Thank you Chairman.

Ladies and gentlemen

Let me first thank the organisers of the conference for inviting me to this conference and giving me the opportunity to give this presentation, and therefore inter alia also the opportunity to present the United Nations Environmental Programme and the project Global International Waters Assessment and our work relating to the Baltic Sea. The Global International Waters Assessment is addressing the globes shared water bodies and the associated resources – of which the Baltic Sea is one – from the perspective of environmental issues, the exploitation of living resources and the socio-economic impacts; human well-being and health. All with the objective to advice politicians and decision makers on policies and management of the aquatic resources.

In this context GIWA was also designed to foster greater understanding of the driving forces and casuals relationships behind environmental pressures on International Waters. GIWA has helped build the foundation for transboundary ecosystem based management and the implementation of sustainable development policies.

The Global International Waters Assessment is cooperation between UNEP and the Government of Sweden. We are hosted by the University of Kalmar – in the midst of the Baltic Sea region.

The title for this presentation is "Presentation of the Baltic Sea Assessment". From my perspective a more appropriate title would have been "Quality of life in the Baltic Sea region", because that is what it is all about. The GIWA assessment is not confined to a state of the environment only, but it includes amongst others social, economical as well as environmental qualities. So, I shall in my presentation focus on the environmental qualities, environmental sustainability and the relations to sustainable development in general.

The Baltic Sea region comprises the littoral states of the Baltic Sea. They have from ancient times been connected by the Baltic Sea that has been the medium for communication, trade, culture and cooperation in this region of the world. The Quality of life in the Baltic Sea Region therefore very dependant on the health of the Baltic Sea. Human behaviour is not always rational, so in periods there has been separation between the Baltic neighbours, hostilities and wars. Our generation has been plagued by the iron curtain and the cold war. Now, in the post cold war times rebuilding trust and cooperation across the Baltic is the most vital process in order to improve the Quality of life and a better future for us all; especially when it comes to the environmental condition of the Baltic Sea itself. We all want the future developments to be prosperous and sustainable and without care for the environment no sustainable development is possible.

Water is life. Humans have always searched for the best sources of drinking water, even before the birth of Egypt and Rome. We need water for survival, but also to be able to perceive good life quality and beauty of surroundings.

Important commercial activities in the Baltic region are dependant on a clean and healthy sea. Tourism is one of them. People come to the shores of the Baltic Sea and sails the water from Germany to Finland. They come for the unique nature, the beaches and the clean environment. However, these pictures are also from the Baltic, Extensive alga blooming and toxic polutants killing the aquatic life. If the present pollution, nutrient input, eutrophication and alga blooming do not improve, then the recreational possibilities in the sea, on the beaches and along the coast will be reduced and tourism among others will be hurt.

Fishery is another activity dependant on clean waters. The fisheries have already lost much of its value due to over-fishing, invasion of alien species and destruction of spawning grounds and important aquatic habitats. In addition the fish do not meet European standards with respect to contamination of the fish flesh by chemical substances.

Finally, I will point to the treat by the increasing shipping traffic in the Baltic. New oil export terminals in the eastern Baltic has led to new tanker routes. Fortunately,

we have net had any major tanker accident yet. But unless the highest technical standard for the ships is made mandatory and the shipping traffic control is significantly improved; it is only a matter of time before we are struck by a disaster.

If welfare shall prosper in the region our companies providing the economic basis need success in a highly competitive global marked, This will not be fulfilled unless the companies are able to attract the most competent employees. With a continuing more international and globalised world people are becoming more mobile and seek careers where the quality of life is favorable. Again, the environment and the clean sea play a pivotal role. An important quality in this region in order to attract experts from the outside - and to keep those who already are here - is the nature, a clan sea and a healthy environment.

Globally water bodies and seas are facing huge stresses from anthropogenic activities, population growth and migration to coastal areas. The development of modern society has brought new environmental challenges and the management responses have not always led to sustainable use. Improper uses of natural resources and short-time economic objectives have resulted in a severe degradation of our water bodies in a fairly short time frame. This degradation has now reached a level where the health and well being of large populations are threatened. Water quality is seriously degraded by pollution from land-based activities, such as toxic chemicals, pathogens and excessive nutrients that enter the seas with river water and other runoffs. Important aquatic habitats are destroyed by infrastructure development; over-extraction of water for agriculture, industry and other human uses is drying up rivers and lakes and is depleting groundwater aquifers. Overexploitation of fish and other living resources in the water bodies threatens food security for million of people living in the coastal areas, most of them poor. The degradation has now reached a level where the health and well being of large populations are threatened. GIWA has assessed 66 aquatic regions globally; comprising both freshwater basins; and coastal waters and the large marine ecosystems. The assessment has covered 5 concerns, freshwater shortage, pollution, habitat destruction, overexploitation of living resources and global climate change. And the socio-economic impacts; economic impact health impact and other social and community impacts. These

concerns have been assessed on a scale from 0 – 3; no known impact to severe impact. The result is shown in this global matrix.

The Baltic Sea is one of these regions.

Nearly 85 million people lives within the Baltic Sea catchments area, about half of them in Poland. The urbanisation rate is relatively high in the Baltic Sea catchments area, particularly in Denmark, Sweden and Germany, where more than 80% of the population is living in urban areas.

All countries around the Baltic Sea are considered industrialised and during the last six years the industrial sector has been developing considerably. The highest growth rates have been recorded in Estonia, Poland and Finland.

The industrial sectors with the most harmful influence on the environment are the pulp and paper, chemical, food processing and mining industry.

The agriculture area has, in the last decades, decreased considerably in all Baltic Sea region countries, it is now 7% of the total area in Finland, but as high as 62% in Poland. Still the eutrophication caused by fertilizers used in the agriculture activities is one of the main problems in the Baltic Sea.

Eutrophication was considered to have a severe impact in the sub-region in general. The main reason behind the eutrophication is the load of nutrients entering the Baltic Sea. The waterborne and airborne loads are two main sources.

Fishery traditionally plays an important role in food supply, especially in Estonia, Latvia and Lithuania. Fishing in the Baltic is mainly focused on marine species, but also on some freshwater species and those, which migrate between the sea and rivers. The Baltic Sea fauna counts about 100 fish species. Cod, herring, sprat and salmon are the main commercially exploited species in sea fisheries and the only species regulated by quotas within the IBSFC (International Baltic Sea Fishery Commission). Over- fishing is a large problem in the Baltic Sea.

The stocks have been exploited at high levels and beyond the levels advised by the ICES (International Council for the Explorations of the Sea). The fleet capacity and fishing effort have not been reduced accordingly, and the fish mortality has increased during the stock decline

Thus the responses of the society to the water management challenges are not always environmental friendly. The concept of Integrated Coastal Zone Management (ICZM) has been developed in order to improve this situation, but too often integration is a proxy without deeper implications. Sectorial thinking prevails. For example, agriculture policies and practices are still developed without taking the aquatic environment into consideration. The main challenge is to revert to environmental sustainability meaning that our use of the seas can be done without damaging the environment or depleting the fish stocks and other aquatic resources. This can only be achieved by integrating socio-economic and environmental decision making in order to promote sustainable development. Practical steps of such integration directed towards improved environmental health conditions can easily be outlined, but the realisation of these steps does not often take place. They depend on financial possibilities and stakeholder willingness that are difficult to leverage. This also applies to the Baltic Sea region.

Water protection in the Baltic Sea region is regulated by several international conventions ratified by the Baltic Sea states. As early as in 1902 the International Council for the Explorations of the Sea (ICES) was founded. Today ICES is one of the main organisations co-ordinating and promoting marine research in the North Atlantic including adjacent seas such as the Baltic Sea and North Sea.

From the 1970s to the mid-1990s, the two most important conventions regulating the protection of the environment and living recourses of the Baltic Sea were recognised to be the Gdansk Convention, signed in 1973, soon followed by the Convention of the Protection of the Marine Environment of the Baltic Sea, signed in Helsinki in 1974 (Helsinki Convention).

The Helsinki Convention is responsible for the protection of the Baltic Sea from pollution and also for the assessments of the state in the region. The Helsinki Commission (HELCOM), which is responsible for the implementation of the Convention, coordinated a joint monitoring programme of the Baltic Sea. More than 150 HELCOM Recommendations have been drawn up and adopted by the Commission for the protection of the sea and a Joint Comprehensive Programme, JCP, was approved in 1992.

Full implementation of the Water Framework Directive by the member states by 2015 will improve the overall environmental quality of the Baltic Sea.

It is often argued that the cost of being environmental friendly is an impediment for economic development. However this assumption is wrong. From an holistic point of view the situation is different. The environmental cost will always have to be covered; the remaining question is "who has to pay?" This is today demonstrated in the Baltic Sea. For very long time water has been regarded as an infinite resource and the water bodies as an infinite receptor of waste, debris and effluents. Today we have to pay the cost of this negligence. The only right principle to apply is that those who induce the environmental costs – any opportunity cost included - should account for them. If environmental costs are internalised in pricing of products and services, then the marked-forces will tend to moderate the human consumption patterns. Marked based instruments can efficiently be used to promote sustainable use. The additional benefit of correct pricing is that revenues will be available for investments for environmental improvements. The upside is that economic returns for investments in environmental protection are significant because of improvements in public health, ecosystem productivity and damages that are avoided.

Policies should also be based on the precautionary principle. It is always an easier task to prevent damage that to mitigate problems. This is particularly true for the Baltic Sea environment. The Baltic is an enclosed sea. Rivers and other run-off from the land masses carry chemicals, sewage and other substances to the Baltic sea. The only exchange of water with the North Sea & Atlantic is through the narrow Danish straits and Öresund and hence will any pollutant remain in the Baltic for a long period of time. A huge effort is being made in order to restore the Baltic Sea to its

former environmental state, but it will take years, maybe as much as 10 – 20 years before significant improvements can be seen

Let me also add that building public awareness is another important activity. Public support for environmental protection is generally weak, despite the severity of the environmental problems and the aquatic environment is no exception. These are key obstacles for the implementation of sustainable use of the seas. Without public awareness and public participation commercial interests will often take priority over environmental considerations. Therefore environmental awareness campaigns are important and they should be targeted with the ambition to increase public participation. In particular, exposed stakeholder groups such as farmers and fishermen should be subject to specific awareness building programs. Public participation is commonly manifested through non-governmental organisations (NGOs) and other community based organisations. These organisations should therefore be involved in projects that may affect the aquatic environment, and in projects that in meant to bring environmental improvements.

It is also important that a proper understanding of the environment is given to the young generation. I am proud to say that as part of our activities in Kalmar we have also had the opportunity to involve the local school in our work. Through practical exercises, school children learned about the hydrology cycle, ecology and the importance of the aquatic ecosystems for human life and welfare.

I had also the opportunity to visit St. Petersburg some weeks ago, which included a visit to the local water utility Vodokanal responsible for water, sewage and sewage treatment plants for the city. I was very impressed by their educational laboratory where school classes would come for education in ecology and the importance of the environmental status of the Baltic Sea. I encourage all the Baltic cities to follow these examples.

The Global International Waters Assessment is done by comparable assessments on the regional scale. All together 66 such regional assessments will be carried out and the Baltic Sea region is one of them. I can today present our assessment report from the Baltic Sea. This report is the result of a cooperation of experts and scientists

from many of the Baltic countries under the leadership of Dr Ain Läine from Estonia. As such it is an achievement of cooperation in itself. In addition to the state of the environment this report also identifies the root causes of the environmental problems of the Baltic Sea and advices policy options for mitigations and a more sustainable use of the Baltic Sea.

The root cause analysis of this report show that eutrophication and alga bloom is rooted in
Water run-offs from land:

- **Intensive agriculture; Excessive use of fertilisers and high livestock density**

The intensive use of fertilizers in agriculture is still a large problem, though there has been a reduction since 1980. Large production units are substantial point sources of pollution. Increased production of meat and milk with minimum expenses is achieved through very high livestock densities.

- **Inefficient technology; Poor implementation of modern agricultural technology**

Very often the agricultural technology is old-fashioned and the income due to the low prises of agricultural products does not allow farmers to purchase expensive modern technology. There is a lack of modern technology and best agricultural practice.

- **Lack of Governance; Lack to successfully integrate environmental policy into agricultural policy. Lack of adequate government land use policies, and lack of regulations for land use conservation and use of water resources.**

The EU common Agricultural Policy has a central role regarding the key policies on agricultural issues. However, this could sometimes be in conflict with environmental policies. For example the production of diary products is sometimes beyond the environmental optimum. This causes a pressure on the soil and is a potential contribution to the nutrient load.

- **Urbanisation and Economy: The high urbanisation rate leads to increased**

and uncontrolled discharge of municipal and industrial pollutants. The inadequate water pricing policies do not give sufficient revenues for needed investments in waste water treatment facilities

Airborne inputs

- **Governance: Ineffective laws and regulations to control emissions are one of the reasons why nitrogen depositions were not cut down to recommended level. Increased sea and road traffic may result in a higher amount of emissions, due to the lack of adequate government transport policy.**

And the root causes behind the problem with overfishing were:

- **Economic: Fishing subsidies, market failure and economic reform failures.**

There is a structural overcapacity of the fleet in many parts of the *Baltic Sean and the economic profitability is low for all fishermen. Subsidies have led to fleet over-capitalisation and to significant by-catch and discards of small fish species. It is necessary to improve the balance between the fishing potential and the biological reality.

The current system of taxation, fuel and material prices, high tariffs for fish product transportation, high interest rates have led to the growth of illegal fishing.

- **Education and Knowledge:**

There is an inadequate system of fish stocks assessment. The assessment of the biological resources of stocks and levels of total allowable catches is performed withour proper knowledge about the conditions of the marine ecosystems and with inadequate data on stock assessments.

- **Governance and legal: In most coastal regions of the Baltic, fish is sold directly from the producer or their organisations to the trade and processing industries and is not marketed at auctions. The prices for fish products are very different in the Eastern and Western Regions. There are different systems for fishery quotas. There could be some mis-reporting of catches.**

There is a need for coordination.

The policy options recommended for mitigating the problems concern co-operation and integration, such as:

- **To integrate environmental policies with agricultural policies by supporting co-operation networks and action programmes. It is often argued that the agriculture sector lack the financial basis required to implement more environmentally friendly practices and that such a requirement would lead to a down building of the agriculture sector. That need not be right. If new and innovative agriculture practices was introduced, a lot could be achieved. Buffer zones to catch run-offs may not be feasible due to the large areas required. However, it should be mandatory to collect run-offs from the fields by ditches and trenches for treatment. A low cost alternative for treatment could be artificial wetlands.**

- **To strengthen sustainable fisheries by means of increased co-operation in the field of control and enforcement as well as to integrate fishery policies with economic and environmental strategies**

- **Public awareness programs and stakeholders' involvement in order to increase the understanding for the connection between economic and environmental issues. An important factor required for increased public awareness would be a "Baltic watch" information system providing real-time, on-line information about the state of the environment and pollution sources, f. ex accessible through internet.**

- **To implement the EU Water Framework Directive in all the EU countries situated in the catchment area of the Baltic Sea and to ensure similar actions in Russia.**

But most importantly is an increased cooperation between the Baltic States. Helcom provides a formal forum, but success is only possible trough active participation and willingness from the member states. There are some ongoing activities and projects. I can mention

- **the GEF project: the Baltic Sea Regional Project (BSRP), which was adopted in collaboration with HELCOM**
- **and the Euroregion Baltic (ERB) co-operation aiming to prepare the countries for participation in the implementation of the EU Water Framework Directive**
- **the HELCOM Joint Comprehensive Action Programme. This project is called SEAGULL.**
- **An Agenda 21 for the Baltic Sea Region is also developed.**

However, such cooperation also has alsoto be part of daily life. That is networking activities such as:

- **between universities and schools**
- **farmers ad farmer's organisations**
- **fishermen and fishermen's organisation**

should be encouraged and developed.

It is my hope that this report will lead to actions, that it will serve as a roadmap to environmental sustainability of the Baltic Sea and also contribute to improvements of the Quality of Life in the Baltic Region.