 PPP\$)	Very incomplete statistical material. Latest UNDP data from 1990.  Exclude until better data is available.
Size of top predator populations (seals, sea eagles and Guillemots) – not included	No systematic regional data coverage is available, national time series for some countries.	Exclude until better data is available
Percentage of population connected	WB and WHO definitions/indicators: (WB) Access to sanitation refers to the share of the population	Exclude the indicator since the definitions

to biological and chemical waste water treatment	<p>with at least adequate excreta disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Suitable facilities range from simple but protected pit latrines to flush toilets with sewerage. To be effective, all facilities must be correctly constructed and properly maintained.</p> <p>(WHO) Percentage of population with adequate sanitation refers to the proportion of population with access to a sanitary facility for human excreta disposal in the dwelling or immediate vicinity. A sanitary facility is a unit for the disposal of human excreta which isolates feces from contact with people, animals, crops and water sources. Suitable facilities range from simple but protected pit latrines to flush toilets with sewerage. All facilities, to be effective, must be correctly constructed and properly maintained.</p> <p>Data is only available for countries with 100 %, or close to 100 %, access.</p>	are rather different from the original indicator, and since data is only available for countries with 100 %, or close to 100 %, access.
Emission and discharges of (selected priority) hazardous substances in the Baltic Sea catchment area	HELCOM has made a pre-selection of priority hazardous substances, but the selection is still under discussion.	<p>Use statistics for Hg, Cd, Zn, Cu, Pb, Ni, Cr emissions until the priority hazardous substances have been selected</p> <p>Definition: Emission and discharges of hazardous metals to the Baltic Sea</p>
Use of non-renewable materials (measured as a selection of mined minerals (metals, plastics produced and other bulk materials of this type ) versus GNP	Internationally compiled statistics has only been found for a number of mined minerals and fossil fuels: Metal consumption (Al, Cd, Cu, Pb, Mg, Ni, tin, Tungsten ore, Zn) EEA and gas, oil, coal consumption IEA.	<p>Since the statistical material is incomplete, it is not relevant to calculate the consumption per GDP.</p> <p>The indicator should then read: Consumption of non-renewable material (measured as the consumption of a selection of metals and fossil fuels)</p>
Amount of dumped municipal waste versus GDP	<p>Alternative definition: Amount of generated municipal waste versus GDP</p> <p>OECD and EEA statistics are available.</p>	<p>Use EEA statistics since it covers more Baltic 21 countries.</p> <p>Since the statistical material is incomplete, it is not relevant to calculate the consumption per GDP. The indicator should then read: Amount of generated municipal waste</p>
Use of chemicals	Available EEA indicator: index on the production of chemical industry. The index measure the trend in volume of gross value added generated by chemical industry.	Exclude until better indicator/data is available
Number of threatened species	Many different data sources. No harmonised definition and methodology.	Exclude until better data is available

## Annex 1: Overall and sector goals and core indicators

**Bold text** = indicators for which **no** data has been collected (see annex 2 and 3)

### OVERALL GOAL AND CORE INDICATORS

“The essential objective of Baltic Sea Region co-operation is the constant improvement of the living and working conditions of their peoples within the framework of sustainable development, sustainable management of natural resources, and protection of the environment.” Sustainable development includes three mutually interdependent dimensions - economic, social and environmental.

This means for the region:

- A safe and healthy life for current and future generations.  
Core indicators:
  - Life expectancy at birth
  - Infant mortality rate
  - Population in cities exposed to pollution levels above WHO air quality standards
  - Percentage of population with access to safe water
  - Living conditions (housing)
  
- A co-operative and prosperous economy and a society for all.  
Core indicators:
  - GDP/capita
  - Exports/imports of goods and services
  - Gross domestic investment/GDP
  - Gross domestic savings/GDP
  - National indebtedness
  - Lowest versus highest GDP/capita in the region
  - Percentage of population below poverty line
  - Unemployment rates (rural and urban if possible)
  
- That local and regional co-operation is based on democracy, openness and participation.  
Core indicators:
  - Participation in national and local elections
  
- That biological and ecosystem diversity and productivity are restored or maintained.
- That pollution to the atmosphere, land and water does not exceed the carrying capacity of nature.  
Core indicators:
  - Wetland area
  - Number of threatened species (terrestrial, fresh water, marine)
  - Protected areas versus total
  - **Size of top predator populations (seals, sea eagles and Guillemots) – not included**
  - Land area where depositions are above critical loads for acidification and eutrophication
  - NO<sub>x</sub> emissions
  - SO<sub>2</sub> emissions
  - CO<sub>2</sub> emissions
  - Load of nutrients to the Baltic Sea
  - Percentage of population connected to biological and chemical waste water treatment
  - Emission and discharges of (selected priority) hazardous substances in the Baltic Sea catchment area
  - Consumption of ozone depleting substances

- That renewable resources are efficiently used and managed, within their regeneration capacity.
- That materials flow of non-renewable resources are made efficient and cyclic, and that renewable substitutes are created and promoted.

Core indicators:

- Energy consumption versus GDP
  - Renewable energy/total
  - Use of non-renewable materials (measured as a selection of mined minerals (metals, plastics produced and other bulk materials of this type ) versus GDP
  - Amount of dumped municipal waste versus GDP
  - Use of chemicals
- That awareness of the elements and processes leading to sustainability is high among different actors and levels of society.

The Baltic Sea Region recognises its interdependence with other parts of the world and makes its contribution to the fulfilment of sustainable development goals at the global and European level.”

## **AGRICULTURE SECTOR GOAL AND CORE INDICATORS**

“Agriculture contributes significantly to the society of the future. Sustainable agriculture is the production of high quality food and other agricultural products/services in the long run with consideration taken to economy and social structure, in such a way that the resource base of non-renewable and renewable resources is maintained. Important sub-goals are:

- The farmers income should be sufficient to provide a fair standard of living in the agricultural community.”

Core Indicators:

- **Average income of farmers**
- “The farmers should practise production methods which do not threaten human or animal health or degrade the environment including biodiversity and at the same time minimise the environmental problems that future generations must assume responsibilities for.”

Core Indicators:

- **Cases of respiratory diseases**
  - **Consumption of growth promoters and veterinary antibiotics per live stock unit**
  - **Nitrate concentration in water (mg/l)**
  - **Total P input/removed P**
  - Livestock units per ha on farm level
  - Grazing area/total arable land
  - Load of nutrient to the Baltic Sea from arable land (Riverine and direct nitrogen and phosphorous loadings into the Baltic Sea)
- “Non-renewable resources have to gradually be replaced by renewable resources and that re-circulation of non-renewable resources is maximised.”
- Core Indicators:
- **Recycled P/total P used**
- “Sustainable agriculture will meet societies needs of food and recreation and preserve the landscape, cultural values and the historical heritage of rural areas and contribute to create stable well developed and secure rural communities.”
- Core Indicators:
- **Availability of rural social services**
  - **% of farmers with agricultural education**
- “The ethical aspects of agricultural production are secured.”

## **ENERGY SECTOR GOAL AND CORE INDICATORS**

(to be added when the Energy sector submits statistics for their indicators)

## **FISHERIES SECTOR GOAL AND CORE INDICATORS**

“Sustainable fishery is achieved when a high probability of fish stocks being able to replenish themselves over a long period of time within a sound ecosystem is assured, while offering stable economic and social conditions for all those involved in the fishing activity.

The goal for achieving sustainable development of fisheries in the Baltic Sea area thus means development of economically and socially sustainable, environmentally safe and responsible fisheries by:

- Maintaining biological viable fish stocks, the marine and aquatic environment and associated biodiversity.”  
Core Indicators:
  - Spawning Stock Biomass
  - Fishing mortality
  - Recruitment
- “Within these limits, establish maximum fishing possibilities and appropriate selective fishing techniques for harvesting stocks.”  
Core Indicators:
  - Landings per country: total amount of landings in tonnes of cod, salmon, herring, sprat;
  - Number of fishing vessels per country operating in the Baltic Sea
  - Average engine power per country: total Kilowatt of the fleet, divided by the number of vessels
  - Fish consumption per capita per country
- “Distribute the direct and indirect benefits of open sea and coastal fishery resources between local communities in an equitable manner.”  
Core Indicators:
  - Number of full time fishermen engaged in the Baltic Sea Region, per country.

## **FOREST SECTOR GOAL AND CORE INDICATORS**

“The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems. Criteria for sustainable forest management are:

- Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycles.”  
Core Indicators:
  - 1.1 Area of forest and other wooded land (and changes in area) (classified, if appropriate, according to forest and vegetation type, ownership structure, age structure, origin of forest)
    - a. Area of forest and other wooded land
    - b. species groups (coniferous, broadleaved, mixed)
    - c. ownership structure (public and private)
    - d. age structure (age classes)
  - 1.2. Changes in:
    - a. total volume of the growing stock
    - b. mean volume of the growing stock on forest land (classified, if appropriate, according to different vegetation zones or site classes)
    - c. age structure or appropriate diameter distribution classes
  - 1.3. Total carbon storage and, changes in the storage in forest stands

- “Maintenance of forest ecosystem health and vitality.”  
Core Indicators:  
**2.1. Total amount of and, changes over the past 5 years in depositions of air pollutants (assessed in permanent plots).**  
2.2. (Changes) in serious defoliation of forests using the UN/ECE and EU defoliation classification (classes 2, 3, and 4) over the past 5 years.  
2.3. Serious damage caused by biotic or abiotic agents:  
a. severe damage caused by insects and diseases with a measurement of seriousness of the damage as a function of (mortality or) loss of growth  
b. annual area of burnt forest and other wooded land  
**c. annual area affected by storm damage and volume harvested from these areas**  
d. proportion of regeneration area seriously damaged by game and other animals or by grazing  
**2.4. Changes in nutrient balance and acidity over the past 10 years (pH and CEC); level of saturation of CEC on the plots of the European network or of an equivalent national network**
- “Maintenance and encouragement of productive functions of forests (wood and non-wood).”  
Core Indicators:  
3.1. Balance between growth and removals of wood over the past 10 years  
3.2. Percentage of forest area managed according to a management plan or management guidelines.  
**3.3. Total amount of and changes in the value and/or quantity of non-wood forest products (e.g., hunting and game, cork, berries, mushrooms, etc.)**
- “Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems. “  
Core Indicators:  
4.1. (Changes) in the area of:  
a. natural and ancient seminatural forest types (“Naturalness”)  
b. strictly protected forest reserves  
c. forests protected by special management regime  
4.2. (Changes) in the number and percentage of threatened species in relation to total number of forest species (using reference lists e.g., IUCN, Council of Europe or the EU Habitat Directive)  
**4.3. Changes in the proportions of stands managed for the conservation and utilisation of forest genetic resources (gene reserve forests, seed collection stands, etc.); differentiation between indigenous and introduced species**  
**4.4. Changes in the proportions of mixed stands of 2-3 tree species**  
4.5. In relation to total area regenerated, proportions of annual area of natural regeneration
- “Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water).”  
Core Indicators:  
5.1. Proportion of forest area managed primarily for soil protection  
**5.2. Proportion of forest area managed primarily for water protection**
- “Maintenance of other socio-economic functions and conditions.”  
Core Indicators:  
**6.1. Share of the forest sector from the gross national product**  
6.2. Provision of recreation: area of forest with access per inhabitant, % of total forest area  
**6.3. Changes in the rate of employment in forestry, notably in rural areas (persons employed in forestry, logging, forest industry)**

## INDUSTRY SECTOR GOAL AND CORE INDICATORS

“Sustainable development for the industrial sector in the Baltic Sea Region is maintaining continuity of economic, social, technological and environmental improvements. This means for the industrial sector in the region:

- Reaching eco-efficiency by the delivery of competitively priced goods and services that satisfy human and social needs and bring quality of life while progressively reducing ecological impacts and resource intensity throughout the life cycle, to a level at least in line with the estimated carrying capacity of the Baltic Sea Region with respect to biodiversity, ecosystem and use of natural resources.”

Core Indicators:

- Energy consumption/industrial GDP
  - Use of renewable energy/total energy consumption
  - CO<sub>2</sub> emissions/industrial GDP
  - NO<sub>x</sub> emissions/industrial GDP
  - SO<sub>x</sub> emissions/industrial GDP
  - Use of non-renewable material/industrial GDP
  - Industrial waste/industrial GDP
- 
- “Improvement of the working environment and the industrial safety for the workforce.”  
Core Indicators:
    - **Annually reported injuries or fatalities of industry workers**
- 
- “Applying sustainable strategies to resources, processes, products and services.”  
Core Indicators:
    - Number of companies applying Environmental Management Systems (ISO, EMAS)
    - Number of companies applying Quality Management Systems (ISO)

## TOURISM SECTOR GOAL AND CORE INDICATORS

“Sustainable tourism is any form of tourist development or activity which respects the environment, ensures long-term conservation of natural and cultural resources, and is socially and economically acceptable and equitable.

The overall goal is to achieve a common understanding on the requirements of sustainable tourism in the Baltic Sea Region. The objectives of the tourism sector in developing sustainable tourism refer to the three main elements of sustainability, that is environment, economy and people and should be:

- To sustain a sound environment, to safeguard the recreational quality of natural and man-made landscape and to integrate natural, cultural and human environments.”

Core Indicators:

- Companies with EMS (only ISO or EMAS)
- 
- “To promote and sustain the competitive quality and efficiency of the tourism business.”  
Core Indicators:
    - Number of tourist overnight stays
    - Tourism sector share of GDP
- 
- “To create satisfactory social conditions for tourists and the local population.”  
Core Indicators:
    - Number of tourism sector employed personnel

## TRANSPORT SECTOR GOAL AND CORE INDICATORS

“The goal with regard to sustainable transportation in the Baltic Sea region consists of two components:

- To minimise the negative environmental effects, the consumption of non-renewable resources and the use of land for transportation purposes to protect human health and the environment, in particular the sensitive ecosystems of the region.”

Core Indicators:

- CO2 emission
  - NOx emission
  - SO2 emission
  - VOC emission
  - Particle emission
  - Road traffic injuries and fatalities
  - **Population in cities exposed to pollution levels above WHO air quality standards.**
  - Population exposed to transport noise greater than 65 db (A)
  - Ton km of hazardous material transported by modes of transport: water, rail, road
- 
- “To retain transport’s ability to serve the economic and social development of the Baltic Sea region.”

Core Indicators:

- Access to public transportation: network and density
- Road and rail network length and density
- **Unfragmented, low-traffic areas (minimum 100qm)**

Annex 2: Overview of identified data providers, including years for which data is available

Overall indicators

Overall Indicators 1)	Russia 2)	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
GDP/capita	WB , RR(R) (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)
Exports/imports of goods and services	WB (1990 – 1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)
Gross domestic investment , % of GDP	WB RR(R) (1990 – 1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)
Gross domestic savings/GDP	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)
National indebtedness ( <i>Long-term debt, DOD current US dollars</i> )	WB (1990 – 1997) RR(R) 1993-1997	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)
Lowest versus highest GDP/capita in the region.	RR(R) (1990 – 1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)
% of population below poverty line ( <i>Population below income poverty line (%) 14.40\$ a day (1985 PPP\$)</i> )	RR(R) (1994-1997)	WB (..), UNDP (1990)	WB (1994), UNDP (1990)	WB (..), UNDP (1990)	WB (..), UNDP (1990)	UNDP (..)	WB (..), UNDP (1990)	WB (..), UNDP (1990)	WB (1993), UNDP (1990)	WB (..), UNDP (1990)	WB (..), UNDP (1990)
Unemployment rates, rural and urban if possible	WB (1991-1996)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)
Participation in national and local Elections		Denmark's Statistic (1994, 1998)		Finland Statistics (1995, 1999)		Iceland Embassy in Sweden (1995, 1999)	Latvian Embassy in Sweden (1995, 1998)	Lithuanian Embassy in Sweden (1996)			Sweden Statistics (1998)
Life expectancy at birth	WB , RR(R) (1990 – 1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)	WB (1990-1997)

## Overall indicators

Overall Indicators 1)	Russia 2)	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
Infant mortality rate	WB, RR(R) (1990-1997)	WB (1990-1997), WHO 1998									
Population in cities exposed to pollution levels above WHO air quality standards	RR(E) 1998 (Arhangelsk, Kaliningrad, Novgorod, St.Petr.)	WRI (cities), EEA (countries)	EEA/ETC-AQ (Tallin)	WRI (cities), EEA (country)	WRI (cities), EEA (country)	WRI (Reykjavk))	EEA/ETC-AQ (Riga)	EEA/ETC-AQ (Vilnius)	WRI (cities), EEA/ETC-AQ	WRI (cities)	WRI (cities)
Energy consumption versus GNP ( <i>TFC/GDP</i> )	IEA (1995 – 1997)	IEA (1995-1997)	IEA (1995-1996)	IEA (1995-1997)	IEA (1995-1997)	IEA (1995-1997)	IEA (1995-1996)	IEA (1995-1996)	IEA (1995-1997)	IEA (1995-1997)	IEA (1995-1997)
Renewable energy/total	IEA	IEA (1995-1997)	IEA (1995-1996)	IEA (1995-1997)	IEA (1995-1997)	IEA (1995-1997)	IEA (1995-1996)	IEA (1995-1996)	IEA (1995-1997)	IEA (1995-1997)	IEA (1995-1997)
Use of non-renewable materials versus GNP ( <i>Metal consumption EEA, gas, oil, coal consumption IEA</i> )	IEA (1995 – 1996)	EEA (1990-1995) IEA (1995-1997)	EEA (1990-1995) IEA (1995-1996)	EEA (1990-1995) IEA (1995-1997)	EEA (1990-1995) IEA (1995-1997)	EEA (1990-1995) IEA (1995-1997)	EEA (1990-1995) IEA (1995-1996)	EEA (1990-1995) IEA (1995-1996)	EEA (1990-1995) IEA (1995-1997)	EEA (1990-1995) IEA (1995-1997)	EEA (1990-1995) IEA (1995-1997)
Amount of dumped municipal waste versus GNP ( <i>municipal waste generation total, versus GDP 1995</i> )	OECD (1990's)	EEA, OECD (1995)	EEA (1995)	EEA, OECD (1995)	EEA, OECD (1995)	EEA, OECD (1990, 1995)	EEA (1995)	EEA (1995)	EEA, OECD (1990, 1995)	EEA, OECD (1990, 1995)	EEA, OECD (1990, 1995)
Land area where depositions are above critical loads for acidification and eutrophication	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received	UN/ECE, not yet received
NO <sub>x</sub> emissions ( <i>NO2 emissions</i> )	UN/ECE (1990-1996) RR(E) (1997)	UN/ECE (1990-1996)		UN/ECE (1990-1996)							
SO <sub>2</sub> emissions	UN/ECE (1990-1996) RR(E) (1997)	UN/ECE (1990-1996)		UN/ECE (1990-1996)							
Load of nutrients to the Baltic Sea	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)		HELCOM (1995)	HELCOM (1995)	HELCOM (1995)		HELCOM (1995)
Emission and discharges of (selected priority) hazardous substances in the Baltic Sea catchment	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)		HELCOM (1995)	HELCOM (1995)	HELCOM (1995)		HELCOM (1995)

## Overall indicators

Overall Indicators 1)	Russia 2)	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
area											
Use of chemicals ( <i>Index of chemical industry production index</i> )	EEA (..)	EEA (1990-1996)	EEA (1991-1996)	EEA (1990-1996)	EEA (1990-1996)	EEA (..)	EEA (1990-1996)	EEA (1990, 1993-1996)	EEA (..)	EEA (1990-1996)	EEA (1990-1996)
CO <sub>2</sub> emissions	UN/ECE (1990-1996)	UN/ECE (1990-1996)	UN/ECE (1990-1996)	UN/ECE (1990-1996)	UN/ECE (1990-1996)	UN/ECE (1990-1995)	UN/ECE (1990-1996)				
Consumption of ozone depleting substances	Montreal Protocol (1990-95)	Montreal protocol, EEA (1990-94)	EEA (1995-1996)	EEA (1990-1994)		Montreal protocol, (1990-96)	Montreal protocol (1995-1996)	Montreal protocol (1990-1996)	Montreal protocol (1990-1996)	Montreal protocol (1990-1996)	Montreal protocol (1990-1994)
Wetland area	WCMC	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
Number of threatened species (terrestrial, fresh water, marine)	WRI (1990`s)	WRI, OECD (1990`s)	WRI, BEF (1990`s)	WRI, OECD (1990`s)	WRI, OECD (1990`s)	WRI, OECD (1990`s)	WRI, BEF (1990`s)	WRI, BEF (1990`s)	WRI, OECD (1990`s)	WRI, OECD (1990`s)	WRI, OECD (1990`s)
Protected areas versus total (1997)	RR(E)	WRI WCMC	WRI WCMC	WRI WCMC	WRI WCMC	WRI WCMC	WRI WCMC	WRI WCMC	WRI WCMC		WRI WCMC
Size of top predator populations (seals, sea eagles and Guillemots)											Case studies
Percentage of population with access to safe water ( <i>WHO includes rural and urban territories</i> )	WB (..)	WB (..)	WB (..)	WB (1993), WHO (1995)	WB (..)	WB (1995), WHO (1995)	WB (..), WHO (1994)	WB (..)	WB (1990, 1995), WHO (89-90)	WB (..), WHO (1995)	WB (..), WHO (89-90)
Living conditions ( <i>10 indicators housing</i> ). Habitat - UNCHS	RR(R) (1990-1995), UNCHS (Novgorod)	UNCHS (Copenhagen)	UNCHS (Tallin)		UNCHS (Duisburg, Erfurt, Freiburg, Koeln, Leipzig, Wiesbaden)		UNCHS (Riga)	UNCHS (Vilnius)	UNCHS (Warsaw)		UNCHS (Stockholm)
Percentage of population connected to biological and chemical waste water treatment ( <i>Sanitation</i> )		WB (1990-1993)	WB (..)	WB (1990, 1993) WHO (1995)	WB (..)	WB (1990, 1993 and 1995) WHO (1995)	WHO (1994)	WB (..)	WB (1990,) WHO (1989-1990)	WB (1990, 1995) WHO (1995)	WB (1990, 1995) WHO (1995)

## Agriculture indicators

Agriculture Indicators	Russia	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
N and P load to the Baltic Sea	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)	HELCOM (1995)		HELCOM (1995)	HELCOM (1995)	HELCOM (1995)		HELCOM (1995)
Grazing area/total arable land, %	RR(E) (1990, 1995-1997)	WB, FAO (1990-1994)	WB, FAO (1992-1994)	WB, FAO (1990-1994)	WB, FAO (1990-1994)	WB, FAO (1990-1994)	WB, FAO (1992-1994)	WB, FAO (1992-1994)	WB, FAO (1990-1994)	WB, FAO (1990-1994)	WB, FAO (1990-1994)
Livestock units per ha on farm level	FAO, RR(R) (1991-1998)	FAO (1990-1998)	FAO (1992-1998)	FAO (1990-1998)	FAO (1990-1998)	FAO (1990-1998)	FAO (1992-1998)	FAO (1992-1998)	FAO (1990-1998)	FAO (1990-1998)	FAO (1990-1998)

## Energy indicators

This overview does not cover the Energy sector, since the LPs have not yet submitted any statistics.

## Fisheries indicators

Fisheries Indicators	Russia	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
Recruitment, by sub-divisions of the Baltic Sea	International Council for the Exploration of the Sea (1974 – 1999)										
Fishing Mortality, by sub-divisions of the Baltic Sea	International Council for the Exploration of the Sea (1974 – 1998)										
Spawning Stock Biomass (SSB)	International Council for the Exploration of the Sea (1974 – 1999)										
Landings from the Baltic Sea Statistical sub-divisions 22-32 (EC – Denmark, Finland, Germany and Sweden)	IBSFC (1992 – 1998)	EC data, IBSFC (1992 – 1998)	IBSFC (1992 – 1998)	EC data, IBSFC (1992 – 1998)	EC data, IBSFC (1992 – 1998)		IBSFC (1992 – 1998)	IBSFC (1992 – 1998)	IBSFC (1992 – 1998)		EC data, IBSFC (1992 – 1998)
Number of fishing vessels per country operating in the Baltic Sea	*)	National d.s. (1997-1998)	National d.s. (1998)	National d.s. (1997)	National d.s. (1998)		National d.s. (1997)	National d.s. (1997-1998)	National d.s. (1997-1998)		National d.s. (1997)
Average engine power per country	(..)	National d.s. (1997-1998)	National d.s. (1998)	National d.s. (1997)	National d.s. (1998)		National d.s. (1997)	National d.s. (1997-1998)	National d.s. (1997-1998)		National d.s. (1997)
Fish consumption per capita per country	(..)	National d.s. (1997-1998)	National d.s. (1998)	National d.s. (1997)	National d.s. (1998)		National d.s. (1997)	National d.s. (1997-1998)	National d.s. (1997-1998)		National d.s. (1997)
Number of fulltime		National d.s.	National d.s.	National d.s.	National d.s.		(..)	National d.s.	National d.s.		National d.s.

## Fisheries indicators

Fisheries Indicators	Russia	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
fishermen engaged in the Baltic Sea Region, per country		(1997-1998)	(1998)	(1997)	(1997-1998)			(1997-1998)	(1997-1998)		(1997)

## Forest indicators

(Since only one data source has been used, we refer to annex 7. Data in the UN/ECE assessment normally represent only one year, and no time series are therefore available.)

## Industry indicators

Industry Indicators	Russia	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
Energy consumption/industrial GDP	IEA /WB (1995)	IEA /WB (1995)	IEA /WB (1995-1996)	IEA /WB (1995-1996)	(..)	IEA /WB (1995)	IEA /WB (1995-1996)	IEA /WB (1995-1996)	IEA /WB (1995)	IEA /WB (1995-1996)	(..)
Use of renewable energy/total energy consumption	IEA (1995)	IEA (1995 – 1997)	IEA (1995 – 1996)	IEA (1995 – 1997)	IEA (1995 – 1997)	IEA (1995 – 1997)	IEA (1995 – 1996)	IEA (1995 – 1996)	IEA (1995 – 1997)	IEA (1995 – 1997)	IEA (1995 – 1997)
CO <sub>2</sub> emissions/industrial GDP	National d.s. (1994-1998)	*)	*)	*)	*)	*)	*)	*)	*)	*)	*)
NO <sub>x</sub> emissions/industrial GDP	National d.s. (1994-1997)	*)	*)	*)	*)	*)	*)	*)	*)	*)	*)
SO <sub>x</sub> emissions/industrial GDP	National d.s. (1994-1998)	*)	*)	*)	*)	*)	*)	*)	*)	*)	*)
Use of non-renewable material/industrial GDP (overall indicators): Me consumption/GDP, TFC (gas, oil, coal)/GDP	IEA/WB (1995-1996)	EEA/WB (1990-1995) IEA/WB (1995)	(..) IEA/WB (1995-1996)	EEA/WB (1990-1995) IEA/WB (1995-1996)	(..) (..)	(..) IEA/WB (1995)	(..) IEA/WB (1995-1996)	(..) IEA/WB (1995-1996)	EEA/WB (1990-1995) IEA/WB (1995)	EEA/WB (1990-1995) IEA/WB (1995-1996)	EEA/WB (1990-1994) (..)
Industrial waste		OECD, UNECE, (mid-1990s)	UNECE (1996)	OECD, UNECE, (mid-1990s)	OECD, UNECE, (mid-1990s)	OECD, UNECE, (mid-1990s)	(..)	(..)	OECD, UNECE, (mid-1990s)	OECD, UNECE, (mid-1990s)	OECD, UNECE, (mid-1990s)
Annually reported injuries or fatalities of industry workers	(..)										
ISO	Global Net, ISO World (1993-1999)	Global Net, ISO World (1993-1999)	Global Net, ISO World (1993-1997)	Global Net, ISO World (1993-1999)	Global Net, ISO World (1993-1999)	Global Net, ISO World (1993-1997)	Global Net, ISO World (1993-1997)	Global Net, ISO World (1993-1997)	Global Net, ISO World (1993-1999)	Global Net, ISO World (1993-1999)	Global Net, ISO World (1993-1999)

## Tourism indicators

Tourism Indicators	Russia	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
Companies with environmental management system (ISO or EMAS)				National data source (1998)	National data source (1998)		National data source (1991 – 1998)		(..)		
Number of tourism sector employed personnel				National data source (1991 - 1997)	National data source (1995 - 1998)	National data source (1991 - 1996)	National data source (1996)		National data source (1992 - 1997)		
Tourism sector share of GDP				National data source (1991 - 1997)	National data source (1995 - 1998)		National data source (1996)		(..)		
Number of tourist overnight stays				National data source (1994 - 1998)	National data source (1995 - 1998)	National data source (1996 - 1997)	National data source (1994 - 1998)				

## Transport indicators

Transport Indicators	Russia	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
CO2 emissions from transport sector, CO – Estonia and Lithuania	<i>National d.s.(1994-1995)</i>	National d.s.(1991-1997)	National d.s.(1991-1997)	National d.s.(1991-1998)	National d.s.(1991-1997)	National d.s.(1991-1997)	National d.s.(1990-1997)	National d.s.(1991-1997)	OECD (1990, 1995)	National d.s.(1991-1998)	National d.s.(1994-1998)
NOx emission from transport sector		National d.s.(1991-1998)	National d.s.(1991-1997)	National d.s.(1991-1998)	National d.s.(1991-1997)	National d.s.(1991-1997)	National d.s.(1991-1997)	National d.s.(1991-1997)		National d.s.(1991-1998)	National d.s.(1994-1998)
SO2 emission from transport sector		National d.s.(1991-1998)	National d.s.(1991-1997)	National d.s.(1991-1998)	National d.s.(1991-1997)	National d.s.(1991-1997)	National d.s.(1991-1997)	National d.s.(1991-1997)		National d.s.(1991-1997)	National d.s.(1994-1998)
VOC emission from transport sector		National d.s.(1991-1997)	National d.s.(1991-1997)	National d.s.(1991-1998)	National d.s.(1991-1997)		National d.s.(1991-1997)	National d.s.(1991-1997)		National d.s.(1991-1998)	National d.s.(1994-1998)
Particle emission from transport sector		National d.s.(1991-1998)	National d.s.(1995-1997)	National d.s.(1991-1998)	National d.s.(1991-1997)		(..)	National d.s.(1992-1997)		National d.s.(1991-1998)	National d.s.(1995-1998)
Road traffic fatalities		National d.s.(1991-1998)	National d.s.(1991-1998)	National d.s.(1990-1998)	National d.s.(1990-1997)	National d.s.(1990-1997)	National d.s.(1990-1998)	National d.s.(1991-1997)		National d.s.(1991-1998)	National d.s.(1991-1998)
Road traffic injuries		National d.s.(1991-1998)	National d.s.(1991-1998)	National d.s.(1991-1998)	National d.s.(1991-1998)	National d.s.(1990-1998)	National d.s.(1990-1998)	National d.s.(1991-1998)		National d.s.(1991-1998)	National d.s.(1991-1998)

## Transport indicators

Transport Indicators	Russia	Denmark	Estonia	Finland	Germany	Iceland	Latvia	Lithuania	Poland	Norway	Sweden
		1998)	1998)	1998)	1997)	1997)	1998)	1997)		1998)	1998)
Population exposed to transport noise higher than 65 db (A)		National d.s.(1991, 1996)	(..)	National d.s.(1996, 1997)	National d.s.(1992, 1997)		(..)	National d.s.(1991, 1995)			National d.s.(1998)
Population in cities exposed to pollution levels above WHO air quality standards		(..)	(..)	(..)	(..)		(..)	(..)		(..)	(..)
Ton-km of hazardous material transported by modes of transport: water, rail, road		(..)	(..)	(..)	National d.s.(1992)		National d.s.(1996, 1997)	(..)		(..)	National d.s.(1993, 1995- 1998)
Public transportation length		(..)	(..)	(..)	National d.s.(1991-1997)		National d.s.(1991-1998)	National d.s.(1991-1997)		National d.s.(1991-1997)	(..)
Public transportation density		(..)	(..)	(..)	National d.s.(1991-1997)		National d.s.(1991-1998)	National d.s.(1991-1997)		(..)	(..)
Road network length		National d.s.(1991-1998)	National d.s.(1995-1998)	National d.s.(1991-1998)	EEA.(1990, 1992-1996)	OECD.(1990-1997)	National d.s.(1993-1998)	National d.s.(1991, 1993-1997)		National d.s.(1991-1998)	National d.s.(1990-1998)
Road network density		National d.s.(1991-1998)	National d.s.(1995-1998)	National d.s.(1991-1998)	(..)	OECD.(1991-1997)	National d.s.(1993-1998)	National d.s.(1991, 1993-1997)		National d.s.(1991-1998)	National d.s.(1991-1998)
Rail network length		National d.s.(1991-1998)	National d.s.(1991-1998)	National d.s.(1991-1998)	EEA.(1991-1996)		National d.s.(1991-1998)	National d.s.(1991-1997)		National d.s.(1993-1998)	National d.s.(1991-1997)
Rail network density		National d.s.(1991-1998)	National d.s.(1991-1998)	National d.s.(1991-1998)	National d.s.(1991-1996)		National d.s.(1991-1998)	National d.s.(1991-1997)		National d.s.(1993-1998)	National d.s.(1991-1997)
Unfragmented, low-traffic areas (minimum 100 qm)		(..)	(..)	(..)	(..)		(..)	(..)		(..)	(..)

### Notes:

1) *Italic*- Alternative used to approximate original definition of an indicator.

2) *Italic* – Data of Russian Federation. Plain text – Data for Russian Regions. RR(R) – Data sources Statistical Yearbook of Russia, 1998 RR(E) – Data source report on Environmental Protection, 1998

(..) – data are not available.

\*) – data are available but not yet received.

d.s. – data source

## Annex 3: Statistics for the Overall Indicators

### GDP/capita

Indicator: General indicator  
 Sub-category: Economic output  
 Dataset title: GDP per capita, PPP  
 Nr.: 1.1.  
 Unit: current international dollars  
 \*Data sources: WB  
 Time series: 1990-1997  
 Definition: GDP per capita based on purchasing power parity (PPP). GDP PPP is gross domestic product converted to international dollars using purchasing power parity rates.

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	1.76E+04	1.83E+04	1.93E+04	1.99E+04	2.10E+04	2.22E+04	2.30E+04	2.37E+04
Estonia	5.34E+03	5.07E+03	4.23E+03	4.03E+03	4.08E+03	4.42E+03	4.70E+03	5.24E+03
Finland	1.69E+04	1.61E+04	1.61E+04	1.62E+04	1.72E+04	1.85E+04	1.93E+04	2.02E+04
Germany	..	1.78E+04	1.89E+04	1.89E+04	1.98E+04	2.07E+04	2.11E+04	2.13E+04
Iceland	1.84E+04	1.89E+04	1.88E+04	1.93E+04	2.02E+04	2.08E+04	2.20E+04	..
Latvia	5.74E+03	5.30E+03	3.65E+03	3.23E+03	3.37E+03	3.48E+03	3.67E+03	3.94E+03
Lithuania	5.65E+03	5.45E+03	4.48E+03	3.85E+03	3.56E+03	3.78E+03	4.01E+03	4.22E+03
Norway	1.68E+04	1.77E+04	1.90E+04	1.99E+04	2.13E+04	2.26E+04	2.39E+04	2.45E+04
Poland	4.68E+03	4.37E+03	4.59E+03	4.85E+03	5.19E+03	5.74E+03	6.14E+03	6.52E+03
Russion Federation (RF)	6.23E+03	6.06E+03	5.60E+03	5.13E+03	4.54E+03	4.47E+03	4.36E+03	4.37E+03
Russian Regions (RR) 1)	4.98E+03	4.85E+03	4.48E+03	4.10E+03	3.63E+03	3.58E+03	3.49E+03	3.50E+03
Sweden	1.69E+04	1.70E+04	1.74E+04	1.73E+04	1.81E+04	1.93E+04	1.97E+04	1.98E+04
<i>min</i>	<i>4.68E+03</i>	<i>4.37E+03</i>	<i>3.65E+03</i>	<i>3.23E+03</i>	<i>3.37E+03</i>	<i>3.48E+03</i>	<i>3.49E+03</i>	<i>3.50E+03</i>
<i>max</i>	<i>1.84E+04</i>	<i>1.89E+04</i>	<i>1.93E+04</i>	<i>1.99E+04</i>	<i>2.13E+04</i>	<i>2.26E+04</i>	<i>2.39E+04</i>	<i>2.45E+04</i>

#### Notes and references:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

.. Data are not available.

1) The GDP per capita for RR has been recalculated from RF data (WB data source) using index 0,8.

The index (0,8) is the ratio of Russian Region GDP rlb. per capita to Russian Federation GDP rbl per capita. The 0,8 is approximate number for 1994-1996. The data base of Russian GDP rlb. per capita is Statistical Yearbook of Russain Regions ( Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998).

## Exports/imports of goods and services

Unit: % of GDP

\*Data sources: WB

Time series: 1990-1997

### Definiton:

Exports of goods and services represent the value of all goods and other market services provided to the world. Included is the value of merchandise, freight, insurance, travel, and other nonfactor services. Factor and property income (formerly called factor services), such as investment income, interest, and labor income, is excluded.

Imports of goods and services represent the value of all goods and other market services provided to the world. Included is the value of merchandise, freight, insurance, travel, and other nonfactor services. Factor and property income (formerly called factor services), such as investment income, interest, and labor income, is excluded

Countries:	Ratio of exports to imports							
	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	1.16	1.19	1.22	1.24	1.17	1.13	1.15	
Estonia			1.11	0.94	0.88	0.90	0.85	0.87
Finland	0.94	0.97	1.05	1.19	1.22	1.29	1.27	
Germany			1.00	1.03	1.03	1.03	1.05	
Iceland	1.04	0.96	1.00	1.11	1.17	1.11	1.01	
Latvia	0.97	1.38	1.09	1.28	1.04	0.95	0.86	0.83
Lithuania	0.86	1.41	1.17	0.91	0.90	0.82	0.84	0.84
Norway	1.19	1.25	1.22	1.21	1.19	1.19	1.27	
Poland	1.33	0.92	1.07	1.04	1.05	1.05	0.90	0.87
Russia Federation (RF)	1.01	1.02	1.10	1.12	1.21	1.16	1.20	1.13
Sweden	1.01	1.06	1.06	1.12	1.13	1.19	1.20	

	Export of good and services							
Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	35.83	37.21	36.52	35.03	35.53	35.36	35.32	..
Estonia	..	..	60.25	68.89	78.63	76.84	67.09	77.19
Finland	23.05	22.26	26.90	33.05	35.72	37.69	37.70	..
Germany	..	25.48	23.79	22.05	22.74	23.65	24.20	..
Iceland	34.29	31.66	30.58	32.98	36.19	35.71	36.31	..
Latvia	47.71	35.25	79.94	72.65	45.96	46.87	50.90	50.49
Lithuania	52.09	29.64	23.35	82.54	55.38	52.96	53.35	54.50
Norway	40.65	40.35	38.23	38.36	38.41	38.05	40.61	..
Poland	28.65	23.52	23.70	22.94	24.04	25.90	24.83	26.25
Russia Federation (RF)	18.16	13.27	55.57	35.50	27.68	26.37	24.10	22.86
Sweden	29.92	27.93	27.86	32.73	36.43	40.93	39.99	..

	Import of goods and services							
Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	30.76	31.33	29.91	28.36	30.24	31.18	30.59	..
Estonia	..	..	54.36	73.10	89.32	85.13	78.61	88.60
Finland	24.56	22.90	25.56	27.66	29.36	29.30	29.66	..
Germany	..	25.56	23.82	21.49	22.11	22.86	22.99	..
Iceland	32.81	32.87	30.63	29.77	30.95	32.05	35.81	..
Latvia	49.02	25.49	73.07	56.82	44.33	49.28	58.99	60.64
Lithuania	60.67	21.04	19.93	90.36	61.40	64.76	63.18	65.07
Norway	34.09	32.27	31.32	31.77	32.18	32.05	32.01	..
Poland	21.51	25.44	22.17	21.96	23.00	24.57	27.62	30.35
Russia Federation (RF)	17.95	12.99	50.45	31.62	22.90	22.70	20.09	20.15
Sweden	29.55	26.38	26.19	29.15	32.25	34.50	33.25	..

Notes:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

.. Data are not available.

## Gross domestic investment/GDP

Unit: % of GDP

\*Data sources: WB

Time series: 1990-1997

Definition: Gross domestic investment consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including commercial and industrial buildings, offices, schools, hospitals, and private residential dwellings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	2.03E+01	1.91E+01	1.81E+01	1.72E+01	1.76E+01	1.96E+01	1.94E+01	..
Estonia	3.02E+01	2.62E+01	2.69E+01	2.64E+01	2.89E+01	2.67E+01	2.78E+01	2.98E+01
Finland	2.76E+01	2.05E+01	1.72E+01	1.40E+01	1.61E+01	1.65E+01	1.66E+01	..
Germany	..	2.34E+01	2.30E+01	2.16E+01	2.23E+01	2.22E+01	2.12E+01	..
Iceland	1.81E+01	1.90E+01	1.74E+01	1.58E+01	1.51E+01	1.51E+01	1.76E+01	..
Latvia	4.01E+01	3.37E+01	4.12E+01	9.18E+00	1.91E+01	1.76E+01	1.88E+01	1.97E+01
Lithuania	3.26E+01	2.43E+01	1.57E+01	1.92E+01	1.84E+01	2.47E+01	2.45E+01	2.65E+01
Norway	2.33E+01	2.14E+01	2.07E+01	2.16E+01	2.23E+01	2.37E+01	2.34E+01	..
Poland	2.56E+01	1.99E+01	1.52E+01	1.56E+01	1.59E+01	1.80E+01	2.02E+01	2.22E+01
Russia Federation (RF)	3.01E+01	3.63E+01	3.46E+01	2.70E+01	2.55E+01	2.25E+01	2.26E+01	2.19E+01
Russian Regions (RR) 1)	2.15E+01	2.36E+01	1.78E+01	1.21E+01	1.15E+01	1.11E+01	1.17E+01	1.26E+01
Sweden	2.13E+01	1.79E+01	1.65E+01	1.33E+01	1.41E+01	1.54E+01	1.46E+01	..

Notes:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

.. Data are not available.

1) The gross domestic investment (% of GDP) for Russian Regions has been calculated from Russian Federation data (WB data base). The Gross domestic investment (current US\$) for Russian Federation has been calculated using the ratio of investment of Russian Regions to Russian Federation (data source Statistical Yearbook of Russian Regions). The GDP, PPP (current international \$) has been calculated by index 0,07 which is the ratio of Russian Regions GDP (rbl) to Russian Federation GDP (rbl).

## Gross domestic savings/GDP

Unit: % of GDP

\* Data sources: WB

Time series: 1990-1997

Definition: Gross domestic savings are calculated as the difference between GDP and total consumption.

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	25.38	24.96	24.72	23.85	22.84	23.82	24.08	..
Estonia	22.34	34.48	32.75	22.18	18.19	18.44	16.28	18.43
Finland	26.06	19.85	18.57	19.34	22.42	24.85	24.59	..
Germany	..	23.36	22.96	22.11	22.94	22.95	22.40	..
Iceland	19.55	17.75	17.33	19.06	20.38	18.77	18.13	..
Latvia	38.77	43.50	48.11	25.01	20.76	15.19	10.74	9.59
Lithuania	24.03	32.89	19.16	11.35	12.40	12.93	14.67	15.97
Norway	29.82	29.50	27.57	28.18	28.57	29.69	32.01	..
Poland	32.76	17.99	16.70	16.53	16.90	19.35	17.38	18.15
Russia Federation (RF)	30.35	36.55	39.76	30.89	30.31	26.19	26.61	24.65
Russian Regions (RR)	..	..	..	..	..	..	..	..
Sweden	21.70	19.46	18.17	16.86	18.32	21.86	21.33	..

Notes:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

.. Data are not available.

## National indebtedness

Unit: Current US dollars

\*Data sources: WB

Time series: 1990-1997

Definition: Long-term debt is debt that has an original or extended maturity of more than one year. It has three components: public, publicly guaranteed, and private nonguaranteed debt. Data are in current U.S. dollars.

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	..	..	..	..	..	..	..	..
Estonia	..	..	4.78E+07	9.61E+07	1.17E+08	1.65E+08	2.20E+08	2.97E+08
Finland	..	..	..	..	..	..	..	..
Germany	..	..	..	..	..	..	..	..
Iceland	..	..	..	..	..	..	..	..
Latvia	..	..	3.00E+07	1.24E+08	2.08E+08	2.71E+08	3.01E+08	3.52E+08
Lithuania	..	..	2.74E+07	2.00E+08	2.68E+08	4.53E+08	7.97E+08	1.11E+09
Norway	..	..	..	..	..	..	..	..
Poland	3.93E+10	4.50E+10	4.31E+10	4.18E+10	4.04E+10	4.21E+10	4.08E+10	3.61E+10
Russian Federation	4.80E+10	5.52E+10	6.43E+10	1.01E+11	1.07E+11	1.00E+11	1.01E+11	1.06E+11
Russian Region (credit 1)				2.94E+03	1.09E+04	2.78E+04	5.37E+04	7.97E+04
Russian Region (debit 1)				2.60E+03	8.73E+03	2.07E+04	3.94E+04	5.33E+04
Sweden	..	..	..	..	..	..	..	..

Notes :

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

.. Data are not available.

1) Data for industrial enterprises, agriculture, transport and building. Millions rubls in the end of a year. Data source: Statistical Yearbook of Russian Regions, 1998 (Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998)

Alternative indicators available at WB: External debt, total (DOD, current US\$), Central governmental debt (% of GDP), Short-term debt, Total debt service.

### Lowest versus highest GDP/capita in the region

Unit: % of GDP

\* Data sources: WB

Time series: 1990-1997

Definition: Cross countries lowest/highest GDP/capita.

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
lowest/highest GDP	2.54E-01	2.31E-01	1.89E-01	1.62E-01	1.59E-01	1.54E-01	1.46E-01	1.43E-01
Denmark			1.93E+04	1.99E+04				
Estonia								
Finland								
Germany								
Iceland	1.84E+04	1.89E+04						
Latvia			3.65E+03	3.23E+03	3.37E+03	3.48E+03		
Lithuania								
Norway					2.13E+04	2.26E+04	2.39E+04	2.45E+04
Poland	4.68E+03	4.37E+03						
Russian Regions							3.49E+03	3.50E+03
Sweden								

Notes:

Data are missing for Germany (1990) and Iceland (1997)

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

## Percentage of population below poverty line

Unit: %

\* Data sources: WB, 1999 World Development Indicators

Time series:

Definitions: (WB) Rural poverty rate is the percentage of the rural population living below the national poverty line. Urban poverty rate is the percentage of the urban population living below the national urban poverty line. National poverty rate is the percentage of the population living below the poverty line deemed appropriate for the country by its authorities. National estimates are based on population-weighted subgroup estimates from household surveys.

Countries:	National poverty line (WB)				Population below income poverty line (%) 14.40\$ a day (1985 PPP\$), 1990 (UNDP)
	year	rural	urban	national	
Denmark		..	..	..	8
Estonia	1994	14.7	7	8.9	40
Finland		..	..	..	4
Germany		..	..	..	12
Iceland					..
Latvia		..	..	..	23
Lithuania		..	..	..	46
Norway		..	..	..	3
Poland	1993	..	..	23.8	13
Russian Region (RR) 1)	1994			22.01	
	1995			24.67	
	1996			23.42	
	1997			23.24	
Sweden		..	..	..	5

Notes:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

UN Development Programme, data on the Internet

1) Source: Statistical Yearbook of Russian Regions, 1998 (Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998)

## Unemployment rates

Unit: % of total labour force

Data sources: WB

Time series: 1990-1997

Definition: Unemployment rate is the share of the labour force that is without work but available for and seeking employment. Definitions of labor force and unemployment differ by country

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	..	..	..	..	8	7	7	8
Estonia	..	..	..	2	2	2	2	..
Finland	3	8	13	18	18	17	16	15
Germany	..	7	9	10	11	13	9	11
Iceland	..	3	4	5	5	5	4	4
Latvia	..	..	1	5	6	6	7	..
Lithuania	..	0	1	4	4	6	7	..
Norway	5	6	6	6	5	5	5	5
Poland	6	12	14	16	16	15	14	..
Russia Federation (RF)	..	0	1	1	2	3	3	..
Russian Regions (RR)	..	..	..	..	..	..	..	..
Sweden	2	3	5	8	8	8	8	8

Notes:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

.. Data are not available.

### Participation in national and local elections

Unit: % of population entitled to vote  
 Data sources: national embassies in Stockholm  
 Time series: 1990-1997

Country	Year	National (Parliament)	Year	Local
Denmark <sup>1</sup>	1994	84,3%	1997	70,1%
	1998	86,0% (Danish Embassy)		
Estonia				
Finland <sup>2</sup>	1995	68,6%	1992	70,1%
	1999	65,2%	1996	61,3%
Germany				
Iceland	1995	87,4%	1998	82,3%
	1999	84,1%		
Latvia	1995	71,9%	1997	56,81%
	1998	71,9%		
Lithuania	1996	52,92%	1997	39,92%
Norway				
Poland				
Russia				
Sweden <sup>3</sup>	1998	81.4 %	1998	78.6 %

<sup>1</sup> Statistisk Årsbog 1998, Danmarks Statistik

<sup>2</sup> Finland in Figures, Statistics Finland 1998 and 1999

<sup>3</sup> Statistics Sweden (CSB)

## Life expectancy at birth

Unit: years

\* Data sources: World Bank

Time series: 1990-1997

Definition: Life expectancy at birth (male, female) indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life

Countries:	1990	1991	1992	1993	1994	1995	1996	1997	1990	1991	1992	1993	1994	1995	1996	1997
	Male	Female														
Denmark	72	..	73	73	73	..	73	73	78	..	78	78	78	..	78	78
Estonia	65	64	64	62	61	62	64	64	75	75	75	74	73	74	75	76
Finland	71	71	72	..	73	73	73	73	79	79	80	..	80	80	81	81
Germany	72	..	72	72	73	..	73	74	79	..	79	79	79	..	80	80
Iceland	76	75	76	77	..	77	..	77	80	81	81	81	..	81	..	81
Latvia	64	64	63	62	61	61	63	64	75	75	75	74	73	73	76	75
Lithuania	67	65	65	63	63	64	65	66	76	76	76	75	75	75	76	77
Norway	73	74	74	..	75	..	75	76	80	80	80	..	81	..	81	81
Poland	67	66	67	67	68	68	68	69	76	75	76	76	76	76	77	77
Russia Federation (RF)	64	64	62	59	57	58	60	61	74	74	74	72	71	72	73	73
Russian Regions (RR) 1)	64	63	61	57	56	57	59	61	74	74	73	71	70	71	72	72
Sweden	75	..	75	76	..	76	77	77	80	..	81	81	..	82	82	82

Note:

For Russian Regions data of 1990 (male and female) correspond to data 1989-1990.

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

1) Statistical Yearbook of Russian Regions, 1998 (Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998)

## Infant mortality rate

Unit: per 1,000 live births

\* Data sources: WB (1990-1997), WHO 1998

Time series: 1990-1997

Definition: Infant mortality rate is the number of infants who die before reaching one year of age, per 1,000 live births in a given year.

Countries:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	8	7	7	5	6	5	6	6	7
Estonia	12	13	16	16	15	15	10	10	19
Finland	6	6	5	4	5	4	4	4	6
Germany	7	7	6	6	6	5	5	5	
Iceland	6	6	4	5	3	6	..	6	5
Latvia	14	16	17	16	16	19	16	15	18
Lithuania	10	14	17	16	14	12	10	10	21
Norway	7	6	6	5	5	4	4	4	5
Poland	19	18	17	16	15	14	12	10	15
Russia Federation (RF) 1)	17.4	17.8	18	19.9	18.6	18.1	17.4	17.2	..
Russian Regions (RR) 1)	16.5	16.1	16.2	17.8	16.1	15.5	14.3	13.2	..
Sweden	6	6	5	5	4	4	4	4	5

Notes:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

World Health Organization.

1) Statistical Yearbook of Russian Regions, 1998 (Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998). Infant mortality for the Russian Regions has been calculated by the same method for entire Russia differs from original estimates by up to 2.2%

.. Data are not available.

## Population in cities exposed to pollution levels above WHO air quality standards

Unit:

Data sources: 1998-1999 World Resources Institute, EEA

Time series:

1998-1999 World Resources Institute

Countries:	City	Year	Population, 1000, 1995	TSP µg/m3	Black smoke, µg/m3	PM10 µg/m3	SO2, µg/m3 WHO guidelines 50 µg/m3 (1 year)	NO2, µg/m3 WHO guidelines 40- 50 µg/m3 (1 year)
Denmark	Copenhagen	1995	1326	61			7	54 f)
Estonia 2)	Tallin		500			..	..	..
Finland	Helsinki	1995	1059	40			4	35
	Tempere	1995	185	96 f)			5	
	Turku	1995	176	61			6	37
Germany	Berlin	1995	3317	50			18	26
	Frankfurt	1995	3606	36			11	45 f)
	Munich	1995	2238	45			8	53 f)
Iceland	Reykjavik	1995	100	24			5	42 f)
Latvia 2)	Riga	1992	897			> 80	<20	50-75 f)
Lithuania 2)	Lithuania	1993	584			..	..	< 30
Norway	Bergen	1993	221					64 f)
	Oslo	1993	477	15			8	
	Oslo	1995	477					43 f)
Poland	Katowice	1990	3552			147 f)	89 f)	79 f)
	Lodz	1995	1063		28		21	43 f)
	Warsaw	1995	2219		44		16	32
Russia 1)	Arhangelsk	as of 01/01/98	367.9					
	Kaliningrad	as of 01/01/98	426.3					
	Novgorod	as of 01/01/98	232.4					
	St. Peterburg	as of 01/01/98	4188.6					
Sweden	Göteborg	1995	449	9			6	32
	Stockholm	1995	1545	9			5	29

Particulate Matter, data source 2)									
	1989	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	1.78				1.48	1.48	0.18	1.48	1.48
Estonia									
Finland									0.54
Germany	1.1	0.75							
Iceland									
Latvia									
Lithuania									
Norway									
Poland									
Russia Federation									
Sweden									

SO2, data sources 2)									
	1989	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	1.78		1.48	1.48	1.48	1.48	0.18	1.48	1.48
Estonia									
Finland					0.62	0.62	0.67	0.67	0.67
Germany									
Iceland									
Latvia									
Lithuania									
Norway									
Poland									
Russia Federation									
Sweden									

	NO2, data sources 2)								
Denmark			1.48	1.48	1.48	1.48	0.18	0.18	1.3
Estonia									
Finland					0.54	0.62	0.62	0.67	0.84
Germany									
Iceland									
Latvia									
Lithuania									
Norway									
Poland									
Russia Federation									
Sweden									

- f) exceeds WHO guidelines
- 1) Population in cities significantly exposed to air pollution level. Cities have been included by Hydrological Agency during 1993-1997. Population (in millions) refers to the population in cities with at least one station.  
Particular matter, data sources 2)
- 2) Data source: EEA, Assessment and Management of Urban Air Quality in Europe, 1998, pp 75
- .. Data are not available.
- PM particulate matters
- TSP Total suspended particulate

## Percentage of population with access to safe water

Unit: % of population  
 \* Data sources: WB, WHO data base on the <http://www.un.org/Depts/unsd/social/watsan.htm>  
 Time series: 1990-1997

Definition (WB): Safe water: Does not contain biological or chemical agents at concentration levels directly detrimental to health. "Safe" includes treated surface water and untreated but uncontaminated water such as that from protected boreholes, springs and sanitary wells. Untreated surface waters, such as streams and lakes should be considered safe only if the water quality is regularly monitored and considered acceptable by public health officials. Percentage of population with safe water refers to the proportion of population with access to an adequate amount of safe drinking water in a dwelling or located within a convenient distance from the user's dwelling. The relevant definitions follow.

Definition (WHO): Access to sanitation refers to the share of the population with at least adequate excreta disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Suitable facilities range from simple but protected pit latrines to

WB								
Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..
Finland	..	..	..	98	..	..	..	..
Germany	..	..	..	..	..	..	..	..
Iceland	..	..	..	..	..	100	..	..
Latvia	..	..	..	..	..	..	..	..
Lithuania	..	..	..	..	..	..	..	..
Norway	100	..	..	..	..	100	..	..
Poland	..	..	..	..	..	..	..	..
Russian federation (RF)	..	..	..	..	..	..	..	..
Sweden	..	..	..	..	..	..	..	..

WHO							
	Year	Urbal	Rural				
Countries:							
Denmark 1)	1991-93	100	100				
Estonia							
Finland	1995	100b	85b				
Germany							
Iceland	1995	100	100				
Latvia	1994	92					
Lithuania							
Norway	1995	100	100				
Poland	1989-1990	89a					
Russian Federation (RF)							
Sweden	1989-1990	..	..				

Notes:

\* The World Bank, World Development Indicators, 1999, on CD-ROM.

WHO data base on the <http://www.un.org/Depts/unsd/social/watsan.htm>

.. Data are not available.

1) % of population with safe drinking water available in the home. Data source <http://www.who.int/whosis/hfa/countries/index.html> or with reasonable access - total

### Living conditions (housing)

Unit:

\* Data sources: United Nations Centre for Human Settlements, <http://www.urbanobservatory.org/indicators/database/p>

Time series: 1993

floor area/person, m <sup>2</sup> 1)							
Countries:	City	last update 1998	1991	1992	1993	1994	1995
Denmark	Copenhagen	44.00					
Estonia	Tallin	21.30					
Finland							
Germany	Duisburg	32.10					
	Erfurt	29.10					
	Freiburg	34.70					
	Koeln	34.00					
	Leipzig	33.00					
	Wiesbaden	37.00					
Iceland							
Latvia	Riga	19.40					
Lithuania	Vilnius	16.20					
Norway							
Poland	Warsaw	18.20					
Russia	Novgorod	16.30					
Russian Regions			17.64	17.81	18.4	18.84	19.17
Sweden	Stockholm	40.00					

Countries:	City:	House price to income ratio 2)	Rent to income ratio 3)	Permanent structures 4)	Housing in compliance 5)	Land development multiplier 6)	Infrastructure expenditure 7)	Mortgage to credit ratio 8)	Housing production 9)	Housing investment
Denmark	Copenhagen									
Estonia	Tallin	3.1	13.0%	100.00%	100.00%	3	670\$	44.00%	2.1	4.10%
Finland		3.6	4.1%	100.00%			89\$		0.7	0.50%
Germany	Duisburg									
	Erfurt	7.9	25.6%	100.00%	100.00%	1.7			2.6	0.60%
	Freiburg	5.1	14.0%	90.00%	90.00%	2.9			6.1	
	Koeln			100.00%	100.00%				8.7	
	Leipzig			99.50%	98.50%	1.8			4.7	
	Wiesbaden			100.00%	100.00%				1.5	
Iceland				100.00%	100.00%	1.3			3	
Latvia	Riga									
Lithuania	Vilnius			95.00%	90.00%		63 \$		0.1	1.60%
Norway		5.4	10.0%	100.00%	99.00%	2.3			2.4	3.10%
Poland	Warsaw									
Russia	Novgorod	5.4	7.4%	100.00%	100.00%	1.6	2\$	6.10%	2.5	2.60%
Russian Regions		7.3	6.0%	99.80%	100.00%	2.2	54 \$		3.4	3.50%
Sweden	Stockholm	4.6	22.0%	100.00%	100.00%	4	1,273 \$	19.70%	1.5	2.70%

Notes:

\* Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998

Definitons:

1) Floor area per person: median usable living space per person (m<sup>2</sup>).

2) House price to income ratio: ratio of the median free-market price of a dwelling unit and the median annual household income.

3) House rent to income ratio: ratio of the median annual rent of a dwelling unit and the median annual household income of renters.

4) Permanent structures: percentage of housing units located in structures expected to maintain their stability for 20 years or longer under local conditions with normal maintenance.

5) Housing in compliance: percentage of the total housing stock in compliance with current regulations.

6) Land development multiplier: average ratio between the median land price of a developed plot at the urban fringe in a typical subdivision and the median price of raw, undeveloped land with planning approval in an area currently being developed.

7) Infrastructure expenditure: ratio of the total expenditures (operations, maintenance, and capital) by all levels of government on infrastructure services (roads, sewerage, drainage, water supply, electricity and garbage collection) during the current

8) Mortgage to credit ratio: ratio of total mortgage loans to all outstanding loans in both commercial and government financial institutions.

9) Housing production: total number of housing units (in both the formal and informal sectors) produced in the previous year per 1000 population.

10) Housing investment: total investment in housing (in both formal and informal sectors), as a percentage of gross domestic product.

## Energy consumption versus GDP

Unit: PJ/USD (1990)

Data sources: International Energy Agency, WB

Time series: 1995-1997

Definition: Ratio of Total Final Consumption (TFC) to GDP (billion 1990 US\$ using PPP)

Country:	TFC (PJ)			GDP (billion 90 US\$ using PPPs)			TFC/GDP		
	1995	1996	1997	1995	1996	1997	1995	1996	1997
Denmark	652	684	662	107.15	110.56	114.23	6.08	6.186686	5.7953252
Estonia	114	121		8.80	9.10		12.95	13.296703	
Finland	950	973	1004	80.61	83.48	88.49	11.79	11.655486	11.345915
Germany	10021	10367	10230	1394.62	1412.50	1443.59	7.19	7.339469	7.0864996
Iceland	75	78	79	4.80	5.07	5.29	15.63	15.384615	14.933837
Latvia	134	151		9.40	9.60		14.26	15.729167	
Lithuania	209	212		13.80	14.30		15.14	14.825175	
Norway	802	814	810	93.91	99.05	102.46	8.54	8.2180717	7.9055241
Poland	2725	3040	2878	216.70	229.82	245.57	12.57	13.227743	11.719673
Russia	19846	19593		723.40	687.90		27.43	28.482338	
Sweden	1475	1519	1492	154.99	156.96	159.72	9.52	9.6776249	9.3413474

Notes:

- \* IEA, Energy Balances of OECD countries 1996 - 1997 (1885 - 1996) OECD Edition, 1999 (1998)
- IEA, Energy Statistics & Balances of non - OECD countries 1995 - 1996, OECD Edition, 1998
- The World Bank, World Development Indicators, 1999, on CD-ROM.

## Renewable energy/total energy consumption

Unit: %

\*Data sources: International Energy Agency (IEA)

Time series: 1995-1997

Definition: Ratio of renewable energy consumption to total final consumption (TFC). Renewable energy includes hydro, geothermal and solar, energy and combustion of renewables and waste.

Countries:	Final consumption of renewables (Mtoe) (*Ttoe)			TFC (Mtoe) (*Ttoe)			Renewable energy/total		
	1995	1996	1997	1995	1996	1997	1995	1996	1997
Denmark	0.52	0.54	0.56	15.56	16.28	15.81	3.34%	3.32%	3.54%
Estonia	276	320		2724	2892		10.13%	11.07%	
Finland	3.69	4.02	4.43	22.69	23.25	23.99	16.26%	17.29%	18.47%
Germany	1.31	1.31	1.31	239.36	247.62	244.34	0.55%	0.53%	0.54%
Iceland	0.48	0.46	0.46	1.79	1.85	1.89	26.82%	24.86%	24.34%
Latvia	192	402		3199	3595		6.00%	11.18%	
Lithuania	197	234		5001	5054		3.94%	4.63%	
Norway	1.02	0.94	1	19.16	19.44	19.34	5.32%	4.84%	5.17%
Poland	4.64	5.18	4.97	65.09	72.61	68.73	7.13%	7.13%	7.23%
Russian Federation (RF)	10240	10240		474008	467965		2.16%	2.19%	
Sweden	5.07	5.18	5.36	35.23	36.29	35.65	14.39%	14.27%	15.04%

Notes:

\* IEA, Energy Balances of OECD countries 1996 - 1997 (1885 - 1996) OECD Edition, 1999 (1998)

IEA, Energy Statistics & Balances of non - OECD countries 1995 - 1996, OECD Edition, 1998

### Use of non-renewable materials versus GDP

Unit: tonnes

\*Data sources: EEA, IEA and WB

Time series: 1990-1995

Comments: Resource consumption (Me = Al, Cd, Cu, Pb, Mg, Ni, tin, Tungsten ore, Zn)

Countries:	Al consumption (1000 tonnes)						Cd consumption (tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark	35	28	38	37	40	42			2			
Estonia												
Finland	46	38	42	52	50	50						
Germany	2115	2107	2189	1725	1982	2382	895	652	820	673	750	750
Iceland												
Latvia												
Lithuania												
Norway	158	188	215	258	261	232	10	8	10	10	10	10
Poland	98	62	55	68			233	135	200	36	30	36
Russian Federation												
Sweden	110	101	106	112	151	135	239	181	239	216	293	335

Countries:	Cu consumption (1000 tonnes)						Pb consumption (1000 tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark	1	0					4	5	4	4	4	4
Estonia												
Finland	87	87	80	91	83	87	13	12	7	4	5	4
Germany	1028	1001	1032	921	1000	1058	448	414	412	352	356	368
Iceland							0	0	0	0		
Latvia												
Lithuania												
Norway	8	8	5				6	2	3	3	4	4
Poland	171	154	125	138	151	214	61	49	47	64	53	53
Russian Federation												
Sweden	117	125	123	139	143	143	26	25	26	34	26	26

Countries:	Magnesium consumption (1000 tonnes)						Nickel consumption (1000 tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark							1	1	1	1	0	1
Estonia												
Finland							19	18	24	27	30	36
Germany	26	21	21	15	13	15	93	77	74	75	88	106
Iceland												
Latvia												
Lithuania												
Norway	8	6	8	6	6	6	0	0	0	0	0	0
Poland	0	0	0	1	1	1	3	1	0	0	1	1
Russian Federation												
Sweden	2	1	2	2	2	2	19	16	16	23	25	26

Countries:	Tin Consumption (1000 tonnes)						Consumption of Tungsten ore (1000 tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark	0	0	0	0								
Estonia												
Finland	0											
Germany	22	19	20	18	18	20	1	0	0	0		
Iceland												
Latvia												
Lithuania												
Norway	1	0	0	0	0	0						
Poland	1	1	1	1	1	1						
Russian Federation												
Sweden	0	0	0	0	1	0	0	0	0	0		

Countries:	Consumption of Zinc (1000 tonnes)					
	1990	1991	1992	1993	1994	1995
Denmark	13	13	16	14	12	13
Estonia						
Finland	29	27	31	31	33	28
Germany	530	540	531	515	514	503
Iceland	0	0	0	0	0	0
Latvia						
Lithuania						
Norway	16	20	22	15	19	16
Poland	110	86	84	81	75	75
Russian Federation						
Sweden	40	33	30	29	31	34

Comments: missing volumes means that data were not in the EEA data base	GDP, PPP (current int. \$) billions						Me consumption (tonnes) (Me = Al, Cd, Cu, Pb, Mg, Ni, tin, Tungsten ore, Zn)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
	91	94	100	103	109	116	54	47	61	56	56	60
Denmark	8	8	7	6	6	7						
Estonia	84	81	81	82	88	95	194	182	184	205	201	205
Finland	..	1425	1521	1537	1610	1686	5158	4831	5099	4294	4721	5202
Germany	5	5	5	5	5	6						
Iceland	15	14	10	8	9	9						
Latvia	21	20	17	14	13	14						
Lithuania	71	76	81	86	92	98	207	232	263	292	300	268
Norway	179	167	176	186	200	221	677	488	512	389	312	381
Poland	924	900	832	762	673	662						
Russian Federation (RF)	144	147	151	151	159	170	553	482	542	555	672	701
Sweden												

	Me consumption/GDP					
	1990	1991	1992	1993	1994	1995
Denmark	<b>0.59</b>	<b>0.50</b>	<b>0.61</b>	<b>0.54</b>	<b>0.51</b>	<b>0.52</b>
Estonia						
Finland	<b>2.31</b>	<b>2.25</b>	<b>2.27</b>	<b>2.50</b>	<b>2.28</b>	<b>2.16</b>
Germany		<b>3.39</b>	<b>3.35</b>	<b>2.79</b>	<b>2.93</b>	<b>3.09</b>
Iceland						
Latvia						
Lithuania						
Norway	<b>2.92</b>	<b>3.05</b>	<b>3.25</b>	<b>3.40</b>	<b>3.26</b>	<b>2.73</b>
Poland	<b>3.78</b>	<b>2.92</b>	<b>2.91</b>	<b>2.09</b>	<b>1.56</b>	<b>1.72</b>
Russian Federation (RF)						
Sweden	<b>3.84</b>	<b>3.28</b>	<b>3.59</b>	<b>3.68</b>	<b>4.23</b>	<b>4.12</b>

	Total Final consumption of coal, crude oil, petroleum products, gas (Mtoe)			TFC (PG)			GDP, PPP (current international dollars)			TFC (gas, oil, coal)/GDP		
	1995	1996	1997	1995	1996	1997	1995	1996	1997	1995	1996	1997
Denmark	10.13	10.59	10.24	424.1	443.4	428.7	1.16E+11	1.21E+11	1.25E+11			
Estonia	1.47	1.532		61.55	64.14		6.56E+09	6.89E+09	7.65E+09			
Finland	11.25	10.75	10.82	471	450.1	453	9.46E+10	9.86E+10	1.04E+11			
Germany	190.85	197.87	194.28	7991	8284	8134	1.69E+12	1.73E+12	1.74E+12			
Iceland	0.77	0.86	0.85	32.24	36.01	35.59	5.58E+09	5.93E+09	..			
Latvia	1.741	1.711		72.89	71.64		8.76E+09	9.14E+09	9.71E+09			
Lithuania	2.704	2.818		113.2	118		1.41E+10	1.49E+10	1.57E+10			
Norway	9.11	9.52	9.33	381.4	398.6	390.6	9.84E+10	1.05E+11	1.08E+11			
Poland	43.93	50.07	46.87	1839	2096	1962	2.21E+11	2.37E+11	2.52E+11			
Russian Federation (RF)	238.7	235.47		9994	9858		6.62E+11	6.44E+11	6.44E+11			
Sweden	15.9	16.36	15.87	665.7	685	664.4	1.70E+11	1.74E+11	1.75E+11			

Notes:

- \* The World Bank, World Development Indicators, 1999, on CD-ROM.
- European Environmental Agency data base, Internet version.
- IEA, Energy Balances of OECD countries 1996 - 1997 (1885 - 1996) OECD Edition, 1999 (1998)
- IEA, Energy Statistics & Balances of non - OECD countries 1995 - 1996, OECD Edition, 1998

### Amount of generated municipal waste versus GNP

Unit: 1000 tonnes/GDP current int.\$  
 \*Data sources: OECD, EEA, WB  
 References: OECD Environmental Data compendium, 1997  
 OECD, Environmental Systems in the Russian Federation, An OECD Assessment, 1996  
 Time series: 1990, 1995

Definition: Total amount of municipal waste generated 1)

	Total amount of municipal waste (1000 tonnes)				GDP, PPP (current int. \$) billions		Municipal wastes/GDP	
	1990		1995		1990	1995	1990	1995
Countries:	OECD	EEA	OECD	EEA	WB	WB		EEA
Denmark	..	..	2788	2787	91	116		<b>24.025862</b>
Estonia		..	..	522	8	7		<b>74.571429</b>
Finland	..	..	2100	2100	84	95		<b>22.105263</b>
Germany	..	..	25777	48715	..	1686		<b>28.893832</b>
Iceland	145	..	149	149	5	6		<b>24.833333</b>
Latvia	..	..	..	2600	15	9		<b>288.88889</b>
Lithuania	..	..		1546	21	14		<b>110.42857</b>
Norway	2223	..	2637	2722	71	98		<b>27.77551</b>
Poland	11098	..	11352	11352	179	221		<b>51.366516</b>
Russian Federation (RF)	26,000	..			924	662	<b>28.1385281</b>	
Sweden	3900	..	3900	3998	144	170		<b>23.517647</b>

Notes:

1) OECD definition: Municipal waste is waste collected by or on the order of municipalities. It includes waste originating from households (post-consumption waste), and similar waste from commerce and trade, office buildings, institutions (schools, hospitals, government buildings), and small businesses. It also includes waste from these sources collected door-to-door or delivered to the same facilities used for municipally collected waste, as well as fractions collected separately for recovery operations (through door-to-door collection and/or through voluntary deposite). Similar waste from rural areas, even if disposed of by the generator, is also included. The definition also covers: (i) bulky waste, (e.g. white goods, old furniture, mattresses), and (ii) yard waste, leaves, grass clippings, street sweepings, the contents of litter containers, and market cleansing waste, if managed as waste. The definition excludes waste from municipal sewage networks and treatment, as well as municipal construction and demolition waste. National definitions may differ.

\*European Environmental Agency data base, Internet version.

OECD, Environmental Systems in the Russian Federation, An OECD Assessment, 1996

The World Bank, World Development Indicators, 1999, on CD-ROM.

## NOx emissions

Unit: thousands of tonnes of NO2 per year

\*Data sources: UN/ECE

Time series: 1990 - 1996

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	282	321	276	274	272	250	288	
Estonia 0)	68	59	39	39	42	47	44	
Finland	300	290	283	282	282	259	267 1)	
Germany 2)	2693	2521	2308	2151	2020	1946	1887	
Iceland 3)	20	21	22	23	22	23	..	
Latvia 3)	93	61	53	46	48	42	35	
Lithuania	158	166	98	78	77	65	65	
Norway	222	212	210	218	216	217	223	
Poland	1280	1205	1130	1120	1105	1120	1154	
Russian Federation (RF) 4)	3600	3325	3092	3054	2684	2570	2467	
Russian Region (RR)								100.3
Sweden	338	339	329	324	331	301	302	

Notes:

\* United Nations Economic Commission for Europe, Convention on Long-range Transboundary Air Pollution, [http://projects.dnmi.no/~emep/emis\\_tables/tab1.html](http://projects.dnmi.no/~emep/emis_tables/tab1.html).

0) total nitrogen oxide emissions - NOx . Data source Baltic Environmental Forum (BEF)

1) Preliminary data

2) Emissions from international air traffic, marine bunkers and managed forests are not included

3) Based of IPCC - methodology

4) Figures apply to the European part within EMEP

Addition data sources EEA, Dobris+3 Second Assessment, EU-98, YIR,

## SO2 emissions

Unit: thousands of tonnes of SO2 per year

\* Data sources: UN/ECE

Time series: 1990-1996

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	182	243	190	156	155	150	186	
Estonia 5)	239	233	179	145	141	110	117	
Finland	260	194	141	124	112	96	105	
Germany 1)	5313	3996	3299	2938	2466	2102	1543	
Iceland 2)	24	23	24	24	24	24	..	
Latvia 3)	119	90	79	73	86	59	59	
Lithuania	222	234	139	125	117	94	93	
Norway	53	44	36	35	34	34	34	
Poland	3210	2995	2820	2725	2605	2376	2368	
Russian Federation (RF) 4)	4460	4392	3839	3456	2983	2838	2685	
Russian Region (RR)								795
Sweden	119	96	88	87	82	79	83	

Notes:

\* United Nations Economic Commission for Europe, Convention on Long-range Transboundary Air Pollution, [http://projects.dnmi.no/~emep/emis\\_tables/tab1.html](http://projects.dnmi.no/~emep/emis_tables/tab1.html).

- 1) Emissions from international air traffic, marine bunkers and managed forests are not included
- 2) Based on the IPCC - methodology (2/3 of SO2 is emitted as H2S from geothermal exploitation)
- 3) Based of IPCC - methodology
- 4) Figures apply to the European part within EMEP. Emissions from stationary sources only.
- 5) Data source Baltic Environmental Forum. Data from only from stationary sources

## Load of nutrients to the Baltic Sea

Unit: tonnes/annual

\* Data sources: HELCOM

Time series: 1995

Comments: Data includes riverine inputs and discharge from point sources into the Baltic Sea catchment area.

	Nitrogen	Phosphorous
Countries:	1995	1995
Denmark	68680	2598
Estonia	46468	1291
Finland	66073	3561
Germany	21371	579
Iceland		
Latvia	91064	2184
Lithuania	36824	1405
Norway		
Poland	214747	14208
Russia 1)	84647	7108
Sweden	130872	4718

Notes: Iceland and Norway are not Contracting Parties to the Convention

1) Includes only the area which belongs to the Baltic Sea catchment.

\* Baltic Sea Environmental Proceedings, No. 70 The third Baltic Sea pollution load compilation (PLC-3).

### Percentage of population connected to biological and chemical waste water treatment

Unit: % of population with access to sanitation.

\* Data sources: WHO

Time series: 1990-1997

#### Definition:

(WB) Access to sanitation refers to the share of the population with at least adequate excreta disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Suitable facilities range from simple but protected pit latrines to flush toilets with sewerage. To be effective, all facilities must be correctly constructed and properly maintained.

(WHO) Percentage of population with adequate sanitation refers to the proportion of population with access to a sanitary facility for human excreta disposal in the dwelling or immediate vicinity. A sanitary facility is a unit for the disposal of human excreta which isolates feces from contact with people, animals, crops and water sources. Suitable facilities range from simple but protected pit latrines to flush toilets with sewerage. All facilities, to be effective, must be correctly constructed and properly maintained.

WB								
Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	100	..	..	100	..	..	..	..
Estonia	..	..	..	..	..	..	..	..
Finland	100	..	..	100	..	100	..	..
Germany	..	..	..	..	..	..	..	..
Iceland	100	..	..	95	..	100	..	..
Latvia	..	..	..	..	..	..	..	..
Lithuania	..	..	..	..	..	..	..	..
Norway	100	..	..	..	..	100	..	..
Poland	100	..	..	..	..	..	..	..
Russian Federation (RF)	..	..	..	..	..	..	..	..
Sweden	100	..	..	..	..	..	..	..

WHO								
Countries:	Year	Urban	Rural					
Denmark								
Estonia								
Finland	1995	100	100					
Germany								
Iceland	1995	100	100					
Latvia	1994	90	..					
Lithuania								
Norway	1995	100	100					
Poland	1989-1990	100	100					
Russian Federation (RF)								
Sweden	1989-1990	100	100					

Notes:

- \* World Health Organization on the <http://www.un.org/Depts/unsd/social/watsan.htm>  
The World Bank, World Development Indicators, 1999, on CD-ROM.
- .. Data are not available.

### Emission and discharges of (selected priority) hazardous substances in the Baltic Sea catchment area

Unit: kg/year  
 \* Data sources: HELCOM  
 Time series: 1995

	Hg	Cd	Zn	Cu	Pb	Ni	Cr
Countries:	1995	1995	1995	1995	1995	1995	1995
Denmark 4)	3.24E+02	4.09E+02	1.84E+04	1.60E+03	4.64E+02	7.32E+03	1.21E+03
Estonia 1)	1.00E+03	1.90E+03	1.60E+05	4.27E+05	2.63E+04	..	..
Finland 3)	9.88E+02	2.27E+03	6.39E+05	9.94E+04	3.27E+04	1.00E+04	1.16E+05
Germany 3)	1.06E+02	1.82E+02	1.93E+04	1.14E+04	2.05E+03	3.23E+03	1.21E+03
Iceland 6)							
Latvia 2)	..	1.59E+03	1.20E+05	3.46E+04	8.52E+03	1.23E+03	2.23E+03
Lithuania 2)	..	8.24E+02	9.32E+04	2.97E+04	1.80E+04	1.69E+04	2.22E+03
Norway 6)							
Poland 3)	9.77E+03	9.46E+03	8.00E+05	1.31E+05	1.29E+05	1.24E+05	5.00E+04
Russian Federation 5)	5.48E+02	5.92E+03	8.80E+05	5.86E+05	8.91E+04	5.42E+04	2.02E+05
Sweden	5.59E+02	1.32E+03	1.29E+06	2.83E+05	3.07E+04	5.45E+03	1.72E+03

Notes:

- \* HELCOM, Baltic Sea Environmental Proceedings No. 70 The Third Baltic Sea Pollution Load Compilation (PLC-3)
- 1) Data for heavy metal load in rivers is from 1994
- 2) Data on heavy metal load from rivers and urban environment.
- 3) Data on heavy metal load from rivers, industry and urban environment.
- 4) Data on heavy metal load from urban environment
- 5) Includes only Baltic Sea catchment area and subregions in Russian.
- 6) Iceland and Norway are not included in Baltic Sea catchment area.

## Use of chemicals

Unit: 1990=100

Data sources: EEA, European Environment: Statistical Compendium for the Second Assessment

Time series: 1990-1996

Explanation: The table presents an index on the production of chemical industry. The indexes of industrial production are classified to divisions of NACE for countries and ISIC for non EU countries. The index measure the trend in volume of gross value added generated by industry-. The data presented here refer to NACE 24: Manufacture of chemicals and chemical production.

Countries:	1990	1991	1992	1993	1994	1995	1996
Denmark	100	101	110	109	122	135	139
Estonia	..	100	55	36	41	44	..
Finland	100	95	97	100	112	114	113
Germany	100	98	99	96	103	107	106
Iceland	..	..	..	..	..	..	..
Latvia	100	114	82	57	35	35	34
Lithuania	100	..	..	38	90	143	112
Norway	100	95	95	101	104	107	108
Poland	..	..	..	..	..	..	..
Russian Federation	..	..	..	..	..	..	..
Sweden	100	114	126	133	132	129	139

Notes:

\* Index of chemical industry production

.. Data are not available.

Data are missing for Iceland (1990-1996), Estonia 1991=100, Lithuania (1991, 1992), Poland (1990-1996)

## CO2 emissions

Unit: millions of tonnes of CO2 per year

\* Data sources: UN/ECE, EEA

Time series: 1990-1996

Countries:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	52	63	57	59	63	59	73	
Estonia 6)	39.6	38.5	29.5	22.5	23.3	21.4	21.4	
Finland 1)	59	53	52	53	59	61	66 2)	
Germany	1014	977	927	917	904	904	919	
Iceland	2	2	2	2	2	2	..	
Latvia	25	20	16	15	12	12	11	
Lithuania	42	45	29	25	25	18	19	
Norway	36	34	34	36	38	38	41	
Poland	407 (3)	397 (3)	393 (3)	348	348	338	..	
Russian Federation 4)	1670	1630	1630	1450	1580	1500	1500	
Russian Regions 5)								172.5
Sweden	55	55	56	56	58	58	63	56

### Notes:

\* EEA, Dobris+3 Second Assessment, EU-98 and YIR

1) Emission from fossil fuels and peat

2) Preliminary data

3) No information as to whether natural sources is included

4) Figures apply to the European part within EMEP. No information as to whether natural sources is included. Preliminary data for 1996

5) Data are for CO

6) Data source Baltic Environmental Forum (BEF).

## Consumption of ozone depleting substances

Unit: in ODP tons, (ozone-depleting potential)

\* Data sources: Ozone Secretariat and EEA

Time series: 1990 - 1996

Data sources:	CFCS	CFCS	CFCS	CFCS	CFCS	CFCS	CFCS	Halons						
Countries:	1990	1991	1992	1993	1994	1995	1996	1990	1991	1992	1993	1994	1995	1996
Denmark 2)	2473.0	2143.6	2152.0	1220.4	362.0			803.0	951.0	412.0	146.0	56.0		
Estonia 2)						764.8	-442.2						0.0	0.0
Finland 1)	1859	1199	634	826	508	..	..	516	362	205	233	0	..	..
Germany 3)														
Iceland 1)	133	93	65	62	31	0	0	33	26	18	1	0	0	0
Latvia 1)	..	..	..	..	..	665	307	..	..	..	..	..	30	0
Lithuania 1)	4179	3814	2450	..	596	361	289	..	..	..	..	0	0	1
Norway 1)	722	414	255	222	173	3	3	1332	879	437	220	0	0	0
Poland 1)	4939	2562	2537	2589	1678	1756	549	330	828	100	33	0	0	0
Russia Federation 1)	98752	38949	36607	30130	23413	20990	12345	28800	99950	8996	2460	1258	1085	926
Sweden 1)	1818	1119	1160	686	215	..	..	396	259	270	69	6	..	..

Data sources:	HCFCs	HCFCs	HCFCs	HCFCs	HCFCs	Methyl Bromide	Methyl Bromide	Methyl Bromide	Methyl Bromide	Methyl Chloroform					
Countries:	1992	1993	1994	1995	1996	1991	1994	1995	1996	1991	1992	1993	1994	1995	1996
Denmark 2)	70.4	104.1	106.8			25.2	8.4				101.5	94.3	57.0		
Estonia 2)				0.2	0.1			0	0					0	0
Finland 1)	22	33	45	..	..	5	5	..	..		60.4	46.2	33.6		
Germany 3)															
Iceland 1)	5	6	7	8	8						1	0	1	0	0
Latvia 1)	..	..	..	4	4	15	..	12	15					0	0
Lithuania 1)	1	..	1	19	3	33	22	31	27		NR	NR	2	0	0
Norway 1)	48	43	55	53	62	6	4	5	6		100	61	35	31	0
Poland 1)	..	39	16	..	NR	120	..	..	NR		NR	7	2	NR	0
Russia Federation 1)	267	172	107	84	73	0	1043	1430	96		50	50	39	27	-1
Sweden 1)	109	114	108	..	..	16	13	..	..		145.9	65.0	73.4	NR	NR

Notes:

1) Data source: Ozone Secretariat Report of the Secretariat on Data: Production and Consumption of Ozone Depleting Substances (ODSs): 1986-1996; Accessible in the Internet: <http://www.unep.org/ozone/reports2.htm>

2) Data source: EEA data base

.. not requested to report

NR Data not reported for the year

A missing value means that no data was reported or no data was required to be reported to UNEP.

## Wetland area

Unit: ha

\* Data sources: 1998 Wetlands International - AEME (CD - Review of wetland inventory information Western and Eastern Europe, 1998)

Time series: As of 1998

Countries:	ha
Denmark 1)	2,284,972
Estonia	4,543,700
Finland	3,402,343
Germany	1,267,202
Iceland	..
Latvia	786,265
Lithuania	507,080
Norway	3,301,600
Poland	1,636,927
Russian Region (RR) 2)	63752.61
Sweden	12,800,000

Notes:

\* Global review of wetland resources and priorities for wetland inventory, edited by CM Finlayson & AG Spiers. Reports, Databases, Bibliographies, Netherland

1) Includes sites in Greenland

2) Breakdown of wetlands types: deltas, fresh water marsh, tide wetlands. Data obtained from a variety of different sources. Polygons of Floodplains, estuaries and deltas were drawn onto ONC charts and digitized at WCMC. Data extracted from topographic information on ONC charts (1989).

Problems: Inconsistent definitions of areas included for each country.

.. data are not available.

## Number of threatened species

Unit: Number  
 Data sources: World Resource Institute  
 Time series: 1990-1996

	Mammals Species	Coastal Marine Mammals	Reptile Species	Amphibian Species	Fresh Water Fishes	Higher Plant Species
Countries:	as of 1996	1990`s	1990`s	1990`s	1990s	
Denmark	3 <12>	0	0 <..>	0 <4>	0 <6>	6
Estonia	4 (3)	0	0 (0)	0 (1)	1(2)	2 (67)
Finland	4 <7>	0	0 <1>	0 <1>	1<7>	11
Germany	8 <37>	0	0 <9>	0 <11>	7 <45>	..
Iceland	1 <..>	0	0 <..>	0 <..>	0 <..>	1
Latvia	4 (6)	..	0 (2)	0 (4)	1 (1)	0 (196)
Lithuania	5 (1)	..	0 (2)	0 (0)	1 (2)	0 (119)
Norway	4 <4>	1	0 <1>	0 <2>	1 <..>	20
Poland	10 <10>	0	0 <3>	0 <18>	2 <12>	27
Russian Federation (RF)	31	3	5	0	13	127
Sweden	5 <12>	3	0 <..>	0 <7>	1 <7>	19

Further data sources: World Conservation Monitoring Centre (WCMC), IUCN/World Conservation Union, United Nations Environment Programme and United Nations Food and Agricultural Organization (FAO)

\* WRI, 1998-99 World Resources Database DC-Rom, A guide to the Global Environment , 1999

() Data source Baltic Environmental Forum. Threatened fish species.

<> OECD data source. "Threatened" refers to the sum of the number of species in the "endangered" and "vulnerable" categories.

\*\* Not clear definition in data sources.

### Protected areas versus total

Unit: 1000 ha

\*Data sources: RWI

Time series: 1997

Definition: Protected Areas by IUCN (World Conservation Union) Categories (I-V)

	Protected area	Total area (1994)	<b>Protected area/total</b>
Countries:			
Denmark	1368.1	4243	<b>32.24</b>
Estonia	507.1	4227	<b>12.00</b>
Finland	1823.2	30459	<b>5.99</b>
Germany	9413.9	34927	<b>26.95</b>
Iceland	972.2	10025	<b>9.70</b>
Latvia	774.5	6205	<b>12.48</b>
Lithuania	645.6	6480	<b>9.96</b>
Norway	2075	30683	<b>6.76</b>
Poland	2911.1	30442	<b>9.56</b>
Russia Region (RR) 1)	1455.7	95639.7	<b>1.52</b>
Sweden	3708.9	41162	<b>9.01</b>

Notes:

\* WRI, 1998-99 World Resources Database DC-Rom, A guide to the Global Environment , 1999

1) Statistical Yearbook of Russian Regions, 1998 (Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998)

## Annex 4: Compiled statistics for the Agriculture Sector Indicators

### Livestock units per ha on farm level

Unit: heads of live animals

\*Data sources: FAO, EEA

Time series: 1990 - 1998

Definition: This element indicates the number of animals of the species present in the country at the time of enumeration. It includes animals raised either for draft purposes of for meat and dairy production or kept for breeding. Live animals in captivity for fur or skin such as foxes, minks, etc., are not included in the system although furskin trade is reported. The enumeration to be chosen, when more than one survey is taken, is the closest to the beginning of the calendar year. Livestock data are reported in number of heads (units) except for poultry, rabbits and other rodents which are reported in thousand units.

	<b>Cattle</b>								
Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	2239000	2222000	2190000	2195000	2104904	2090733	2093256	2030000	1974000
Estonia	..	..	708273	614600	463200	419500	370400	343000	311600
Finland	1363000	1315400	1263200	1231600	1230300	1185300	1179300	1150300	1145000
Germany	20287824	19488000	17133800	16207340	15896620	15962237	15889915	15759573	15227152
Iceland	74889	77681	76034	73912	71923	73199	74816	74900	74900
Latvia	..	..	1382942	1144300	678000	550800	509400	476900	434396
Lithuania			2196600	1701000	1384300	1152400	1065100	1054100	1068000
Norway	953100	974185	984078	974700	979500	998400	1005800	1017800	1017800
Poland	10048929	8844000	8221359	7642576	7695680	7305594	7136466	7307382	6955251
Russian Federation			54676704	52226000	48914000	43296000	39696000	35800000	31700000
Russian Regions 1)		2467000	2378000	2168000	1940000	1608000	1438000	1259000	1114000
Sweden	1718443	1706778	1772551	1809000	1827000	1777000	1790200	1781000	1706000
	<b>Pigs</b>								
Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	9282000	9767000	10345000	10870000	10922610	11083910	10842000	11383000	12004000
Estonia	..	..	798603	541100	424300	459800	448800	298400	328800
Finland	1347700	1290100	1356700	1308800	1299600	1295100	1395400	1467000	1467000
Germany	34177504	30818832	26063408	26514000	26075150	24698120	23736564	24282980	24795244
Iceland	37000	38000	40000	40000	41000	42000	43000	43000	43000

Latvia			1246489	866500	482000	500700	459600	429900	421113
Lithuania			2179800	1359800	1196200	1259800	1270000	1127600	1205200
Norway	709700	720842	765698	748200	747800	768400	768000	770000	770000
Poland	19464224	21867584	22085824	18860096	19466500	20417818	17963912	18134776	19167722
Russian Federation			35384304	31519700	28557000	24859000	22631000	19500000	17305000
Russian Regions 1)		1879000	1805000	1521000	1360000	1051000	825000	557000	468000
Sweden	2263943	2201413	2279053	2276547	2328405	2313137	2348800	2351201	2309000
	Sheeps								
Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	159000	188400	182000	157000	145000	145000	170000	142000	142000
Estonia			141882	124200	83300	61500	49800	39200	34000
Finland	60700	56800	61100	61700	79000	80200	114500	102900	102900
Germany	4135247	3239482	2487548	2385960	2368760	2340139	2394741	2324017	2301918
Iceland	548508	510782	487312	488787	499110	458341	463935	477306	477306
Latvia			183670	165000	114000	86000	55500	40700	29386
Lithuania			58100	51700	45000	40000	32300	28200	26100
Norway	2211000	2211000	2363000	2316900	2462000	2524200	2557600	2447800	2447800
Poland	4158465	3233669	1869566	1267880	869604	713172	551570	490831	452913
Russian Federation			52194600	48182500	40616000	31818000	25800000	20910000	17125000
Russian Region 1)*		520900	541200	548800	521200	462800	440300	408700	353700
Sweden	405595	418783	447461	470687	484000	461800	469000	469000	407000
	Goats								
Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..	..
Finland	3700	4000	5200	5000	4600	4500	5500	6500	6500
Germany	76938	90000	83000	88000	89000	89000	94000	103000	110000
Iceland	345	350	318	330	337	350	350	350	350
Latvia			5314	6400	6300	7400	8900	8400	10492

Lithuania			6300	8800	10400	12400	14300	16900	18700
Norway	88800	89698	89422	57600	61600	61900	62100	63100	63100
Poland	..	..	..	..	..	..	..	..	..
Russian Federation			3060000	3186000	3097000	2682000	2200000	1890000	1632000
Sweden	..	..	..	..	..	..	..	..	..

References: 1) Statistical Yearbook of Russian Regions, 1998 (Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998)

Notes: \* Total sheep and goats

## Grazing area/total arable land

Unit: ha

\*Data sources: FAO, WB

Time series: 1990-1994

Definitions:

Arable Land (ha): land under temporary crops (double-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). The abandoned land resulting from shifting cultivation is not included in this category. Data for "Arable land" are not meant to indicate the amount of land that is potentially cultivable. (FAO definition).

Permanent Pasture (ha): land used permanently (five years or more) for herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land). The dividing line between this category and the category "Forests and woodland"; is rather indefinite, especially in the case of shrubs, savannah, etc., which may have been reported under either of these two categories. In the year 1995 and onward there will be no data for this element.

Permanent Pasture (FAO, OECD)								
Country:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	2.17E+05	2.12E+05	2.08E+05	1.97E+05	3.17E+05	..	..	..
Estonia	..	..	3.11E+05	3.12E+05	3.10E+05	..	..	..
Finland	1.22E+05	1.23E+05	1.20E+05	1.06E+05	1.10E+05	..	..	..
Germany	5.62E+06	5.33E+06	5.24E+06	5.25E+06	5.27E+06	..	..	..
Iceland	2.27E+03	2.27E+03	2.27E+03	2.27E+03	2.27E+03	..	..	..
Latvia	..	..	8.20E+05	8.03E+05	8.00E+05	..	..	..
Lithuania	..	..	4.60E+05	4.60E+05	4.96E+05	..	..	..
Norway	1.12E+05	1.18E+05	1.20E+05	1.23E+05	1.29E+05	..	..	..
Poland	4.06E+06	4.04E+06	4.04E+06	4.05E+06	4.06E+06	..	..	..
Russian Federation			8.79E+07	8.53E+07	8.73E+07	..	..	..
Russian Regions 1)	2.67E+06					2.60E+06	2.57E+06	2.54E+06
Sweden	5.68E+05	5.68E+05	5.76E+05	5.76E+05	5.76E+05	..	..	..

Total arable land (ref. WB)								
Country:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	2.56E+06	2.55E+06	2.54E+06	2.53E+06	2.37E+06			
Estonia	..	..	1.13E+06	1.13E+06	1.13E+06			
Finland	2.54E+06	2.58E+06	2.58E+06	2.58E+06	2.59E+06			
Germany	1.20E+07	1.16E+07	1.15E+07	1.17E+07	1.18E+07			
Iceland	7.00E+03	7.00E+03	6.00E+03	6.00E+03	6.00E+03			
Latvia	..	..	1.69E+06	1.69E+06	1.71E+06			
Lithuania	..	..	2.99E+06	2.99E+06	2.96E+06			
Norway	8.64E+05	8.92E+05	8.83E+05	8.90E+05	9.01E+05			
Poland	1.44E+07	1.44E+07	1.43E+07	1.43E+07	1.43E+07			
Russian Federation	..	..	1.32E+08	1.31E+08	1.30E+08			
Russian Regions 1)	4.82E+06					4.72E+06	4.65E+06	4.56E+06
Sweden	2.85E+06	2.79E+06	2.77E+06	2.78E+06	2.78E+06			

\*Sources and references:

1)For Russian Region data are available not on total arable lands but total agriculture land.

FAO: Data on the Internet: <http://apps.fao.org/lim500/nph-wrap.pl?LandUse&Domain=LUI&servlet=1>, No data about grazing area from 1995 – 1997.

OECD: CEEC/NIS database <http://www.oecd.org/agr/publications/index2.htm>

WB: World Development Indicators, on CD ROM, 1999

RR: Statistical Yearbook of Russian Regions, 1998 (Государственный комитет Российской Федерации по статистике, Регионы России, Статистический сборник, Москва, 1998)

	Grazing area/total arable land, %								
	1990	1991	1992	1993	1994	1995	1996	1997	
Denmark	8.47E+00	8.32E+00	8.19E+00	7.78E+00	1.34E+01				
Estonia	..	..	2.75E+01	2.77E+01	2.75E+01				
Finland	4.80E+00	4.77E+00	4.65E+00	4.10E+00	4.24E+00				
Germany	4.69E+01	4.61E+01	4.57E+01	4.50E+01	4.47E+01				
Iceland	3.25E+01	3.25E+01	3.79E+01	3.79E+01	3.79E+01				
Latvia	..	..	4.86E+01	4.76E+01	4.68E+01				
Lithuania	..	..	1.54E+01	1.54E+01	1.68E+01				
Norway	1.30E+01	1.32E+01	1.36E+01	1.38E+01	1.43E+01				
Poland	2.82E+01	2.81E+01	2.82E+01	2.83E+01	2.84E+01				
Russian Federation			6.66E+01	6.51E+01	6.70E+01				
Russian Regions 1)	5.54E+01					5.50E+01	5.53E+01	5.58E+01	
Sweden	2.00E+01	2.04E+01	2.08E+01	2.07E+01	2.07E+01				

### Riverine inputs and discharge from point sources into the Baltic Sea

Unit: tonnes/annual

\* Data sources: HELCOM

Time series: 1995

Comments: Data includes riverine inputs and discharge from point sources into the Baltic Sea catchment area.

	Nitrogen	Phosphorous
Countries:	1995	1995
Denmark	68680	2598
Estonia	46468	1291
Finland	66073	3561
Germany	21371	579
Iceland		
Latvia	91064	2184
Lithuania	36824	1405
Norway		
Poland	214747	14208
Russia 1)	84647	7108
Sweden	130872	4718

Notes: Iceland and Norway are not Contracting Parties to the Convention

1) Includes only the area which belongs to the Baltic Sea catchment area.

\* Baltic Sea Environmental Proceedings, No. 70 The third Baltic Sea pollution load compilation (PLC-3).

Annex 5: Compiled statistics for the Energy Sector Indicators

(to be added)

## Annex 6: Compiled statistics for the Fisheries Sector Indicators

### Recruitment

Unit: Millions

\* Data sources: International Council for the Exploration of the Sea.

Time series: 1974 – 1999

Comments: The map on sub-divisions are located on <http://www.grida.no/prog/norbal/basics/graphics/subdiv.gif>

	Sub-divisions 25-29	Sub-division 22-32	Sub-division 22 to 24	Sub-division 25-32
	Herring spawning stock biomass	Sprat spawning stock biomass	Cod spawning stock biomass	Cod spawning stock biomass
Year	Age 1	Age 1	Age 1	Age 2
1974	20 478,40	507 800,60	169,8	472,05
1975	16 656,60	17 962,40	87,78	281,11
1976	34 064,10	162 506,00	81,45	282,52
1977	20 085,60	38 552,60	139,28	464,13
1978	22 903,60	13 749,90	104,51	785,38
1979	18 595,30	33 383,20	49,96	568,91
1980	25 140,70	19 338,00	124,04	403,7
1981	35 766,80	50 845,60	90,19	654,57
1982	36 710,60	32 825,00	92,47	651,59
1983	30 113,00	140 196,00	109,59	433,6
1984	34 507,90	54 214,60	35,63	280,03
1985	24 980,90	30 877,00	28,15	228,46
1986	12 236,30	12 831,00	75,62	244,31
1987	25 853,50	43 077,00	43,35	330,28
1988	10 140,20	9 698,86	13,73	203,46
1989	15 871,80	48 665,40	20,4	117,53
1990	22 037,50	57 501,70	18,4	115,7
1991	17 888,00	59 186,80	32,2	78,04
1992	22 189,00	85 866,40	73,77	129,3
1993	19 991,40	94 516,60	41,37	170,95
1994	17 260,60	56 438,70	71,08	119,56
1995	24 721,20	212 107,00	109,89	119,39
1996	23 292,20	136 089,00	14,68	112,12
1997	15 355,70	35 200,30	95,75	96,85
1998	28 300,70	140 574,00	157,85	137,48
1999	21 123,00	47 870,00	55,34	112,58

\* Extract of the Report of the Advisory Committee of Fishery Management, Stock in the Baltic, overview, ICES, 1999

## Fishing Mortality

Unit:

\*Data sources: International Council for the Exploration of the Sea.

Time series: 1974 – 1999

Comments:

	Sub-divisions 25-29	Sub-division 22-32	Sub-division 22 to 24	Sub-division 25-32
	Herring spawning stock biomass	Sprat spawning stock biomass	Cod spawning stock biomass	Cod spawning stock biomass
Year	Age 3-6	Age 3-5	Age 3-6	Age 4-7
1974	0,19	0,374	1,326	0,829
1975	0,193	0,396	1,096	0,694
1976	0,205	0,375	1,419	0,924
1977	0,195	0,343	1,405	0,841
1978	0,176	0,333	0,973	0,533
1979	0,216	0,25	0,892	0,492
1980	0,202	0,289	0,966	0,726
1981	0,231	0,166	1,34	0,794
1982	0,194	0,29	0,84	0,717
1983	0,262	0,141	0,917	0,696
1984	0,286	0,221	0,806	0,893
1985	0,296	0,22	1,215	0,759
1986	0,263	0,253	1,712	1,149
1987	0,279	0,285	1,034	0,957
1988	0,268	0,256	0,958	0,85
1989	0,34	0,24	1,144	1,128
1990	0,3	0,132	1,29	1,197
1991	0,295	0,154	1,964	1,345
1992	0,252	0,222	1,33	0,935
1993	0,292	0,125	1,397	0,313
1994	0,334	0,233	0,606	0,521
1995	0,345	0,315	1,038	0,684
1996	0,344	0,307	1,23	0,944
1997	0,389	0,47	1,614	0,995
1998	0,392	0,679	1,148	0,818
1999	..	..	..	..

\*Extract of the Report of the Advisory Committee of Fishery Management, Stock in the Baltic, overview, ICES, 1999

### Spawning Stock Biomass (SSB)

Unit: 1000 tonnes

\*Data sources: International Council for the Exploration of the Sea.

Time series: 1974 – 1999

Comments:

	Sub-divisions 25-29	Sub-division 22-32	Sub-division 22 to 24	Sub-division 25-32
Year	Herring spawning stock biomass	Sprat spawning stock biomass	Cod spawning stock biomass	Cod spawning stock biomass
1974	1724,53	736,75	44,95	258,48
1975	1646,22	617,65	36,28	333,6
1976	1456,16	441,8	42,84	352,63
1977	1539,64	682,02	32,63	325,24
1978	1485,62	584,62	28,6	376,34
1979	1412,72	342,57	38,67	575,02
1980	1288,53	201,19	56,1	694,51
1981	1214,67	150,72	49,8	667,87
1982	1285,33	169,62	46,93	668,61
1983	1266,2	197,76	48,93	641,44
1984	1131,88	368,98	46,05	649,86
1985	1077,11	432,3	47,3	533,26
1986	1038,81	409,67	28,49	390,2
1987	984,63	328,69	22,16	312,34
1988	1064,96	347,01	29,33	293,71
1989	932,27	370	25,71	238,28
1990	867,04	504,25	14,46	216,59
1991	816,69	699,78	10,45	152,72
1992	858,72	937,47	8,57	97,7
1993	848,66	1222,12	15,85	120,23
1994	856,94	1260,73	28,96	200,94
1995	734,47	1174,6	30,07	246,74
1996	665,4	1332,64	36,53	167,5
1997	612,69	1244,35	37,25	141,47
1998	602,62	730,81	18,38	125,27
1999	605,82	704,56	26,21	139

\*Extract of the Report of the Advisory Committee of Fishery Management, Stock in the Baltic, overview, ICES, 1999

**Landings from the Baltic Sea Statistical sub-divisions 22-32**

Unit: tonnes

Data sources: "Reports on the utilisation of the Baltic Total Allowable Catches (TACs) established by the International Baltic Sea Fishery Commission" (Proceedings of the IBSFC Sessions)

Time series: 1992 – 1998

Comments: The members of the International Baltic Sea Fishery Commission are EC, Estonia, Latvia, Lithuania, Poland and Russia. Only these 6 members report to the IBSFC. The EC allocations are split up internally to Denmark, Finland, Germany and Sweden and these countries report these catches to the EC/Brussels and not to IBSFC.

**COD**

	<b>EC</b>	<b>Estonia</b>	<b>Latvia</b>	<b>Lithuania</b>	<b>Poland</b>	<b>Russia</b>	<b>Total</b>
<b>1992</b>	52,727*	1,369	1,250	1,694	13,315	1,793	<b>72,148</b>
<b>1993</b>	26,662*	130	1,319	605	8,900	483	<b>38,099</b>
<b>1994</b>	43,226*	376	2,212	1,885	14,426	1,114	<b>63,239</b>
<b>1995</b>	76,604	1,232	6,471	3,629	25,001	1,612	<b>114,549</b>
<b>1996</b>	106,893	255	8,701	5,334	34,869	3,304	<b>159,356</b>
<b>1997</b>	86,113	1,173	6,187	4,694	31,676	2,803	<b>132,646</b>
<b>1998</b>	58,105	1,170	7,778	4,104	25,775	4,599	<b>101,531</b>

**SPRAT**

	<b>EC</b>	<b>Estonia</b>	<b>Latvia</b>	<b>Lithuania</b>	<b>Poland</b>	<b>Russia</b>	<b>Total</b>
<b>1992</b>	79,625*	4,139	17,388	3,279	30,127	9,112	<b>143,670</b>
<b>1993</b>	116,097*	5,763	12,553	2,797	33,700	10,745	<b>181,655</b>
<b>1994</b>	188,389*	9,079	20,132	2,789	44,556	15,404	<b>280,349</b>
<b>1995</b>	200,643	13,051	24,383	4,798	46,182	14,934	<b>303,991</b>
<b>1996</b>	230,461	22,493	33,713	10,274	77,333	18,287	<b>392,561</b>
<b>1997</b>	250,612	39,693	49,314	6,018	105,720	22,194	<b>473,551</b>
<b>1998</b>	239,806	40,623	44,858	5,513	59,215	21,078	<b>411,093</b>

**HERRING**

	<b>EC</b>	<b>Estonia</b>	<b>Latvia</b>	<b>Lithuania</b>	<b>Poland</b>	<b>Russia</b>	<b>Total</b>
<b>1992</b>	195,373*	29,556	25,965	4,781	52,864	29,251	<b>337,790</b>
<b>1993</b>	212,053*	33,047	21,949	3,911	50,833	23,545	<b>345,338</b>
<b>1994</b>	229,931*	34,493	22,676	4,988	49,111	16,619	<b>357,818</b>
<b>1995</b>	189,448	43,481	24,972	3,707	45,754	16,970	<b>324,332</b>
<b>1996</b>	204,011	45,057	27,523	4,261	32,168	14,780	<b>327,800</b>
<b>1997</b>	219,812	52,435	29,330	3,330	28,896	11,818	<b>345,621</b>
<b>1998</b>	280,303	42,721	24,417	2,368	21,960	10,544	<b>382,313</b>

\*these figures include the landings of Finland and Sweden at the time not yet members of EC

### Number of fishing vessels per country operating in the Baltic Sea

Unit: number

Data sources: Data collected from countries.

Time series: 1997 – 1998

Comments:

	Germany	Denmark	Sweden	Finland	Estonia	Latvia	Lithuania	Poland	Russia
1997	-	1,527	2,443	3,987	-	222	65	1,296	*)
1998	2,160	1,376	-	-	233	-	65	1,315	*)

\*) data available, but not yet received

### Average engine power per country

Unit: total Kilowatt of the fleet, divided by the number of vessels (KW)

Data sources: Data collected from countries.

Time series: 1997 – 1998

Comments:

	Germany	Denmark	Sweden	Finland	Estonia	Latvia	Lithuania	Poland	Russia
1997	-	86	104	53.7	-	176	194	95.1	*)
1998	44	89	-	-	165	-	190	-	*)

\*) data available, but not yet received

### Fish consumption per capita per country

Unit: kg

Data sources: Data collected from countries.

Time series: 1997 – 1998

Comments:

	Germany	Denmark	Sweden	Finland	Estonia	Latvia	Lithuania	Poland	Russia
1997	14.6	18 <sup>*)</sup>	18.7	14.5	-	12.5	12	6.7	**)
1998	-	18 <sup>*)</sup>	-	-	15	-	12	-	**)

\*) minimum estimate

\*\*\*) not available

### Number of fulltime fishermen engaged in the Baltic Sea Region, per country

Unit: number

Data sources: Data collected from countries.

Time series: 1997 – 1998

Comments:

	Germany	Denmark	Sweden	Finland	Estonia	Latvia	Lithuania	Poland	Russia
1997	1,900	550	1,330	1,071	-	*)	821	4,000	**)
1998	1,900	550	-	-	3,600	*)	857	4,000	**)

\*) no reliable data available. Fishermen registration started January 1999.

\*\*\*) data available, but not yet received.

## Annex 7: Compiled statistics for the Forest Sector Indicators

### 1.1 Area of forest and other wooded land (and changes in area) (classified, if appropriate, according to forest and vegetation type, ownership structure, age structure, origin of forest)

#### a. Area of forest and other wooded land

Unit: 1000 ha

\*Data sources:

References:

Time series: 1987-1998 (not frequent)

Country:	1987	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark		538 (1)					417 (2,3)			
Estonia		..					2011(2,3)			
Finland		1991 - 1996 = 22 605 (1)								
Germany ?	10740 (1)						10 740 (2)			
Iceland ?							136 (3)			130 (1)
Latvia ?							2 882 (2)		2995 (1)	
Lithuania ?								2050 (1)		
Norway		1994 - 1996 = 12 000 (1)								
Poland		1992 - 1996 = 8942								
Russian Federation					886538 (1)					
Russian Regions 4)					42459.5					42745.4
Arkhangelsk Oblast					20809					20643.5
Murmansk Oblast					5205					5188.3
Republic of Karelia					9657.9					9694.4
Leningrad Oblast					3578.6					3612.7
Novgorod Oblast					1897.8					2253.7
Pskov Oblast					1077.7					1118.1
Kaliningrad Oblast					233.5					234.7
St. Peterburg										
Sweden		1992 - 1996 = 30 259								

\*Sources and references:

1) Pan-European compilation:

- 2) FAO db on the Internet
- 3) UN/ECE db on the Internet
- 4) Data contains territories of forests what are included in data bases of Federal Forest Service of Russia (ГΥЖИФ) or supervised by FFSR. Data received directly from the country, FFSR. Data for St. Peterburg are not reported.

Notes.

.. Data are not available in the P-E compilation

? Data are different in different data sources

### **b. species groups (coniferous, broadleaved, mixed)**

Unit: 1000 ha

Data sources: Pan-European compilation, Table 5

References:

Time series:

Country:	Reference	Predominately		Predominatery		mixed
	period	coniferous		broad-leaved		
Denmark	1,990	168		111		166
Estonia						
Finland	1991 - 1996	17,217		1655		2540
Germany	1,987	5,852		2,515		1775
Iceland	1,998	10		18		2
Latvia	1,997	1,127		534		1223
Lithuania	1,996	914		678		386
Norway	1994 - 1996	4,930		1962		1818
Poland	1992 - 1996	5,955		1,377		1610
Russian Federation	1993	567140		249398		0
Sweden	1992 - 1996	21,452		1599		4213

Note: Data on Russian Regions are not reported by Federal Forest Service of Russia

**c. ownership structure (public and private)**

Unit: 1000 ha /%

Data sources: Pan-European compilation, Table 4

References:

Time series:

Country:	References period:	Public ownership		Private ownership	
		Area (1000 ha)	% of total FOWL	Area (1000 ha)	% of total FOWL
Denmark	1990	153	28	386	72
Estonia					
Finland	1991 -1996	6720	30	15885	70
Germany	1987	5762	54	4978	46
Iceland	1985	39	30	91	70
Latvia	1997	1678	56	1317	44
Lithuania	1997	1683	82	367	18
Norway	1989	2936	25	9064	76
Poland	1992 - 1996	7449	83	1493	17
Russian Federation	1993	886538	100	0	0
Russian Regions 1)	1993	42460	100	0	0
	1998	42745	100	0	0
Sweden	1992 - 1996	6147	20	24112	80

1) Data reported by Federal Forest Service of Russia.

**d. age structure (age classes)**

Unit: 1000 ha

Data sources: Pan-European compilation, Table 8

References:

Time series:

Country:	Reference period:	Total	Uneven-aged	Total	less 20 years	Even-aged		
						21 to 60 years	61 to 100 years	more than 100 years
Denmark	1990	445	30	415	108	159	58	24
Estonia								
Finland	1992 - 1996	20,513	77	18789	3630	6767	5227	3166
Germany	1987	10,142	1,500	8,642	1,239	3381	2600	1422
Iceland	1998	14	1	13	8	5	0	0
Latvia	1997	2,413	142	2271	321	1015	786	149
Lithuania	1996	1,686	36	1650	221	907	491	32
Norway	1994 - 1996	6,609	1621	4850	1389	1361	1012	1088
Poland	1992 - 1996	8,300	0	8,300	1,552	3934	2349	465
Russian Federation	1993	516391		516391	63739	119960	101797	230895
Sweden	1992 - 1996	21,236	3,794	17442	5468	5808	3691	2475

Note: Data on Russian Regions are not reported by Federal Forest Service of Russia

**1.2. Changes in:  
a. total volume of the growing stock**

Unit: 1000 ha

Data sources: Pan-European compilation, Table 6, Table 7

References:

Time series:

							Average annual change in growing stock		
							Forest	Forest available for wood supply	
							1000 mo.b./year		m3 o.b./ha
Country:	Reference period:	Growing stock on all trees (1000 m3 overbark)			Reference year 1	Reference year 2			
Denmark	1990	60,200			1980	1990	1,200	1200	2.3
Estonia									
Finland	1991 - 1996	1,963,000			1980 - 89	1991 - 96	19,700	16200	1.3
Germany	1987	..			1961	1987		25,400	
Iceland		..							
Latvia	1997	542,000			1988	1997	7,000	5502	1.2
Lithuania	1996	373,937			1987	1996	3,582	4309	2.2
Norway	1994 - 1996	817,288			1980 - 86	1994 - 96	11547	10515	1.8
Poland	1992 - 1996	1,973,532			1987 - 91	1992 - 96	22,152	16,149	2
Russian Federation	1993	80676360			1988	1993	-193620	-825680	-0.1
Russian Regions 1)	1993	4267.6	1998	4510.69					
Arkhangelsk Oblast	1993	2150.63	1998	2143.65					
Murmansk Oblast	1993	200.55	1998	198.08					
Republic of Karelia	1993	848.61	1998	919.23					
Leningrad Oblast	1993	583.18	1998	641.27					
Novgorod Oblast	1993	289.32	1998	387.14					
Pskov Oblast	1993	155.12	1998	181.46					

Kaliningrad Oblast	1993	40.19	1998	39.86					
St. Peterburg	1993		1998						
Sweden	1992 - 1996	2,993,640			1985 - 89	1992 - 96	30,429	25255	1.1

1) Data are reported by Federal Forest Service of Russia.

*b. mean volume of the growing stock on forest land (classified, if appropriate, according to different vegetation zones or site classes)*

Unit: 1000 ha

Data sources: Pan-European compilation, Table 87

References:

Time series:

			Average annual change in growing stock		
			Forest	Forest available for wood supply	
			1000 mo.b./year	m3 o.b./ha	
Country:	Reference year 1	Reference year 2			
Denmark	1980	1990	1,200	1200	2.3
Estonia					
Finland	1980 - 89	1991 - 96	19,700	16200	1.3
Germany	1961	1987		25,400	
Iceland					
Latvia	1988	1997	7,000	5502	1.2
Lithuania	1987	1996	3,582	4309	2.2
Norway	1980 - 86	1994 - 96	11547	10515	1.8
Poland	1987 - 91	1992 - 96	22,152	16,149	2
Russian Federation	1988	1993	-193620	-825680	-0.1
Russian Regions 1)	1993	1998			41.2
Sweden	1985 - 89	1992 - 96	30,429	25255	1.1

	Mean volume of growing stock (m <sup>3</sup> o..b/1 ha)	
	1993	1998
<i>Russian Regions:</i>	<i>902.6</i>	<i>943.8</i>
Arkhangelsk Oblast	108.3	106.2
Murmansk Oblast	40.3	39.4
Republic of Karelia	94.5	99.2
Leningrad Oblast	171	183.2
Novgorod Oblast	160	176
Pskov Oblast	150.6	166.5
Kaliningrad Oblast	177.9	173.3
St. Peterburg		

1) Data are reported by Federal Forest Service of Russia.

**c. age structure or appropriate diameter distribution classes**

Unit: 1000 ha

Data sources: Pan-European compilation, Table 8

References:

Time series:

Country:	Reference period:	Total	Uneven-aged	Total	less 20 years	Even-aged		
						21 to 60 years	61 to 100 years	more than 100 years
Denmark	1990	445	30	415	108	159	58	24
Estonia								
Finland	1992 - 1996	20,513	77	18789	3630	6767	5227	3166
Germany	1987	10,142	1,500	8,642	1,239	3381	2600	1422
Iceland	1998	14	1	13	8	5	0	0
Latvia	1997	2,413	142	2271	321	1015	786	149
Lithuania	1996	1,686	36	1650	221	907	491	32
Norway	1994 - 1996	6,609	1621	4850	1389	1361	1012	1088
Poland	1992 - 1996	8,300	0	8,300	1,552	3934	2349	465
Russian Federation	1993	516391		516391	63739	119960	101797	230895
Russian Regions	1993			40287				
	1998			41488.3				
Sweden	1992 - 1996	21,236	3,794	17442	5468	5808	3691	2475

Note: Data of Russian Regions are received from Federal Forest Service of Russia. The total even-aged includes Russian classification (молодняки (1st and 2nd class), средне-возрасти, приспевающие спелые и перст.)

	Year	Species group	Total	Молодняки	Молодняки	Средне-	приспеваюци	спелые и
	1993		1000 ha	1st class	2class	возрасти	е	перст
<b>Russian Regions</b>	<b>1993</b>		<b>40,287</b>	<b>5504.6</b>	<b>5201</b>	<b>8320.8</b>	<b>2962.9</b>	<b>18279.5</b>
Arkhangelsk Oblast		coniferous	16748.9	1575.4	1547.8	1815.2	533.5	11277
		broadleaved	3102.6	688.9	624.8	1120.7	188.8	479.4
Murmansk Oblast		coniferous	3670.8	537.8	589.1	714.3	166.8	1662.8
		broadleaved	1303.1	54.7	149.9	562.4	115	421.1
Republic of Karelia		coniferous	8029.7	1708	1506.9	1529.4	578.3	2707.1
		broadleaved	953.6	100.3	146.8	379.2	104.7	202.6
Leningrad Oblast		coniferous	2336.8	398.9	230.7	605.6	530.3	571.3
		"твердо-лиственные"	0.3			0.3		
		broadleaved	1071.9	63.3	76.6	409.3	188.2	334.5
Novgorod Oblast		coniferous	901.9	197.5	99.4	268	159.4	177.6
		"твердо-лиственные"	1.8			1.1	0.5	0.2
		broadleaved	913	42	54.2	392.6	172.1	253.9
Pskov Oblast		coniferous	622.8	101.2	114.3	231.2	115.7	60.4
		"твердо-лиственные"	1.3		0.3	0.7	0.2	0.1
		broadleaved	403.6	15.5	20.7	177.2	83.1	107.1
Kaliningrad Oblast		coniferous	81.8	16.1	27.6	26.1	7.2	4.8
		"твердо-лиственные"	43.9	1.9	7.5	26.3	5.7	2.5
		broadleaved	99.2	3.1	4.4	61.2	13.4	17.1

Broadleaved are identify than мягко-листвен								
	Year	Species group	Total	Молодняки	Молодняки	Средне-	приспевающи	спелые и
	1998		1000 ha	1st class	2class	возрасти	е	перст
<b>Russian Regions</b>	<b>1998</b>		<b>41488.3</b>	<b>5164.9</b>	<b>5749.5</b>	<b>8722.5</b>	<b>3245.6</b>	<b>18605.3</b>
Arkhangelsk Oblast		coniferous	16647.3	1523.4	1589	2035.2	596.1	10903.6
		broadleaved	3537.3	759.1	763.6	1299.1	196.3	519.2
Murmansk Oblast		coniferous	3726.8	624.8	582.9	711	166.1	1642
		broadleaved	1299.7	55	149.6	559.9	114.6	420.6
Republic of Karelia		coniferous	8247.8	1507.5	1841.3	1602.9	607.4	2688.7
		broadleaved	1019.6	81.7	94.1	438.1	114.2	291.5
Leningrad Oblast		coniferous	2305.3	288.3	310.4	557.1	514.5	635
		"мягко-лиственные"	0.3			0.2		0.1
		broadleaved	1189.8	34.7	59.3	359.8	220.6	515.4
Novgorod Oblast		coniferous	939.3	126.7	154.7	276.9	180.2	200.8
		"мягко-лиственные"	2.1		0.1	1.1	0.5	0.4
		broadleaved	1254.8	38.2	55	394.4	265.4	501.8
Pskov Oblast		coniferous	607.5	68.6	94.4	231.4	136.4	76.2
		"мягко-лиственные"	1.1		0.1	0.7	0.2	0.1
		broadleaved	481.6	30.3	14.7	141.8	107.8	187
Kaliningrad Oblast		coniferous	84.2	20.3	28.1	25.3	6.3	4.2
		"мягко-лиственные"	44.1	2.3	7.6	26.4	5.6	2.2
		broadleaved	99.7	4	4.6	61.2	13.4	16.5

### 1.3. Total carbon storage and, changes in the storage in forest stands

*Unit:*

*Data sources:* Pan-European compilation, Table 9

*References:*

*Time series:*

Country:	Reference period	Mass of woody biomass (1000 m. t. over-dry)		
		Total	Above-stump	Below-stump
Denmark	1990	40,165	30,165	10000
Estonia				
Finland	1991-96	1,560,411	1,099,951	460460
Germany	1987	1,840,000	1,440,000	400,000
Iceland				
Latvia	1997	355,193	291,285	63908
Lithuania	1996	236,610	202,230	34380
Norway	1994-96	558,053	477174	80879
Poland	1992-96	1,012,930	878,717	134,214
Russian Federation	1993	55250000	44200000	11050000
Russian Regions 1)				
Sweden	1992-96	2,091,927	1,776,676	315251

1) *Total carbon storage and changes in the storage in forest stands for Russian Regions (MtC).*

	Reference year*	B	M	F	dB	dM	dF	dB1
<b>Russian Regions</b>		<b>1880.7</b>	<b>623.6</b>	<b>1,257</b>	<b>24.97</b>	<b>7.95</b>	<b>17.07</b>	<b>22.48</b>
Arkhangelsk Oblast		994.6	365.3	629.3	11.86	4.28	7.58	10.75
Murmansk Oblast		108.7	45.5	63.2	0.94	0.39	0.55	0.85
Republic of Karelia		355.2	101.3	253.9	4.94	1.41	3.58	4.35
Leningrad Oblast		231.9	61.5	170.4	3.64	0.95	2.69	3.27
Novgorod Oblast		113.3	29.7	83.6	2.13	0.54	1.59	1.97
Pskov Oblast		59.9	14.8	45.1	1.15	0.28	0.87	1.03
Kaliningrad Oblast		17.1	5.5	11.6	0.31	0.1	0.21	0.26
St. Peterburg								

Notes: *B = Total carbon storage in biomass. It includes M= carbon storage in mortmass and F = carbon storage in phytomass.*

*F = Total carbon storage in phytomass*

*dB = Total increase of biomass. It includes dM = total increase of phytomass and dM =total increase of mortmass.*

*dB1 = Mean annual increase of carbon in biomass.*

Reference year\* *Data of Russian Regions are received from Federal Forest Service of Russia.*

*Reference: Углерод в экосистемах лесов и болот России, По редакции В.А. Алексеева и Р.А. Бердси. Красноярск, 1994.*

*Отчет о НИР "Изучение биосферной роли бореальных лесов России в условиях глобальных изменений климатов", Рук. Темы А, М, Алферов., ВНИИЦлесресурс, 1998*

*2.2. (Changes) in serious defoliation of forests using the UN/ECE and EU defoliation classification (classes 2, 3, and 4) over the past 5 years.*

Unit: %

Data sources: Pan-European compilation, Table 10

References:

Time series: 1992-1996

Country:	1992	1993	1994	1995	1996
	Procent of total sampled trees in damage classes 2, 3 and 4				
Denmark	26	33	37	36.6	28
Estonia	29	20	16	13.6	14.2
Finland	15	15	13	13.3	13.2
Germany	26	24	24	22	20
Iceland					
Latvia	37	35	30	20	21.2
Lithuania	18	27	25	24.9	12.6
Norway	26	25	27.5	28.8	29.4
Poland	49	50	55	53	40
Russian Federation 1)					
Russian Regions 1)					
Sweden				14.2	17.4

1) The data on changes of defoliation are not available in Federal Forest Service of Russia. Those data are reported by regions (in this case Leningrad obl. and Kaliningrad obl.) to the international programme ICP-Forest.

The data on changes of defoliation for Russian Federation are not available in Pan-European compilation.

**2.3. Serious damage caused by biotic or abiotic agents:**

**a. severe damage caused by insects and diseases with a measurement of seriousness of the damage as a function of (mortality or) loss of growth**

Unit: 1000 ha

Data sources: Pan-European compilation, Table 12

References:

Time series:

Country:	Reference period	Area with damage by known causes (1000 ha)						Area with damage by unidentified causes
		Total	Insects and diseases	Wildlife and grazing	Fire	Local pollution sources	Other	
Denmark	1990-95	4	0	2.5	0.2	0	1	
Estonia								
Finland	1986-96	3,300	1,600	300	0	0	1400	1700
Germany								
Iceland	1992-97	10	3	5	0	0	2	
Latvia	1996	2	1	0.2	0.3	0	0.2	0
Lithuania	1992-96	221	101	40.5	3.1	0	76	0
Norway	1994-96	1,162	112	218	0	0	832	0
Poland	1992-96		309	389	13		196	
Russian Federation	1996	4092	3567	5	494	0	26	1
Russian Regions <sup>1)</sup>								
Sweden	1992-1996			551				

1) Areas with damage by known causes (ha). Areas includes only in the FFSR data base.

	1991	1,992	1,993	1994	1995	1996	1997	1998
<b>Total of Russian Regions</b>	<b>940</b>	<b>12107</b>	<b>4335</b>	<b>2086</b>	<b>3425</b>	<b>3668</b>	<b>14249</b>	<b>5230</b>
Areas with damage by insectes and diseases (ha). Areas includes only in the FFSR data base.								
	1991	1992	1993	1994	1995	1996	1997	1998
Arkhangelsk Oblast				2				
Murmansk Oblast	427		73			145		
Republic of Karelia								
Leningrad Oblast		20	559	18	183	373	496	388
Novgorod Oblast			189	40	180			
Pskov Oblast		25	20	51	55	42	1	24
Kaliningrad Oblast	13	32		137	480	455	278	84
St. Peterburg								
Reference:	Data from FFSR reports (форма 12.ЖХ)							
Areas with damage by beast of prey (ha). Areas includes only in the FFSR data base.								
Arkhangelsk Oblast								
Murmansk Oblast								
Republic of Karelia								
Leningrad Oblast			130	68	20		12	54
Novgorod Oblast								5
Pskov Oblast	105	720	255	43	1			
Kaliningrad Oblast		23				15		48
St. Peterburg								

Reference: Data from FFSR reports (форма 12.ЖХ)

	Areas with damage by fire (ha). Areas includes only in the FFSR data base.							
Arkhangelsk Oblast	173	372	117	131	266	176	2538	3122
Murmansk Oblast	173	1650	116	610	366	300	6414	578
Republic of Karelia		20	124	110	204	167	1708	48
Leningrad Oblast	33	6517	2566	754	1477	1162	1760	791
Novgorod Oblast		429		25	23	262	865	40
Pskov Oblast		1573	73	44	161	560	171	48
Kaliningrad Oblast	16	726	113	53	9	11	6	
St. Peterburg								

Reference: Data from FFSR reports (форма 12..JIX)

**b. annual area of burnt forest and other wooded land**

Unit: ha

Data sources: Pan-European compilation, Table 11c and 11d

References:

Time series: 1987-1996

Country:	Forest area burned											
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark				83	0	67	9	1	1	9		
Estonia				112	28	782	128	127	71	146		
Finland	153	289	516	433	227	1081	580	1575	643	919		
Germany	319	282	281	481	920	4908	1493	1114	592	1381		
Iceland	0	0	0	0	0	0	0	0	0	0		
Latvia						3002	288	195	200	501		
Lithuania					43	718	279	244	242	323		
Norway	35	209	170	87	530	1370	224	232	113	5135		
Poland	1454	3,063	5,006	5,029	2,110	33334	3677	2503	1742	5314		
Russian Federation					682049	691478	748619	536785	360137	1853511		
<i>Russian Regions 1)</i>					667	34357	1367	5408	4696	6045	41112	2804
Arkhangelsk Oblast					307	2108	174	666	483	873	24083	1258
Murmansk Oblast					100	2487	238	813	247	376	8380	836
Republic of Karelia					88	3695	89	1785	836	660	4076	528
Leningrad Oblast					148	19527	377	1465	2422	2497	2758	62
Novgorod Oblast					4	2335	106	104	204	232	1415	52
Pskov Oblast					20	3310	261	425	485	1376	389	68
Kaliningrad Oblast						895	122	150	19	31	11	
St. Peterburg												
Sweden						3251		2400	280	587		

Country:	Other wooded land area burned											
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	0	0	0	0	0	0	0	0	0	0		
Estonia				43	4	104	295	115	45	27		
Finland	0	0	0	0	0	0	0	0	0	0		
Germany	0	0	0	0	0	0	0	0	0	0		
Iceland	0	0	0	0	0	0	0	0	0	0		
Latvia							38	117	121	155		
Lithuania						74	14	48	63	35		
Norway	0	0	0	0	0	0	0	0	0	0		
Poland	0	0	0	0	0	0	0	0	0	0		
Russian Federation					444173	451297	451816	186296	102723	458416		
<i>Russian Regions 1)</i>					<i>21</i>	<i>6775</i>	<i>204</i>	<i>928</i>	<i>635</i>	<i>1361</i>	<i>4861</i>	<i>213.1</i>
Arkhangelsk Oblast					2	232	1	5	2	10	1898	147
Murmansk Oblast					2	37	96	110	16	31	1298	30.1
Republic of Karelia					9	472	7	131	34	189	879	27
Leningrad Oblast					8	4041	79	207	188	333	141	3
Novgorod Oblast						105	4	1	31	50	470	2
Pskov Oblast						1674	15	18	362	748	175	4
Kaliningrad Oblast						214	2	456	2			
St. Peterburg												
Sweden						2287		700	120	661		

- 1) Data of Russian Regions are received from Federal Forest Service of Russia. Reference: FFSR reports (форма 5.ЖХ)  
Data on other wooded land area for Russian Regions includes "not forest area".

**c. annual area affected by storm damage and volume harvested from these areas**

Unit: 1000 ha

Data sources: Pan-European compilation, Table 11c and 11d

References:

Time series:

Comments: Data are not available, except Russian Regions

Country:	1994	1995	1996	1997	1998
Denmark					
Estonia					
Finland					
Germany					
Iceland					
Latvia					
Lithuania					
Norway					
Poland					
Russian Federation					
<i>Russian Regions 2)</i>	<i>4</i>	<i>4</i>	<i>11.8</i>	<i>28.223</i>	<i>6.326</i>
Arkhangelsk Oblast 1)			1.8	14.9	4.3
Murmansk Oblast	0.6	0.4	0.2	6.9	0.8
Republic of Karelia	1	0.2	0.6	1.7	0.002
Leningrad Oblast	1	1.6	3.6	2.8	0.017
Novgorod Oblast	0	0.2	4.5	1.5	0.2
Pskov Oblast	0	0.3	1.1	0.4	1
Kaliningrad Oblast	1	1.3		0.023	0.007
St. Peterburg					
Sweden					

1) Data are not available for 1994-1995.

2) Data on annual area affected by all kinds of natural disasters (fires, storms). Data from FFSR reports (форма 15.ЛХ)

**d. proportion of regeneration area seriously damaged by game and other animals or by grazing**

*Unit: ha*

*Data sources: Pan-European compilation, Table 12*

*Time series:*

		Area with damage by known causes (1000 ha)
Country:	Reference period	Wildlife and grazing
Denmark	1990-95	2.5
Estonia		
Finland	1986-96	300
Germany		
Iceland	1992-97	5
Latvia	1996	0.2
Lithuania	1992-96	40.5
Norway	1994-96	218
Poland	1992-96	389
Russia		
Russian Regions		
Sweden	1992-1996	551

	Areas with damage by beast of prey (ha). Areas includes only in the FFSR data base.							
	1991	1992	1993	1994	1995	1996	1997	1998
<i>Total of Russian Regions</i>	<i>105</i>	<i>743</i>	<i>385</i>	<i>111</i>	<i>21</i>	<i>15</i>	<i>12</i>	<i>107</i>
Arkhangelsk Oblast								
Murmansk Oblast								
Republic of Karelia								
Leningrad Oblast			130	68	20		12	54
Novgorod Oblast								5
Pskov Oblast	105	720	255	43	1			
Kaliningrad Oblast		23				15		48
St. Peterburg								

Reference: Data from FFSR reports (форма 12.ЛХ)

### 3.1. Balance between growth and removals of wood over the past 10 years

Unit: 1000 m3 overbark

Data sources: Pan-European compilation, Table 13, 14

Time series:

Country:	Reference period	Net annual increment of available for wood supply			Reference period	Felling
		Total				
Denmark	1990	3200			1996	2444
Estonia						
Finland	1991-96	72470			1991-96	54300
Germany	1995	75,649			1,996	46270
Iceland						
Latvia	1996	11050			1996	8150
Lithuania	1992-96	8504			1992-96	5750
Norway	1994-96	22041			1994-96	11632
Poland	1992-96	39,436			1992-96	32212
Russian Federation	1993	508150			1995	150200
Sweden	1992-96	85431			1992-96	67766

	Balance between growth and removals of wood over the past 10 years (%removal of total average growth), %%								
	1988	1989	1990	1991	1992	1993	1995	1996	1997
<i>Russian Regions</i>	89,3	91,4	85,6	67,9	59,6	48,3	40,7	35,6	36,4
Arkhangelsk Oblast	123.6	120.3	115	83.7	75.6	57.4	42.3	37.3	36.1
Murmansk Oblast	64.6	65.2	64	42.7	36	27.3	11.4	10.5	7.8
Republic of Karelia	84.2	95.1	88.8	82.6	68.6	61.5	49.2	43.1	46.1
Leningrad Oblast	62.8	65.2	60	54.9	47.3	41	45.2	39.1	41.9
Novgorod Oblast	56.6	56.9	50.9	34	31.1	25.5	28.2	24.2	24.3
Pskov Oblast	49.9	56.4	44.7	44.2	39.4	30	26.8	21.4	26.3
Kaliningrad Oblast	56.4	55.3	48.8	49.1	41.3	30	44.4	43.1	41.5
St. Peterburg									

Data source: Data were received from FFSR. Comments: As data are available only for five years, the period 1988 - 1997 has been calculated by FFSR.

### 3.2. Percentage of forest area managed according to a management plan or management guidelines.

Unit: % of total

Data sources: Pan-European compilation, Table 15

Time series:

Country:	Reference period	Percentage of total
Denmark	1990	100
Estonia		
Finland	1991-96	85
Germany	1987	100
Iceland	1985	47
Latvia	1997	100
Lithuania	1997	98
Norway	1989	82.1
Poland	1992-96	100
Russian Federation 1)	1993	100
Russian Regions 1)	1993	100
	1998	100
Sweden	1992-96	100

1) Data were reported by FFSR. All territory of Russian Federation forest fond are managed according to a management plan or management guidelines.

**4.1. (Changes) in the area of:  
a. natural and ancient seminatural forest types (“Naturalness”)**

Unit: % of total

Data sources: Pan-European compilation, Table 16

Time series:

Country:	Reference period	Forest			Other wooded land	
		Undisturbed by man	Semi-natural	Plantations	Undisturbed by man	Semi-natural
Denmark	1990	0.1	23	76.5	50	50
Estonia						
Finland	1991-96	5.8	94	0	46.1	53.9
Germany	1987		100			
Iceland	1998	0	60	40	0	100
Latvia	1997	0.1	95	5	0	100
Lithuania	1996	0.6	85	14.4	0	100
Norway	1994-96	2.9	93.7	3.4	10	90
Poland	1992-96	2	97	0.4		
Russian Federation	1993	97.9	0	2.1		
Sweden	1992-96	19	79	2.1	95.3	4.7

	Changes of natural wooded area on land supervised by FFSR.	
	1993	1998
<i>Russian Regions</i>	<i>39125</i>	<i>39,213</i>
Arkhangelsk Oblast	19642.8	19401.1
Murmansk Oblast	5152.7	5128.9
Republic of Karelia	8534.1	8508.3
Leningrad Oblast	3088.4	3092.5
Novgorod Oblast	1653.7	1994.9
Pskov Oblast	916.4	952.4
Kaliningrad Oblast	136.6	135.1
St. Peterburg		

Reference: FFSR reports.

**b. strictly protected forest reserves** (Strictly protected forest area includes national parks, national reserves of forest area and forest with historical and scientifically importance.)

Unit: % of total

Data sources: Pan-European compilation, Table 17

Time series:

Country:	Reference period	Forest not available for wood supply	
		Conservation protection reasons	% of forest area
Denmark	1990	5	1.1
Estonia			
Finland	1991-96	1208	6
Germany	1993-96	83	1
Iceland	1998	2	7
Latvia	1997	471	16
Lithuania	1996	249	13
Norway	1997	114	1.3
Poland	1996	398	4
Russian Federation	1993		
<i>Russian Regions</i>			
Sweden	1992	5180	19

	Changes of strictly protected forest on land supervised by FFSR, 1000 ha.		% of forest and other wooded land.	
	1993	1998	1993	1998
<i>Russian Regions</i>	1055	1,635	2.49E+00	3.83E+00
Arkhangelsk Oblast	378.2	895.3		
Murmansk Oblast	2	2		
Republic of Karelia	365.7	381.4		
Leningrad Oblast	0.8	0.8		
Novgorod Oblast	295.3	292.2		
Pskov Oblast		50.8		
Kaliningrad Oblast	13.2	12.9		
St. Peterburg				

**c. forests protected by special management regime**

Unit: % of total

Data sources: Pan-European compilation, Table 17

Time series:

Country:	Reference period	Forest	
		IUCN categories I and II	IUCN categories III to VI
Denmark	1990	1.1	19.3
Estonia			
Finland	1991-96	4.5	2
Germany	1993-96	1	71
Iceland	1998	7	0
Latvia	1997	3.7	13
Lithuania	1996	5.6	9
Norway	1997	1.3	0.2
Poland	1996	2	14
Russian Federation	1993	2.9	0.1
Russian Regions 1)			
Sweden	1992		

1) Data on protection status of forest by IUCN categories are not reported.

**4.2. (Changes) in the number and percentage of threatened species in relation to total number of forest species (using reference lists e.g., IUCN, Council of Europe or the EU Habitat Directive)**

Unit: as percent of total, %

Data sources: Pan-European compilation, Table 18

Time series:

Country:	Endangered forest occurring species (as percent of total, %)								
	Trees	Other plants	Ferns	Mosses	Lichens	Mammals	Birds	Other vertebrates	Butterflies
Denmark	11	19.5	33.3		43.6	44	3.2	66.7	
Estonia									
Finland	24	16.4	10			18.4	12.4	0	
Germany	0	1	4	1		50	18.9	50	62.7
Iceland	0				25		0		0
Latvia	4	19.6	42	15.2	4.9	30	24.5	40	1.3
Lithuania	6	14.3	28	4.2	12.3	25	21.5	14.3	2.9
Norway	5	8.6		15	5	32	15.7	40	20
Poland	1								
Russian Federation									
Russian Regions 1)									
Sweden	20	26.7	30	46	24.8	37.2	35.5	12.9	33

Country:	Reported number (total and endangered) of trees species (coniferous and broad-leaved)	
	Total number of species	
	Total	Of which: endangered
Denmark	98	7
Estonia		
Finland	33	8
Germany	66	0
Iceland	4	0
Latvia	47	2
Lithuania	84	7
Norway	43	2
Poland	81	1
Russian Federation	283	
Russian Regions 1)		
Sweden	32	6

1) Data are not available in FFSR, but data has been published into Red book by the regions, for instance, Arhangelsk obl., Republic of Karelia.

#### 4.5. In relation to total area regenerated, proportions of annual area of natural regeneration

Unit: ha, % of total

Data sources: Pan-European compilation, Table 19

Time series:

		Average annual regeneration of forest		
		Total, 1000 ha	Of which: Natural regeneration	
Country:	Reference period		Area, 1000 ha	Percent of total , %
Denmark	1990	6.4	0.2	3.5
Estonia				
Finland	1987-96	167	49	29.3
Germany	1987-96	70	28	40
Iceland	1987-97	0	0	
Latvia	1988-97	8	2	24.6
Lithuania	1987-97	10.7	3	27.1
Norway	1987-96	74	20	42.6
Poland	1988-96	59	1	1.2
Russian Federation	1983 - 93	2026	801	39.5
Russian Region				
Sweden	1987-96	204	38	18.6

	% of natural regeneration of total regenerated area. Data source: FFSR	
	1988 - 1992	1993 - 1997
<i>Russian Regions</i>		
Arkhangelsk Oblast	3.6	2.8
Murmansk Oblast	5.1	3.7
Republic of Karelia	3.5	2.8
Leningrad Oblast	1.7	1.3
Novgorod Oblast	4.1	1.9
Pskov Oblast	6.9	9.1
Kaliningrad Oblast	Data for Kaliningrad obl. is not reported.	
St. Peterburg		

### 5.1. Proportion of forest area managed primarily for soil protection

Unit: ha, % of total

Data sources: Pan-European compilation, Table 20

Time series:

Country:	Reference period	Forest primarily managed for soil protection	
		Area, 1000 ha	Percentage of total
Denmark	1990	34	7.6
Estonia			
Finland	1991-96	0	0
Germany	1993	480	5
Iceland	1998	16	53
Latvia	1997	40	1
Lithuania	1996	44	2
Norway	1994-96	1	0
Poland	1992-96	256	3
Russian Federation	1993	92368	11.3
Russian Regions 1)			
Sweden	1992-96	33	0

1) Data are not reported.

## 5.2. Proportion of forest area managed primarily for water protection

Unit:

Data sources:

Time series:

Comment: Data are not available, except Russian Regions.

	Proportion of forest area managed primarily for water protection, FFRS forest and other wooded land. %%	
	1993	1,998
<i>Russian Regions</i>		
Arkhangelsk Oblast	9.2	9.3
Murmansk Oblast	13.1	13.1
Republic of Karelia	16.5	9
Leningrad Oblast	18.8	18.9
Novgorod Oblast	7.5	8.1
Pskov Oblast	12.8	12.9
Kaliningrad Oblast	6.4	6.4
St. Peterburg		

Data source: FFRS reports.

Note: Data includes protected areas of river banks, lakes banks and other watershed.

### 6.1. Share of the forest sector from the gross national product

Unit:

Data sources:

Time series:

Comment: Data are not available, except Russian Regions.

	Share of the forest sector from the gross national product.
	1995
Russian Regions	
Arkhangelsk Oblast	
Murmansk Oblast	
Republic of Karelia	
Leningrad Oblast	14.3
Novgorod Oblast	
Pskov Oblast	
Kaliningrad Oblast	
St. Peterburg	

Note. Only Leningrad obl. contain the data on share of the forest sector from the gross national product. Data for other regions are not available.

**6.2. Provision of recreation: area of forest with access per inhabitant, % of total forest area.**

Unit: **1000 ha, %**

Data sources: Pan-European compilation, Table 21, 22

Country:	Reference period	Area with public access (1000 ha)	Percent of total (%)	Reference period	Area per inhabitant (ha/caput)
Denmark	1990 - 97	148	96,7	1990	0,09
Estonia					
Finland	1997	6414	95,4	1991-96	4,25
Germany	1987	5 762	100,0	1987	0,13
Iceland	1998	39	100,0	1998	0,11
Latvia	1997	1674	99,8	1997	1,15
Lithuania	1997	1654	98,3	1996	0,53
Norway	1994-96	2936	100,0	1994-96	2,00
Poland	1996	6 782	91,1	1992-96	0,23
Russian Federation				1993	5,52
Russian Regions					
Sweden	1992-96	6070	98,7	1992-96	3,09

**6.3. Changes in the rate of employment in forestry, notably in rural areas (persons employed in forestry, logging, forest industry)**

Unit:

Data sources:

Time series:

Comments: Data are not available. Except ussian Regions.

	Changes in the rate of employment in forestry, number.							
	1988	1,992	1,993	1994	1995	1996	1997	1998
<i>Russain Regions</i>	<i>10660</i>	<i>10178</i>	<i>13666</i>	<i>14790</i>	<i>15734</i>	<i>16051</i>	<i>16381</i>	<i>16302</i>
Arkhangelsk Oblast	3531	2762	2827	2960	2757	2584	2653	2715
Murmansk Oblast	830	610	590	557	554	525	490	460
Republic of Karelia	380	373	954	1468	1967	2089	2117	2110
Leningrad Oblast	2898	2286	3942	4015	4042	4114	4133	4193
Novgorod Oblast	113	1279	2249	2410	2799	2925	3043	2899
Pskov Oblast	1761	1805	1917	2085	2197	2148	2120	2152
Kaliningrad Oblast	1147	1063	1187	1295	1418	1666	1825	1773
St. Peterburg								

Data source: Data are reported by FFSR.

## Annex 8: Compiled statistics for the Industry Sector Indicators

### Industrial GDP

\* Data sources: World Bank,

Definition:

GDP for industrial sector: Industry corresponds to ISIC divisions 10-45 and includes manufacturing (ISIC divisions 15-37). It comprises value added in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The industrial origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 2. Data are in current U.S. dollars

Industry, value added (current US\$) billions								
Country:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	31	30	34	32	35	42	..	..
Estonia	4	2	1	1	1	1	1	1
Finland	42	34	29	24	29	39	38	..
Germany	..	..	..	..	..	..	..	..
Iceland	1	1	2	1	1	2	..	..
Latvia	6	5	2	2	2	2	1	1
Lithuania	4	7	4	2	2	2	2	3
Norway	36	36	38	34	36	44	51	..
Poland	30	36	35	34	37	46	..	..
Russian Federation (RF)	261	249	187	159	134	140	158	155
Russian Regions (RR) 1)		81.16	68.94	60.44	43.45	39.74	34.41	35.5
Sweden	68	66	66	50	54	..	..	..

\*Sources and references:

Data sources for RR :

1) Industrial energy consumption data contains serious problems. Industrial GDP in comparable prices (calculated in 1990 prices).

## Industrial energy consumption/industrial GDP

Unit: Mtoe/billions US\$

\* Data sources: Energy consumption - International Energy Agency.

Time series: 1995-1997

Total Final Consumption industry sector: is specified in the following sub-sectors (energy used for transport by industry not included here): iron and steel industry (ISIC group 271 and class 2731), chemical industry (ISIC Division 24), non-ferrous metals basic industries (ISIC group 272 and class 2732), non-metals basic industries (ISIC Division 26), transport equipment (ISIC Division 34 and 35), machinery (ISIC Division 28, 29, 30, 31 and 32), mining (excluding fuels) and quarrying (ISIC Division 13 and 14), food and tobacco (ISIC Division 15 and 16), paper, pulp and print (ISIC Division 21 and 22), wood and wood production (ISIC Division 45), textile and leather (ISIC Division 17, 18 and 19), non-specified (ISIC Division 25, 33, 36 and 37).

	Energy consumption (Industrial energy consumption), Mtoe.			Energy consumption/industrial GDP		
	1995	1996	1997	1995	1996	1997
Denmark	2.88	3.05	3.05	<b>0.06857</b>	..	..
Estonia	1.004	1.068		<b>1.004</b>	<b>1.068</b>	..
Finland	10.09	10.15	10.79	<b>0.25872</b>	<b>0.26711</b>	..
Germany	72.9	70.82	72.3	..	..	..
Iceland	0.44	0.48	0.52	<b>0.22</b>	..	..
Latvia	0.555	0.815		<b>0.2775</b>	<b>0.815</b>	..
Lithuania	1.558	1.643		<b>0.779</b>	<b>0.8215</b>	..
Norway	7.32	7.15	7.23	<b>0.16636</b>	<b>0.1402</b>	..
Poland	23.73	28.31	25.34	<b>0.51587</b>	..	..
Russia Federation (RF)	172.306	..		<b>1.23076</b>	..	..
Russian Regions (RR) 1)						
Sweden	13.29	13.6	13.61	..	..	..

\*Sources and references:

The World Bank, World Development Indicators, on CD-ROM,

IEA, Energy Balances of OECD countries 1996 - 1997 (1885 - 1996) OECD Edition, 1999 (1998)

IEA, Energy Statistics & Balances of non - OECD countries 1995 - 1996, OECD Edition, 1998

Data sources for RR :

Regions of Russia.. Statistical collection in 2 volumes. (Goscomstat of Russia. – Moscow., 1998., 797 p.)

Russian Statistical Yearbook: Statistical Collection. (Goskomstat of Russia – Moscow, Logos publ., 1996., 1202 p.)

Russian Finances. Statistical collection. (Goskomstat of Russia – Moscow., 1998., 246 p.)

1) No statistical data on this subject.

### Industrial use of renewable energy/total energy consumption

Unit: %

\* Data sources: International Energy Agency

Time series: 1995-1997

Definition:

Total Final Consumption (TFC) of industry sector.

Renewable energy consumption includes electricity production in hydro power plants (Hydro); geothermal and solar energy (indigenous production of geothermal, solar, wind, tide and wave energy; combustible renewable and waste (biomass and animal products,

Country	TFC of hydro, geotherm., solar and etc., combust. renew. and waste, (Mtoe) by industry sector.			TFC, (Mtoe)			Renewable energy/total final consumption, %		
	1995	1996	1997	1995	1996	1997	1995	1996	1997
Denmark	0.11	0.09	0.12	15.56	16.28	15.81	<b>0.71</b>	<b>0.55</b>	<b>0.76</b>
Estonia	0.069	0.096		2.724	2.892		<b>2.53</b>	<b>3.32</b>	
Finland	2.88	2.94	3.3	22.69	23.25	23.99	<b>12.69</b>	<b>12.65</b>	<b>13.76</b>
Germany	0.12	0.12	0.12	239.36	247.62	244.34	<b>0.05</b>	<b>0.05</b>	<b>0.05</b>
Iceland	0.04	0.04	0.04	1.79	1.85	1.89	<b>2.23</b>	<b>2.16</b>	<b>2.12</b>
Latvia	0.002	0.049		3.199	3.595		<b>0.06</b>	<b>1.36</b>	
Lithuania	0.011	0.01		5.001	5.054		<b>0.22</b>	<b>0.20</b>	
Norway	0.42	0.39	0.45	19.16	19.44	19.34	<b>2.19</b>	<b>2.01</b>	<b>2.33</b>
Poland	4.64	5.18	4.97	65.09	72.61	68.73	<b>7.13</b>	<b>7.13</b>	<b>7.23</b>
Russia Federation (RF)	1.51	..		474.008	467.965		<b>0.32</b>	<b>..</b>	
Russian Regions (RR) 1)									
Sweden	4.13	4.19	4.38	35.23	36.29	35.65	<b>11.72</b>	<b>11.55</b>	<b>12.29</b>

\*Sources and references:

IEA, Energy Balances of OECD countries 1996 - 1997 (1885 - 1996) OECD Edition, 1999 (1998)

IEA, Energy Statistics & Balances of non - OECD countries 1995 - 1996, OECD Edition, 1998

1) No statistical data on this subject.

## CO2 emissions/industrial GDP

Unit: Gigagrams/US\$ billions

\* Data sources: Emissions – UNFCCC, GDP – World Bank

Time series: 1990-1997

Definition:

CO2 emissions (gigagrams)								
Country:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	1006	1178	1300	1311	1318	1311	1388	1539
Estonia	613	614	313	193	215	222	206	354
Finland	1200		1020	860	840	800	840	900
Germany	27668	24814	25389	25262	26954	26388	24932	25000
Iceland	391	357	361	408	409	425		
Latvia	563	584	286	113	154	127	185	179
Lithuania								
Norway	6718	6245	6150	6656	7216	7654	7684	7750
Poland	9212		10603		9422		8938	10664
Russian Federation (RF)	46300	43603	35702	29802	24000	23100		
Russian Regions (RR) 1)					112,20	110,2	109,6	100,48
Sweden	3786	3700	4100	4000	4200	4458	3711	3716

CO2 emissions /industrial GDP								
	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	32,45	39,27	38,24	40,97	37,66	31,21		
Estonia	153,25	307,00	313,00	193,00	215,00	222,00	206,00	354,00
Finland	28,57		35,17	35,83	28,97	20,51	22,11	
Germany								
Iceland	391,00	357,00	180,50	408,00	409,00	212,50		
Latvia	93,83	116,80	143,00	56,50	77,00	63,50	185,00	179,00
Lithuania								
Norway	186,61	173,47	161,84	195,76	200,44	173,95	150,67	
Poland	307,07		302,94		254,65			
Russian Federation (RF)	177,39	175,11	190,92	187,43	179,10	165,00		
Russian Regions (RR) 1)					2,58	2,77	3,19	2,83
Sweden	55,68	56,06	62,12	80,00	77,78			

\*Sources and references: The World Bank, World Development Indicators, on CD-ROM.  
Framework Convention on Climate Change (UNFCCC).  
Data sources for RR :  
Regions of Russia.. Statistical collection in 2 volumes. (Goscomstat of Russia. – Moscow., 1998., 797 p.)  
Russian Statistical Yearbook: Statistical Collection. (Goskomstat of Russia – Moscow, Logos publ., 1996., 1202 p.)  
Russian Finances. Statistical collection. (Goskomstat of Russia – Moscow., 1998., 246 p.)  
1) Data on industrial CO emissions. Data source not provided.

## NOx emissions/industrial GDP

Unit: Gigagrams/US\$ billions

\* Data sources: Emissions – UNFCCC, GDP – World Bank

Time series: 1990-1997

Definition:

NOx emission (gigagrams)								
Country:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	1				1	1	1	1
Estonia								
Finland			1	1	2			
Germany	31	24	19	15	14	15	13	13
Iceland								
Latvia								
Lithuania								
Norway	10	8	7	8	9	9	9	8
Poland							21	19
Russian Federation (RF)								
Russian Regions (RR) 1)					100,5	93,6	92,7	86,18
Sweden	23	24	24	26	27	28	27	13

NOx emissions/industrial GDP								
Country:	1990	1991	1992	1993	1994	1995	1996	1997
Denmark	0,032				0,029	0,024		
Estonia								
Finland			0,034	0,042	0,069			
Germany								
Iceland								
Latvia								
Lithuania								
Norway	0,278	0,222	0,184	0,235	0,250	0,205	0,176	
Poland								
Russian Federation (RF)								
Russain Regions (RR) 1)					2,313	2,355	2,694	2,428
Sweden	0,338	0,364	0,364	0,520	0,500			

\*Sources and references: The World Bank, World Development Indicators, on CD-ROM.  
Framework Convention on Climate Change (UNFCCC).  
Data sources for RR :  
Regions of Russia.. Statistical collection in 2 volumes. (Goskomstat of Russia. – Moscow., 1998., 797 p.)  
Russian Statistical Yearbook: Statistical Collection. (Goskomstat of Russia – Moscow, Logos publ., 1996., 1202 p.)  
Russian Finances. Statistical collection. (Goskomstat of Russia – Moscow., 1998., 246 p.)  
1) Data source not provided.

## SOx emissions/industrial GDP

Unit: Gigagrams/US\$ billions

\* Data sources: Emissions – UNFCCC, GDP – World Bank

Time series: 1990-1997

Definition:

SOx emissions (gigagrams)								
	1990	1991	1992	1993	1994	1995	1996	1997
Denmark					4	3	3	
Estonia								
Finland								
Germany	57	58	56	51	50	54	51	51
Iceland	3	2	2	3	3	3		
Latvia	1	2	1					
Lithuania								
Norway	27	23	18	19	20	20	19	17
Poland								
Russian Federation (RF)								
Russian Regions (RR) 1)					735,90	767,80	713,90	718,85
Sweden	45						36	20

\*Sources and references: The World Bank, World Development Indicators, on CD-ROM.

Framework Convention on Climate Change (UNFCCC).

Data sources for RR : Regions of Russia.. Statistical collection in 2 volumes. (Goscomstat of Russia. – Moscow., 1998., 797 p.)

Russian Statistical Yearbook: Statistical Collection. (Goskomstat of Russia – Moscow, Logos publ., 1996., 1202 p.)

Russian Finances. Statistical collection. (Goskomstat of Russia – Moscow., 1998., 246 p.)

1) Data source not provided.

### Use of non-renewable material/industrial GDP

Unit: tonnes, tonnes per billion USD

Data sources: EEA database, IEA database, WB database

Time series: 1990-1995

Comments: Resource consumption (Me = Al, Cd, Cu, Pb, Mg, Ni, tin, Tungsten ore, Zn)

Countries:	Al consumption (1000 tonnes)						Cd consumption (tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark	35	28	38	37	40	42			2			
Estonia												
Finland	46	38	42	52	50	50						
Germany	2115	2107	2189	1725	1982	2382	895	652	820	673	750	750
Iceland												
Latvia												
Lithuania												
Norway	158	188	215	258	261	232	10	8	10	10	10	10
Poland	98	62	55	68			233	135	200	36	30	36
Russian Federation												
Sweden	110	101	106	112	151	135	239	181	239	216	293	335

Countries:	Cu consumption (1000 tonnes)						Pb consumption (1000 tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark	1	0					4	5	4	4	4	4
Estonia												
Finland	87	87	80	91	83	87	13	12	7	4	5	4
Germany	1028	1001	1032	921	1000	1058	448	414	412	352	356	368
Iceland							0	0	0	0		
Latvia												
Lithuania												
Norway	8	8	5				6	2	3	3	4	4
Poland	171	154	125	138	151	214	61	49	47	64	53	53
Russian Federation												
Sweden	117	125	123	139	143	143	26	25	26	34	26	26

Countries:	Magnesium consumption (1000 tonnes)						Nickel consumption (1000 tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark							1	1	1	1	0	1
Estonia												
Finland							19	18	24	27	30	36
Germany	26	21	21	15	13	15	93	77	74	75	88	106
Iceland												
Latvia												
Lithuania												
Norway	8	6	8	6	6	6	0	0	0	0	0	0
Poland	0	0	0	1	1	1	3	1	0	0	1	1
Russian Federation												
Sweden	2	1	2	2	2	2	19	16	16	23	25	26

Countries:	Tin Consumption (1000 tonnes)						Consumption of Tungsten ore (1000 tonnes)					
	1990	1991	1992	1993	1994	1995	1990	1991	1992	1993	1994	1995
Denmark	0	0	0	0								
Estonia												
Finland	0											
Germany	22	19	20	18	18	20	1	0	0	0		
Iceland												
Latvia												
Lithuania												
Norway	1	0	0	0	0	0						
Poland	1	1	1	1	1	1						
Russian Federation												
Sweden	0	0	0	0	1	0	0	0	0	0		

Countries:	Consumption of Zinc (1000 tonnes)					
	1990	1991	1992	1993	1994	1995
Denmark	13	13	16	14	12	13
Estonia						
Finland	29	27	31	31	33	28
Germany	530	540	531	515	514	503
Iceland	0	0	0	0	0	0
Latvia						
Lithuania						
Norway	16	20	22	15	19	16
Poland	110	86	84	81	75	75
Russian Federation						
Sweden	40	33	30	29	31	34

Comments: missing volumes means that data were not in the EEA data base	Me consumption (tonnes) (Me = Al, Cd, Cu, Pb, Mg, Ni, tin, Tungsten ore, Zn)					
	1990	1991	1992	1993	1994	1995
Denmark	54	47	61	56	56	60
Estonia						
Finland	194	182	184	205	201	205
Germany	5158	4831	5099	4294	4721	5202
Iceland						
Latvia						
Lithuania						
Norway	207	232	263	292	300	268
Poland	677	488	512	389	312	381
Russian Federation (RF)						
Sweden	553	482	542	555	672	701

	<b>Me consumption/industrial GDP</b>					
	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>
Denmark	<b>1.74</b>	<b>1.57</b>	<b>1.79</b>	<b>1.75</b>	<b>1.60</b>	<b>1.43</b>
Estonia						
Finland	<b>4.62</b>	<b>5.35</b>	<b>6.34</b>	<b>8.54</b>	<b>6.93</b>	<b>5.26</b>
Germany						
Iceland						
Latvia						
Lithuania						
Norway	<b>5.75</b>	<b>6.44</b>	<b>6.92</b>	<b>8.59</b>	<b>8.33</b>	<b>6.09</b>
Poland	<b>22.57</b>	<b>13.56</b>	<b>14.63</b>	<b>11.44</b>	<b>8.43</b>	<b>8.28</b>
Russian Federation						
Sweden	<b>8.13</b>	<b>7.30</b>	<b>8.21</b>	<b>11.10</b>	<b>12.44</b>	

## Industrial waste/industrial GDP

Unit: total 1000 tonnes, per GDP (kg/ 1000 USD)

\* Data sources: OECD, UNECE

Time series: mid-1990s

Definition:

Country:	total 1000 tonnes	per unit of GDP, kg/ 1000 USD	per unit of GDP, kg/ 1000 USD
	1)	1)	2)
Denmark	2560	30	20
Estonia			42
Finland	11400	140	121
Germany	64860	50	59
Iceland	10	-	9
Latvia 4)			..
Lithuania			
Norway	3290	40	44
Poland	22610	120	124
Russian Federation (RF)			
Russian Regions (RR) 1)			4,100.60 3)
Sweden	13970	100	88

\*Sources and references:

- 1) OECD: Towards Sustainable Development. Environmental Indicators. 1998 (p. 39) data for mid-1990s, details are available in the publication
- 2) UNECE. Environmental Performance Reviews. Estonia. 1996 provisional data/estimates, 1993 or latest available; GDP at 1991 prices and PPPs; waste from manufacturing industry, data for Estonia exclude 13.5 million tons of ash waste from oil-shale production GDP at 1991 prices and purchasing power parities. Waste from manufacturing industries (ISIC 3).
- 3) Industrial waste, 1998, 1000 tonnes. Data are incomplete.
- 4) Environmental Performance Reviews, Latvia, UN New York and Geneva, 1999. (p.170)
- .. No data available.

**Number of companies applying Environmental Management Systems (ISO, EMAS)  
Number of companies applying Quality Management Systems (ISO)**

Unit: number  
 Data sources: ISO, ISO World (references below)  
 GlobalNet <http://www.iso14000.net/databasetemplate.cfm>, payment is required for detailed data  
 Time series: ISO 1993-97, ISO World 1999

Country:	Sep-93	Jun-94	Dec-95		Dec-96		Dec-97		Jun-99	
	ISO 9000 2)	ISO 9000 2)	ISO 9000 2)	ISO 14000 2)	ISO 9000 2)	ISO 14000 2)	ISO 9000 2)	ISO 14000 2)	ISO 14001 3)	EMAS 3)
Denmark	608	916	1314	21	1387	96	1902	347	350	99
Estonia	0	1	1	-	4	-	1	-	-	-
Finland	324	496	772	10	951	41	1445	151	190	19
Germany	1534	3470	10236	35	12979	166	20656	352	1400	2093
Iceland	3	4	12	0	44	0	59	1	-	-
Latvia	0	0	0	-	1	-	1	-	-	-
Lithuania	0	0	2	-	3	-	29	-	-	-
Norway	172	400	890	3.00	1109	13	1273	35	72	52
Poland	1	16	130	0	260		669	8	13	-
Russia 1)	[5]	[8]	[22]	-	[56]	-	[95]	-	[1]	-
Russian Regions (RR) 1)										
Sweden	365	618	1095	2	1931	25	2789	194	645	153

\*Sources and references:

- 1) entire Russia. Data on Russian Regions consist serious problems.
- 2) ISO, <http://www.iso.ch/>, The ISO Survey of ISO 9000 and ISO 14000 Certificates. Seventh cycle – 1997 also ISO information at <http://www.iso14000.com/>
- 3) ISO World, <http://www.ecology.or.jp/isoworld/>, via ISO <http://www.iso14000.com/> (data officiality?)

## Annex 9: Compiled statistics for the Tourism Sector Indicators

### Tourism sector share of GDP

Unit: % of total GDP

\*Data sources: questionnaire

Time series: 1991-1997

Definition: Percentage of GDP on current international dollars in the tourism sector.

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark								
Estonia								
Finland 2)	1.8	1.7	1.6	1.5	1.6	1.5	1.5	..
Germany 1)					5.6	6	6	8
Iceland	..	..	..	..	..	..	..	..
Latvia 3)	..	..	..	..	..	2.9	..	..
Lithuania								
Norway								
Poland	N.A.							
Russia								
Sweden								

\*Sources and references:

- 1) 1995 - Federal Statistics Office, 1996, 1997 - DWIF (University of Munich), 1998 - DIW (German Institute for Economic Research.
  - 2) National Account 1990-1998, Statistics of Finland, Helsinki 1999. The data above concerns only the hotel and restaurant sector
  - 3) Economic Impact Assessment of International Tourism. EU Experts Report, 1997.
- N.A. Data is not available.  
 .. Data is not reported or found.

## Number of tourist overnight stays

Data sources: questionnaire

Time series: 1991-1997

Definition: Number of resident and non-resident tourist overnight stays in hotels, motels, guest houses, camping, cottages, etc.

	Hotels					Camping				
Country:	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
Denmark										
Estonia										
Finland 4)	11.194	11.703	12.01	12.707	13.164	2.174	2.094	1.871	2.07	2.02
Hotels	10.274	10.927	11.16	11.727	12.086					
Guest houses	0.597	0.463	0.502	0.558	0.634					
Holiday villages	0.323	0.313	0.348	0.422	0.444					
Germany 1)	..	300.6	300	287.2	294.5	..	23.14	56	56	56
Iceland 2)	..	..	8.96E-01	9.92E-01	..	..	..	..	..	..
Latvia 5)	2.60E-01	2.71E-01	3.00E-01	3.53E-01	3.94E-01	..	..	..	..	..
Lithuania										
Norway										
Poland 3)	6.558	7.1993	8.0228	14.9536	12.2506	1.2416	1.2973	1.1599	1.1497	1.2207
Hotels	5.9094	6.339	6.997	12.4575	9.7769					
Motels	0.2099	0.2365	0.2717	0.5919	0.5452					
Guest houses	0.4387	0.6238	0.7541	1.9042	1.9285					
Russia										
Sweden										

Country:	Cottages					Other Farms				
	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
Denmark										
Estonia										
Finland 4)	0.098	0.126	0.133	0.148	0.143					
Hotels										
Guest houses										
Holiday villages										
Germany 1)	..	..	..	..	..	..	16.3	20	23.8	25
Iceland 2)	..	..	..	..	..	..	..	4.52E-01	4.47E-01	..
Latvia 5)	..	..	..	..	..	6.76E-02	7.02E-02	6.84E-02	1.04E-01	8.01E-02
Lithuania										
Norway										
Poland 3)	N.A.	N.A.	N.A.	N.A.	N.A.	35.5788	36.5956	37.0909	39.3253	38.5147
Hotels										
Motels										
Guest houses										
Russia										
Sweden										

\*Sources and references:

- 1) Data on hotels includes motels and guesthouses. Criteria for entering the stays statistics is minimum 8 beds. No data is taken for bed-and-breakfast and cottages. Data source - Deutscher Tourismusverband "Der Tourismus in Deutschland" German tourism Association "Tourism in Germany".
  - 2) Iceland Yearbook, 1998. Data on hotels includes hotels and guesthouses.
  - 3) Data on hotels, motels and guest houses includes only rooms rented (1994-1996).  
Data for 1998 includes only statistics from January to September.  
Data source is Central Statistical Office in Poland.
  - 2) Statistics of Finland, Accommodation statistics. Data on cottages includes data on youth hostels.
  - 3) Tourism in Latvia. Statistical Bulletin 1997, Statistical Bulletin 1998. Central Statistical Bureau of Latvia. Data on others accommodation includes Spahotels, senators, boarding houses, country recreation dwellings.
- N.A. Data is not available  
.. Data is not reported

## Number of tourism sector employed personnel

Data sources: questionnaire

Time series: 1991-1998

Definition: Number of direct employed personnel in the tourism sector.

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark								
Estonia								
Finland 4)	70	64	60	58	60	62	65	..
Germany	..	..	..	..	2000	2000	2000	2600
Iceland	3.994	4.08	4.058	4.245	4.363	4.657	..	..
Latvia 5)	..	..	..	..	..	60	..	..
Lithuania								
Norway								
Poland 3)	N.A.	164.4	170.1	175.8	185.9	188	201.8	N.A.
Russia								
Sweden								

### \*Sources and references:

- 1) Data source - Deutscher Tourismusverband "Der Tourismus in Deutschland" German tourism Association "Tourism in Germany".
  - 2) Statistical year book of Iceland, 1998
  - 3) Data includes only persons employed in hotels and restaurants. Data source Statistical Yearbook, Central Statistical Office in Poland
  - 4) National Accounts 1990 – 1998, Statistics Finland, Helsinki . The data above concerns only the hotel and restaurant sector, concerning which data can be found for the whole time period.
  - 5) Economic Impact Assessment of International Tourism. EU Experts Report, 1997.
- N.A. Data is not available  
 .. Data is not reported

### Companies with environmental management system (ISO or EMAS)

Unit: numbers

Data sources: Data collected by a questionnaire

Time series: 1991-1997

Definition: Companies working in tourism sector with environmental management system using either ISO or EMAS methodology

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark								
Estonia								
Finland 2)								2
Germany 1)								13
Iceland	..	..	..	..	..	..	..	..
Latvia 3)	0	0	0	0	0	0	0	0
Lithuania								
Norway								
Poland	N.A.							
Russia								
Sweden								

\*Sources and references:

1) The Germany government opened EMAS for touristic services in February, 1998. Germany does not have statistics on ISO certified companies in tourism in Germany.

2) Mrs Annukka Harma, Project Manager, Finnish Tourist Board, in charge of projects concerning sustainable tourism.

3) No companies at all.

N.A. Data are not available

.. Data are not reported

## Annex 10: Compiled statistics for the Transport Sector Indicators

### CO<sub>2</sub> emission

Unit: 1 000 tonnes

\* Data sources: questionnaire; OECD, CO<sub>2</sub> Emissions from Transport, 1998.

Time series:

Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 7)		12 775	12 657	12 736	13 268	13 483	13 773	14 015	N.A.
Estonia 3)		342	175	182	209	215	238	256	
Finland10)	..	14327	14288	13749	14334	14178	14112	14850	15051
Germany 1)		174000	178000	182000	180000	183000	182000	183000	
Iceland 2)		642	648	653	662	682	658	700	
Latvia 8)	5829	3166	2836	2576	2229	1748	1611	2178	
Lithuania 5)						3500	3800	4100	
Norway 4)		10706	11052	11599	11461	11785	12242	12388	12787
Poland 11)	26065.00	..	..	..	..	28498			
Russian Federation 11)	243600	241600	204000	187600	161500	142700			
Republic of Karelia 6)					30 % of total transport emission				
Sweden		..	..	..	21500	22000	21900	22100	22500

#### \*Sources and references:

- 1) Umweltbundesamt, 1999
  - 2) Statistical Yearbook of Iceland, 1998
  - 3) Data on CO. Estonian Environment Information Centre , “Transport and Communications ‘96” , “Transport and Communications 97/98”; Ministry of Transport and Communications.
  - 4) Statistics Norway, Natural Resources and the Environment, 1991-1998
  - 5) Reported by the Ministry of Environment to the Convention of the Long Range Transboundary Air Pollution.
  - 6) Mockva - 1997, Impact to environmental by the sectors in Russian Federation, pp 167. Data on CO oxides
  - 7) Danish Energy Agency "Energistatistik 1997". Adjusted numbers.
  - 8) Latvian Environmental Data Centre.
  - 9) National transport agencies joint environmental Performance Report.
  - 10) LIPASTO 98\_ ([Http://www.vtt.fi/yki/lipasto](http://www.vtt.fi/yki/lipasto)).
  - 11) OECD, CO<sub>2</sub> Emissions from Transport, 1997.
- N.A. Data is not available.  
 .. Data is not reported or found.

## NO<sub>x</sub> emission

Unit: 1 000 tonnes  
\* Data sources: questionnaire  
Time series: 1991-1997

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 6)	103,28	99,62	95,37	90,17	87,93	84,84	81,88	74,67
Estonia 4)	42,00	24,50	26,00	26,00	27,00	28,00	29,00	
Finland 9)	218,00	211,00	210,00	210,00	206,00	200,00	200,00	190,50
Germany3)	1470,00	1415,00	1373,00	1293,00	1269,00	1146,00	1086,00	
Iceland 2)	7,48	7,55	7,61	7,72	7,09	6,80	6,65	
Latvia 7)	39,15	34,06	28,46	24,81	22,36	17,79	25,68	
Lithuania 1)	86,00	47,00	33,00	33,00	38,00	39,00	33,00	
Norway 5)	114,90	116,60	123,40	113,40	113,40	112,80	109,80	109,40
Poland								
Russia								
Sweden 8)				213,60	212,60	199,20	185,50	173,60

### \*Sources and references:

- 1) Reported by the Ministry of Environment to the Convention of the Long Range Transboundary Air Pollution.
  - 2) Statistical Yearbook, 1998. Includes NO<sub>2</sub> oxide.
  - 3) Umweltbundesamt, 1999.
  - 4) Estonian Environment Information Centre, "Transport and Communications '96", "Transport and Communications 97/98"; Ministry of Transport and Communications.
  - 5) Statistics Norway, Natural Resources and the Environment, 1991-1998.
  - 6) Ministry of Transport, Reference model.
  - 7) Latvian Environmental Data Centre.
  - 8) National transport agencies joint environmental Performance Report.
  - 9) LIPASTO 98\_ (<http://www.vtt.fi/yki/lipasto>).
- N.A. Data is not available.  
.. Data is not reported or found.

## SO<sub>2</sub> emission

Unit: 1 000 tonnes

\*Data sources: questionnaire

Time series: 1991-1997

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 6)	8,82	7,06	5,23	3,51	1,90	1,88	1,88	1,72
Estonia 4)	12,70	8,20	8,70	8,10	8,30	8,00	8,00	
Finland 9)	24,10	23,60	23,40	23,50	22,00	20,70	21,30	19,00
Germany	75,00	78,00	81,00	82,00	82,00	43,00	44,00	
Iceland 2)	0,25	0,25	0,26	0,26	0,28	0,25	0,31	
Latvia 7)	7,45	7,24	6,05	2,83	4,78	1,43	3,57	
Lithuania 1)	10,00	6,00	5,00	5,00	9,00	9,00	1,40	
Norway	6,90	6,20	5,70	3,90	3,60	3,20	3,40	
Poland								
Russian Regions								
Sweden				23,81	23,52	21,60	20,00	18,60

\*Sources and references:

- 1) Reported by the Ministry of Environment to the Convention of the Long Range Transboundary Air Pollution.
  - 2) Iceland Yearbook, 1998
  - 3) Umweltbundesamt, 1999
  - 4) Estonian Environment Information Centre, "Transport and Communications '96", "Transport and Communications 97/98"; Ministry of Transport and Communications
  - 5) Statistics Norway, Natural Resources and the Environment, 1991-1998
  - 6) Ministry of Transport, Reference model.
  - 7) Latvian Environmental Data Centre.
  - 8) National transport agencies joint environmental Performance Report.
  - 9) LIPASTO 98\_ ([Http://www.vtt.fi/yki/lipasto](http://www.vtt.fi/yki/lipasto)).
- N.A. Data is not available  
.. Data is not reported or find

## VOC emission

Unit: 1 000 tonnes  
 \*Data sources: questionnaire  
 Time series: 1991-1997

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 5)	94,28	89,49	81,73	70,36	68,07	60,93	58,34	N.A.
Estonia 3)	65,00	34,40	36,00	40,00	41,00	44,60	47,60	
Finland	67,90	65,60	63,80	61,80	60,50	58,70	57,10	55,80
Germany 2)	1208,00	1036,00	888,00	744,00	669,00	596,00	531,00	
Iceland								
Latvia 6)	29,876	28,193	25,602	30,871	18,662	16,580	24,650	..
Lithuania 1)	51,00	26,00	19,00	19,00	35,00	38,00	38,00	
Norway 4)	77,80	77,20	75,40	71,50	67,50	63,40	58,50	55,20
Poland								
Russia								
Sweden				181,60	174,80	164,00	150,50	136,10

### \*Sources and references:

- 1) VOC=NMVOC, reported by the Ministry of Environment to the Convention of the Long Range Transboundary Air Pollution.
  - 2) Umweltbundesamt, 1999 Data on NMVOC
  - 3) Estonian Environment Information Centre, "Transport and Communications '96" , "Transport and Communications 97/98" ; Ministry of Transport and Communications
  - 4) Data on NMVOC. Statistics Norway, Natural Resources and the Environment, 1991-1998
  - 5) Estimates from Corinair Annual National Data. Road transport only. Data assessment: serious problems.
  - 6) Latvian Environmental Data Centre
  - 7) National transport agencies joint environmental Performance Report.
  - 8) LIPASTO 98\_([Http://www.vtt.fi/yki/lipasto](http://www.vtt.fi/yki/lipasto)). The data given above refer to tailpipe emissions only
- N.A. Data is not available  
 .. Data is not reported or find

## Particle emission

Unit: 1 000 tonnes  
 \*Data sources: questionnaire  
 Time series: 1991-1998

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 5)	3,33	3,32	3,27	3,28	3,38	3,52	3,49	3,40
Estonia 3)	..	..	..	..	6,20	5,90	5,90	
Finland 7)	13,20	12,60	12,20	10,60	10,00	9,60	9,20	8,80
Germany 2)	68,00	67,00	69,00	67,00	60,00	59,00	59,00	
Iceland								
Latvia	..	..	..	..	..	..	..	..
Lithuania 1)	..	1,60	2,90	1,80	1,70	1,80	2,20	
Norway 4)	4,60	4,90	5,40	4,80	4,80	4,70	4,30	4,10
Poland								
Russia								
Sweden					3,60	3,36	3,17	3,01

### \*Sources and references:

- 1) reported by the Ministry of Environment to the Convention of the Long Range Transboundary Air Pollution.
- 2) Umweltbundesamt, 1999. Data includes dust
- 3) Estonian Environment Information Centre, "Transport and Communications '96", "Transport and Communications 97/98" ; Ministry of Transport and Communications
- 4) Statistics Norway, Natural Resources and the Environment, 1991-1998
- 5) Ministry of Transport, Reference model.
- 6) The environmental performance report from The Swedish National Road Administration. The figures only includes emissions from the road traffic.
- 7) LIPASTO 98\_([Http://www.vtt.fi/yki/lipasto](http://www.vtt.fi/yki/lipasto))
- N.A. Data is not available.
- .. Data is not reported or found.

## Road traffic fatalities

Unit: 1000 of persons killed

\*Data sources: questionnaire

Time series: 1990-1997

Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 8)		0,606	0,577	0,559	0,546	0,582	0,514	0,489	0,454
Estonia 6)		0,491	0,287	0,321	0,364	0,332	0,213	0,279	0,284
Finland 1)	0,65	0,63	0,60	0,48	0,48	0,44	0,40	0,44	0,40
Germany 5)	11,05	11,30	10,63	9,95	9,81	9,45	8,76	8,55	
Iceland 2)	0,019	0,024	0,02	0,017	0,012	0,019	0,01	0,014	
Latvia 3)	0,877	0,923	0,729	0,67	0,717	0,611	0,55	0,525	0,627
Lithuania 4)		0,216	0,131	0,136	0,123	0,117	0,134	0,138	
Norway 7)		0,321	0,329	0,281	0,284	0,305	0,256	0,302	0,352
Poland									
Russia									
Sweden 9)		0,745	0,759	0,632	0,589	0,572	0,537	0,541	0,519

### \*Sources and references:

- 1) Road Accidents in Finland, Statistics Finland. Killed in road accidents in Finland: any person who was killed outright or who died within 30 days as a result of the accident.
- 2) Statistical Yearbook of Iceland, 1995.
- 3) Statistical Yearbook of Latvia, 1998.
- 4) Statistical Yearbook of Lithuania 1998.
- 5) DIW, Verkehr in Zahlen, 1998.
- 6) "Transport and Communications 97/98" ; Ministry of Transport and Communications.  
"Estonian economy 98/99"; Ministry of Economic Affairs.
- 7) The Directorate of Public Roads.
- 6) Statistics Denmark.
- 7) Traffic injuries, Official statistics of Sweden.

## 8) Road traffic injuries

Unit: 1000 of persons injured

\*Data sources: questionnaire

Time series: 1990-1997

Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 7)		10,871	11,091	10,489	10,303	10,573	10,324	10,106	9,342
Estonia 5)		2,175	1,289	1,502	1,832	1,897	1,547	1,836	1,989
Finland 9)		11,547	9,899	7,806	8,08	10,191	9,299	8,957	9,097
Germany 1)		505,00	516,80	505,60	516,40	512,10	493,20	501,11	
Iceland 2)	0,564	0,758	0,904	0,986	1,004	1,057	1,075	1,027	
Latvia 3)	4,716	4,543	3,766	3,721	4,38	4,903	4,324	4,674	5,414
Lithuania 4)		1,251	0,863	0,968	0,835	0,816	0,981	1,247	
Norway 6)		11,638	11,233	11,434	11,113	11,571	12,063	11,677	11,851
Poland									
Russia									
Sweden		21,057	20,727	19,741	21,083	21,173	20,81	21,28	21,368

\*Sources and references:

- 1) DIW, Vrkkehr in Zahlen, 1998.
- 2) Statistical Yearbook of Iceland, 1998.
- 3) Statistical Yearbook of Latvia, 1998.
- 4) Statistical Yearbook of Lithuania 1998.
- 5) "Transport and Communications 97/98" ; Ministry of Transport and Communications.  
"Estonian economy 98/99" ; Ministry of Economic Affair.
- 6) The Directorate of Public Roads.
- 7) Statistics Denmark.
- 8) Traffic injuries, Official statistics of Sweden. The figures includes persons injured in accidents reported to the police. By comparing figures from the hospitals with the figures from the police we know that, at least, 25 % of the injured persons is not included in the official statistics. Data is incomplete.
- 9) Road Accidents in Finland, Statistics Finland. Injured in road accident: Any person who was not killed, but sustained as a result of accident injuries requiring treatment in hospital (incl. observation) or at home.

**Population in cities exposed to pollution levels above WHO air quality standards.**

Unit:

\*Data sources: questionnaire

Time series:

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 3)	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..
Finland								
Germany	..	..	..	..	..	..	..	..
Iceland								
Latvia	..	..	..	..	..	..	..	..
Lithuania 1)	..	..	..	..	..	..	..	..
Norway 2)								
Poland								
Russia								
Sweden								

\*Sources and references:

- 1) Currently not being calculated; Will be regularly calculated from the year of 2002 after the National Law on Ambient Air Protection , the Directive 96/62/EC on Air Quality, the Regulation 93/793/EEC on Risk Assessment and other relevant legislative acts will be adopted (according to the National Harmonisation Programme of National law with EU legislation – Acquis Communautaire).
- 2) Population in cities exposed to pollution levels above the Norwegian Pollution Control Authority's air quality standards. Oslo, Bergen, Drammen, Trondheim.

Note: N.A. Data is not available.

.. Data is not reported or find.

### Population exposed to transport noise greater than 65 db (A)

Unit: 1 million inh.  
 Data sources: questionnaire  
 Time series: 1991-1997

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 4)	0,31					0,28		
Estonia	..	..	..	..	..	..	..	..
Finland						0,98	0,98	
Germany 2)		12,8					12,8	
Iceland								
Latvia	..	..	..	..	..	..	..	..
Lithuania 1)	Kaunas 0,42	..	..	..	Kaunas 0,42 and Alytus 0,08	..	..	..
Norway 3)	1990-1995 = 0,285 millions inhabitants					..	..	..
Poland								
Russia								
Sweden 5)								0,222

**\*Sources and references:**

- 1) Will be regularly calculated from the year of 2002 according to the Council Directive 92/97/EEC and Decision No 1400/97/EC of European Parliament and relevant legislation acts (according to the National Harmonisation Programme of National law with EU legislation – Acquis Communautaire).
  - 2) Calculation based on Umweltbundesamt, Umweltdaten Deutschland, 1998.
  - 3) Until now there has not been undertaken any systematic measurement of persons exposed to transport noise in Norway. The only statistics available today is based on non-updated data for the period from 1990-1995 (24 hours-equivalent), concerning persons exposed to transport noise higher than 55 db:  
 Roads: 110 000 inhabitants  
 Aircraft: 150 000 inhabitants  
 Rail: 25 000 inhabitants
  - 4) Statistics Denmark. Danish Environmental Protection Agency. Data quality remands serious problems.
  - 5) Swedish national Road administration publication 1998:103.
  - 6) 55 bdA. Data source: Finnish Environment, Environmental Protection, Exposure to Environmental Noise in Finland (1998). No time series available of noise exposures. A comprehensive study "Exposure to Environmental Noise in Finland" (1998) gives exposure estimates for the years 1996 and 1997.
- Note: N.A. Data is not available.  
 .. Data is not reported or find.

**Ton km of hazardous material transported by modes of transport: water, rail, road**

Indicator: Transport

Dataset title: Ton-km of hazardous material transported by modes of transport: water, rail, road

\*Data sources: questionnaire

Time series: 1991-1997

	Water							Rail							
Country:	1991	1992	1993	1994	1995	1996	1997	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Estonia 3)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Finland															
Germany 2)		114180							51542						
Iceland															
Latvia 4)															
Lithuania1)	..	..	..	..	..	..	..								
Norway	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Poland															
Russia															
Sweden 5)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	758000	N.A.	667000	716000	678000	922000

	Road							
Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Estonia 3)	..	..	..	..	..	..	..	
Finland								
Germany 2)		50605						
Iceland								
Latvia 4)						70480	134400	
Lithuania1)								
Norway	..	..	..	..	..	..	..	
Poland								
Russia								
Sweden 5)	N.A.	N.A.	1720000	N.A.	1823000	1723000	1811000	2132000

\*Sources and references:

- 1) Currently not being calculated; will be calculated after implementing the EU Directive EC 96/35 and other relevant legislative acts( in 2001);
- 2) DIW, Verkehr in Zahlen, 1998
- 3) Propose the indicator on freight traffic (Domestic freight traffic volume, International freight traffic volume)

- 4) Statistical Bureau of Latvia.
  - 5) Million ton-kilometres. Swedish domestic road goods transport and freight traffic by SJ. Swedish official statistics. The road traffic only includes transport with Swedish registered lorries. Data is incomplete. Concerning the maritime transport there were 39 million tons of different oil-products handled in the Swedish ports during 1998.
- Note: N.A. Data is not available.  
.. Data is not reported or found.

## Access to public transportation: network and density

### a) Public transportation: length

Unit: 1000 km

Data sources: questionnaire

Time series: 1991-1998

Country:		1991	1992	1993	1994	1995	1996	1997	1998
Denmark		N.A.							
Estonia 3)		..	..	..	..	..	..	..	
Finland		..	..	..	..	..	..	..	..
Germany 2)		782,3	716,6	737,9	780,2	720,5	701,9	804,2	
Iceland									
Latvia 5)		20,6	20,6	20,5	20,4	20,4	20,4	20,3	20,3
Lithuania 1)									
	roads	20,898	21,109	21,111	21,119	21,121	21,121	21,121	
	rail way lines operated	2,007	2,002	2,002	2,002	2,002	1,997	1,997	
	inland navigable waterways	0,788	0,788	0,788	0,788	0,788	0,788	0,788	
Norway 4)		6736	6765	6849	7026	6800	7231	7350	
Poland									
Russia									
Sweden									

\*Sources and references:

- 1) Statistical Yearbook of Lithuania 1998.
- 2) DIW, Verkehr in Zahlen, 1998.
- 3) Proposed indicator is domestic passenger traffic volume except private passenger cars, million passenger-km.
- 4) Domestic passenger transport work. Million passenger kilometers. Transport Performance in Norway 1946-1997, Institute of transport Economics
- 5) Data includes the State roads.

Note: N.A. Data is not available.

.. Data is not reported or found.

**b: Public transportation density**

Unit: km/100 km<sup>2</sup>  
 Data sources: questionnaire  
 Time series: 1991-1997

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark	N.A.							
Estonia 3)	..	..	..	..	..	..	..	
Finland	..	..	..	..	..	..	..	..
Germany 2)	219,1	200,7	206,7	218,5	201,8	196,6	225,2	
Iceland								
Latvia 3)	31,9	31,8	31,8	31,6	31,6	31,6	31,5	31,5
Lithuania 1)	32,3	32,3	32,3	32,3	32,3	32,3	32,3	
Norway	..	..	..	..	..	..	..	
Poland								
Russia								
Sweden								

\*Sources and references:

- 1) Statistical Yearbook of Lithuania 1998.
- 2) Calculation based on DIW, Verkehr in Zahlen 1998, and Statistisches Jahrbuch für die Bundesrepublik Deutschland 1998
- 3) Data includes the State roads.

Note: N.A. Data is not available.

.. Data is not reported or found.

## Road and rail network length and density

### a: Road network length

\*Data sources : Data from the International data sources and questionnaire

Time series: 1990 - 1998

Definition: Roads refer to motorways, main or national highways, secondary or regional reads and others.

Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 7)		70900	71000	71000	71100	71300	71300	71300	71400
Estonia 6)	..	..	..	..	..	43825	43825	43825	41534
Finland 1)		77080	77283	77409	77495	77644	77772	77782	77796
Germany 1)	492 033	..	628 792	216 120	217 461	217 670	219 826	..	..
Iceland 2)	12 480	12 537	12 411	12 503	12 419	12 378	12342	12 691	
Latvia 3)	..	..	..	64700	55000	56200	56700	57000	57000
Lithuania 5)		49133	..	56693	60584	61442	65135	68161	..
Norway 4)		88922	89135	89737	90502	90182	90254	91157	91180
Poland 2)	363000	365000	367000	368000	371000	372000			
Russia									
Sweden 8)	96919.0	208800	208300	208900	210000	210100	210900	210700	210800

\*Sources and references:

- 1) EEA (not including motorroads)
  - 2) OECD data. All roads. Iceland - year book.
  - 3) Latvian Road Administration.
  - 4) The Directorate of Public Roads. Status 1 January each year. Roads refer to public roads
  - 5) Statistical Yearbook of Lithuania 1998. Roads refer to motorways, main or national highways, secondary or regional roads, and others.
  - 6) Estonian National Road Administration. Data includes public roads, other roads and main roads.
  - 7) Statistics Denmark. Data includes public roads only.
  - 8) Statistical Yearbook of Sweden.
  - 9) Data source: Finnish National Road Administration [www.tieh.fi](http://www.tieh.fi). Public roads, without ramps and ferry routes.
- Note: N.A. Data is not available.

.. Data is not reported or found.

**b: Rail network length**

Unit: km

Data sources\* : Data from the International data sources and data collected by questionnaire

Time series: 1990 - 1998

Country:	1990	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 5)		2840	2840	2880	2840	2840	2840	2840	2740
Estonia 3)		1026	1018	1024	1024	1021	1020	1018	1018
Finland 8)		5803	5853	5864	5859	5859	5860	5865	5867
Germany 2)		41100	40800	40400	41300	41700	40800	..	..
Iceland	no rail								
Latvia 6)		2397	2406	2413	2413	2413	2413	2413	2413
Lithuania 1)		2007	2002	2002	2002	2002	1997	1997	
Norway 4)				4027	4023	4023	4023	4021	4021
Poland									
Russia									
Sweden 7)		11000	11000	10900	10800	10900	10900	10900	N.A.

## \*Sources and references:

- 1) Statistical Yearbook of Lithuania 1998. Roads refer to motorways, main or national highways, secondary or regional roads, and others.
- 2) DIW, Verkehr in Zahlen 1998
- 3) Statistical Office of Estonia, [http://www.stat.ee/wwwstat/eng\\_stat/](http://www.stat.ee/wwwstat/eng_stat/)
- 4) Official Statistics of Norway 1998. Status 1 January each year.
- 5) Statistics Denmark. Data includes state railways and private railways but exclusive private tracks.
- 6) Latvian Road Administration.
- 5) Statistical yearbook of Sweden.
- 6) Transport and Communications Statistical Yearbook for Finland.

### c: Road network density

Unit: km/100 km<sup>2</sup>  
Data sources: questionnaire  
Time series: 1991-1998

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 5)	164,52	164,75	164,75	164,99	165,45	165,45	165,45	165,45
Estonia 3)					101,30	103,40	96,00	91,80
Finland	22,87	22,93	22,97	22,99	23,04	23,08	23,08	23,08
Germany								
Iceland 2)	12,17	12,05	12,14	12,06	12,02	11,98	12,32	
Latvia	..	..	100,20	85,20	87,00	87,80	88,30	88,30
Lithuania 1)	75,24	..	86,82	92,78	94,09	99,75	104,38	
Norway 4)	27,50	27,50	27,70	28,00	27,90	27,90	28,20	28,20
Poland								
Russia								
Sweden 6)	50,81	50,69	50,83	51,10	51,14	51,33	51,28	51,29

#### \*Sources and references:

- 1) Statistical Yearbook of Lithuania 1998. Roads refer to motorways, main or national highways, secondary or regional roads, and others.
- 2) Statistical Yearbook of Iceland 1998.
- 3) Estonian National Road Administration.
- 4) The numbers refer to road length. Calculations made by Statistics Norway, Department for Economic Statistics
- 5) Calculation is based on total area 43094,39 km<sup>2</sup>. Denmark Statistics.
- 6) Statistical Yearbook of Sweden
- 7) Finnish National Road Administration ([www.tieh.fi](http://www.tieh.fi)). Public roads, without ramps and ferry routes.

**d: Rail network density**

Unit:

km/100 km<sup>2</sup>

Data sources: questionnaire

Time series: 1991-1998

Country:	1991	1992	1993	1994	1995	1996	1997	1998
Denmark 5)	6,59	6,59	6,68	6,59	6,59	6,59	6,59	6,36
Estonia 3)	2,27	2,25	2,26	2,26	2,26	2,25	2,25	2,25
Finland	1,74	1,74	1,74	1,74	1,74	1,74	1,74	1,74
Germany 2)	11,5	11,4	11,3	11,6	11,7	11,4		
Iceland	no rail							
Latvia 6)	3,71	3,73	3,74	3,74	3,74	3,74	3,74	3,74
Lithuania 1)	30,7	30,7	30,7	30,7	30,7	30,6	30,6	
Norway 4)			1,24	1,24	1,24	1,24	1,24	1,24
Poland								
Russia								
Sweden	2,69	2,67	2,65	2,63	2,66	2,66	2,65	

**\*Sources and references:**

- 1) Statistical Yearbook of Lithuania 1998. km/1000 km<sup>2</sup>.
- 2) calculation based on DIW, Verkehr in Zahlen 1998, and Statistisches Jahrbuch für die Bundesrepublik Deutschland 1998
- 3) Estonian Ministry of Transport and Communications
- 4) Territory of Norway 323 758 km<sup>2</sup>
- 5) Calculation is based on total area 43094,39 km<sup>2</sup>. Denmark Statistics.
- 6) Territory of Latvia 64589 km<sup>2</sup>

### Unfragmented, low-traffic areas (minimum 100qm)

Unit:

Data sources: Data collected by a questionnaire

Time series:

Country:	1991	1992	1993	1994	1995	1996	1997
Denmark	N.A.						
Estonia	..	..	..	..	..	..	..
Finland							
Germany	..	..	..	..	..	..	..
Iceland							
Latvia	..	..	..	..	..	..	..
Lithuania 1)	..	..	..	..	..		
Norway	..	..	..	..	..	..	..
Poland							
Russia							
Sweden							

\*Sources and references:

1) low-traffic areas are not being identified; NB! There is the road traffic daily intensity of the main highways being calculated

Note: N.A. Data is not available.

.. Data is not reported or found.

## Annex 11: Abbreviations

BEF – Baltic Environmental Forum

EEA – European Environmental Agency

EEA ETC/AQ – European Environmental Agency's European Topic Centre on Air Quality

HELCOM – Helsinki Commission

IEA – International Energy Agency

OECD – Organisation for Economic Co-operation and Development

RIVM – National Institute of Public Health and the Environment

UNCHS - United Nations Centre for Human Settlements

UNDP- United Nations Development Programme

UN/ECE – United Nations Economic Commission for Europe

WCMC – World Conservation and Monitoring Centre

WHO – World Health Organisation

WI – Wetlands International

WRI – World Research Institute

WB – World Bank