

Sustainable Development

New Bearings for the Nordic Countries.

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**Sustainable Development
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TemaNord 2004:568
© Nordic Council of Ministers, Copenhagen 2004
ISBN 92-893-1106-1

This publication can be ordered from www.norden.org/publikationer or directly through our sales agents. On the website you can also read and download some of our publications.

Printed in Denmark

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Nordic co-operation

Nordic co-operation, one of the oldest and most wide-ranging regional partnerships in the world, involves Denmark, Finland, Iceland, Norway, Sweden, the Faroe Islands, Greenland and Åland. Co-operation reinforces the sense of Nordic community while respecting national differences and similarities, makes it possible to uphold Nordic interests in the world at large and promotes positive relations between neighbouring peoples.

Co-operation was formalised in 1952 when *the Nordic Council* was set up as a forum for parliamentarians and governments. The Helsinki Treaty of 1962 has formed the framework for Nordic partnership ever since. The *Nordic Council of Ministers* was set up in 1971 as the formal forum for co-operation between the governments of the Nordic states and the political leadership of the autonomous territories, i.e. the Faroe Islands, Greenland and Åland.

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1. Sustainable Development – New Bearings for the Nordic Countries.

Revised Edition With Goals And Initiatives For 2005–2008

1.1 Background

The Prime Ministers' declaration on sustainable development

In November 1998, the Nordic Prime Ministers and the political leaders of the autonomous areas, the Faroe Islands, Greenland and the Åland Islands, adopted the Declaration on a Sustainable Nordic Region. For the purposes of the present strategy, the term Nordic region or Nordic countries includes these autonomous areas.

“A Sustainable Nordic Region”

Oslo, 9 November 1998

We, the Prime Ministers of Denmark, Finland, Iceland, Norway and Sweden, the Prefect of the Faroe Islands, the Prefect of Greenland and the Prefect of the Åland Islands are in agreement that the promotion of sustainable development is one of the key challenges of the 21st century.

We are fully aware of the importance of the new Treaty of Amsterdam; of the conclusions reached at the meeting of the European Council in Cardiff in 1998 on the sustainable development of the European Union; of the work undertaken in connection with the Northern Dimension of EU policy; of an Agenda 21 for the Baltic Sea region, (Baltic 21); of the activities of the AEPS (now the Arctic Council); of the Barents Euro-Arctic Council declaration; and of cooperation resulting from our joint declaration issued in Bergen on sustainable energy supply in the countries bordering the Baltic Sea

We are in agreement that the following objectives should serve as a basis for the development of a sustainable Nordic region and sustainable development in our immediate vicinity:

1. Present and future generations must be assured a secure existence and a healthy life.
2. A sustainable society must be based on democracy, openness and participation in local, regional and national cooperation.
3. Biodiversity and the productivity of ecosystems must be preserved.
4. Emissions and discharges of pollutants into air, soil and water must not exceed the self-regulating capability of the natural environment, i.e. critical load levels on ecosystems.
5. Renewable natural resources must be utilised and protected efficiently within their capacity to renew themselves, i.e. the utilisation of renewable natural resources must not exceed their rate of regeneration in the long term.
6. Non-renewable natural resources must be utilised in such a way that natural ecocycles are safeguarded and renewable alternatives are developed and supported.
7. Efforts must be made to promote and maintain a high level of public awareness of the measures and processes necessary to achieve sustainable development.

8. Continued efforts should be made to mainstream the principle of sustainable development.
 9. The role of indigenous peoples in bringing about sustainable development must be emphasised.
 10. Over time, efforts should be made to ban the use of xenobiotic substances and substances harmful to people and nature.
 11. The necessary innovative approaches should be adopted to encourage more efficient energy and natural resource utilisation.
- In pursuance of these objectives, **we hereby commission** the Nordic Council of Ministers to draw up an intersectoral strategy for sustainable development in the Nordic region and the Adjacent Areas. The strategy should focus on areas of common interest to the Nordic countries, where the latter are especially equipped to contribute to sustainable development, and where Nordic cooperation creates special added value. The assignment should be completed by 2000.

The strategy for sustainable development in the Nordic region was adopted by the Nordic Prime Ministers and the Nordic Council in 2000. The strategy, which took effect in 2001, contained goals and initiatives for the period 2001–2004 as well as long-term goals for the period up to the end of 2020.

Revision of the strategy

The original strategy provided for a follow-up and revision of its aims and proposed measures. The revision was then to be submitted to the Prime Ministers and political leaders of the autonomous areas in 2004.

The terms of reference emphasise that the aim of the revised strategy must be to help strengthen and influence relevant international processes such as the EU, the OECD and the UN, and that the social and economic dimensions should be given greater prominence.

New goals and initiatives for the period 2005–2008 have accordingly been set out in the revised strategy, while the long-term aims remain unchanged. The revised strategy also includes a new chapter on sustainable production and consumption in the section on intersectoral (horizontal) action areas (Part 1). The chapter is intended as a contribution to the follow-up of the Plan of Implementation adopted at the World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002. A new chapter concerned particularly with population developments, public health, education and research has also been added.

The past few years have seen numerous, far-reaching changes in the sustainable development sphere, at international, regional and local level. The outcome of the Johannesburg summit, which concluded with the adoption of a comprehensive implementation plan and a political declaration, was one such development. Within the European Union, a major event was the June 2001 Göteborg summit, which adopted a strategy for sustainable development and eastward enlargement. These changes were taken into consideration and, where appropriate, incorporated in the revised strategy.

The draft revision was circulated for comment to some 120 Nordic NGOs. Their replies were evaluated and taken into account. A list of the responding NGOs may be found in Appendix 2. Many emphasised the need for clearly defined goals, timetables and indicators, the global and social dimensions of sustainable development, and a precise definition and the application of the lever principle. Also stressed was the need to identify the benefits accruing to the Nordic region. One of the challenges inherent in the continued

development of Nordic cooperation on sustainable development is to give due consideration to many of the views put forward.

1.2 The Nordic countries' common point of departure

The Prime Ministers' sustainable development goals are in line with the definition drawn up for Agenda 21, the Rio Declaration and the Brundtland Commission report.

"Sustainable development is ... development that meets the needs of present generations without compromising the ability of future generations to meet their own needs. [...] In the final analysis, however, sustainable development is no final state of harmony, but rather a process of change in which resource utilisation, the management of investment, the direction of technological development and institutional change are brought into line with future as well as present needs".

Sustainable development has three interdependent dimensions: economic, social and ecological. It presupposes broader and deeper integration of these three aspects, a process ultimately defined and delimited by the ecological dimension.

The ecological dimension of sustainable development and the integration of environmental considerations remain a major challenge in the Nordic region, and the wording of the Prime Ministers' declaration stresses this dimension of sustainable development

Historically, the Nordic welfare states have attached importance to the mainstreaming of social considerations. The objective of enhancing the quality of life based on common fundamental values such as justice, equality, democracy, openness, and participation will remain central concerns.

Health, employment, and gender equality objectives are to be developed as part of the goals and initiatives for each sector. This should apply to all groups and serve to promote "spatial planning and design for all" when designing urban buildings, infrastructure, etc. For example, the full integration of disabled people into the community is predicated on adequate planning and practical measures in a range of areas.

Agenda 21 and the Johannesburg WSSD declaration and plan of implementation state that gender equality, which, among other things, presupposes participation in economic and political decision-making processes, is a precondition of sustainable development and the implementation of Agenda 21 in its entirety. Although the Nordic countries have made considerable progress by international standards, gender-based disparities in terms of access to economic resources, power and influence continue to exist.

Creating conditions of prosperity in all countries without impairing the global climate, ecosystems or people's health is one of the greatest challenges of our time. Increased investment in environmentally driven growth and welfare can help us meet several of these challenges. Developed countries have a responsibility to lead the way in the transition to an environmentally sustainable society. It is a process which can also open up new prospects and substantial benefits in terms of economic development and employment. The transition will require new technologies, know-how and expertise, and can generate new markets for products and services. The Nordic countries may gain a competitive edge in the new markets by consistently investing in sustainable development and growth, and thereby creating new jobs. At the same time, efforts to build know-how

and expertise in this sphere can safeguard employment during periods of restructuring. This holds true both for the Nordic region and the adjacent areas.

The transition to a sustainable society through the mainstreaming of environmental considerations and sustainable development will create conditions conducive to growth, employment and welfare, while focusing greater attention on environmental concerns. Measures to safeguard jobs during the transition to sustainable development are therefore integral to transition activities in the various sectors.

The present strategy provides the overall framework for transition and serves as a basis for Nordic sub-strategies and action plans. It conforms to the overall priorities for Nordic cooperation and provides a basis for an ongoing transition to sustainable development in the Nordic countries and within the context of Nordic cooperation.

The aim of the strategy

The Nordic Strategy for Sustainable Development must also serve as a point of departure for joint Nordic contributions to international talks on sustainable development. A number of the priority areas in the strategy reflect commitments made at the Johannesburg WSSD. The Nordic countries played a proactive role in the run-up to and follow-up of the world summit through their work on a ten-year framework of programmes for sustainable production and consumption. Nordic cooperation has also had an impact on EU interventions in the global arena. Other areas where Nordic cooperation can influence international cooperation within bodies such as the EU, the OECD and the CSD are sustainable utilisation of marine resources, policies to promote environmentally sound products, efforts to limit the use of hazardous chemicals, promotion of environmental technology, renewable energy sources, efficient energy utilisation, and the application of economic and other policy levers.

Cooperation for sustainable development must be underpinned by a positive vision of welfare within and outside the Nordic region. The purpose of Nordic strategy is to complement the Nordic countries' national strategies as well as other international and regional strategies for sustainable development, and thereby help strengthen efforts in the international arena. By this means, the Nordic countries can promote closer, binding international cooperation for sustainable development.

The Prime Ministers stress the importance a) of mainstreaming the principle of sustainable development, i.e. integrating it into the policy- and decision-making process for all sectors of society, and b) of further defining the goals laid down in the declaration in terms of an intersectoral strategy for sustainable development.

The strategy addresses five economically intersectoral action areas: climate, bio-diversity, the marine environment, chemicals, and food safety. These areas are particularly relevant to a closer definition of the objectives of the Prime Ministers' declaration, which deals with biodiversity, air, soil and water pollution, the use of renewable and non-renewable resources, and termination of the use of substances harmful to human health and the environment.

The areas present health, environmental, social, and economic challenges, and progress is predicated on horizontal measures and success in mainstreaming the principle of sustainable development. Thus the work of mainstreaming environmental concerns and sustainable development in chosen sectors forms the 'hub' of the strategy. The sectors in question are energy, transport, agriculture, fishing and forestry.

As in the original strategy, a key principle governing Nordic cooperation for sustainable development is – in certain areas – the ‘highest level of ambition applied’: if the Nordic country with the highest level of ambition is allowed to take the lead Nordic cooperation can be used as a lever, nationally and internationally.

Accounted among the world’s richest nations, the Nordic countries acknowledge their responsibility for sustainable development. Their aim, as societies conscious of their responsibilities, is to bring about positive change in the foreseeable future.

Sustainable development cannot be achieved in one country or region in isolation. The Nordic region is closely dependent on development in Europe and across the globe. International trade has forged strong ties between countries. This also applies to trans-boundary pollution, climate change and economic and social development. Moreover, Nordic production and consumption have a significant impact on the environment in other countries. Progress towards sustainable development also hinges on the willingness of countries to assume individual as well as collective regional responsibility for initiating cooperation for sustainable development and thereby promote solutions to common challenges. Efforts should therefore be made to widen Nordic cooperation to include adjacent areas where the Nordic countries are particularly well placed to contribute to sustainable development.

The Nordic countries share many similarities in terms of social structure and cultural heritage. Conditions in the region are particularly favourable to the promotion of a transition to sustainable development. This may be attributed to the region’s political stability, close cooperation between its member countries, functioning societies based on the rule of law and well-educated citizens with considerable ability to adjust to changing conditions. Common problems and shared development potential create a basis for close cooperation. The ambition to generate added value through cooperation towards sustainable development is shared by all.

At the same time, efforts to promote sustainable development reflect substantial differences in prevailing conditions in the Nordic countries. There are considerable disparities between them regarding the socio-economic importance of industries such as fishing, agriculture, forestry and manufacturing. The countries also face markedly different challenges in terms of mainstreaming environmental considerations and sustainable development.

The Prime Ministers have emphasised the role of indigenous peoples in the transition to sustainable development. The Rio Declaration states that “indigenous people and their communities ... have a vital role in environmental management and development because of their knowledge and traditional practices”. The Sami and the Inuit are indigenous to the Nordic region. The Nordic countries actively promote the cause of indigenous peoples and will continue to strengthen their rights through political dialogue based *inter alia* on international declarations and agreements. The Nordic countries and the self-governing territories – acting at international and regional level – will continue to affirm the right of indigenous people to take part in decision-making processes affecting their traditional lands, livelihoods, and ways of life.

1.3 Challenges

Three social transformation processes in particular challenge and call into question development in industrialised societies: globalisation, the advent of the information society and sustainable development. The distinguishing feature of globalisation is the internationalisation of the market economy and the growing interdependence of nation states.

As the information society has developed, social and institutional relations have become a great deal more open and transparent. Knowledge is the most important factor of production in an information society and as such will play a crucial role in the future growth strategies of industrialised countries. Information technology has also facilitated the development of new relations in the enterprise sector, civil society and political life. Thanks to broader, faster, and more transparent information flows, people expect more in terms of openness and responsibility from authorities, businesses, and institutions.

Sustainable development poses a challenge in terms of bringing human activities and patterns of production and consumption into harmony and balance with nature's functions and sustaining capacity, while meeting long-term economic and social requirements. Putting resources into health and investing in our children and young people are also vital economic concerns.

Through the UN, the international community has achieved a high degree of unanimity on the main challenges arising in connection with sustainable development. The Brundtland Commission identified the principal challenges as global poverty and the environment. The same assessment was made at the Rio and Johannesburg summits. The implementation plan adopted at Johannesburg defines the eradication of poverty as the greatest and most important global challenge facing the world today and an essential precondition of sustainable development, especially in developing countries.

Global poverty and the distribution policies of rich, industrialised countries are very different things. While in the Nordic region the term 'poverty' may be applied in connection with specific population groups with incomes below the national average, or associated with certain social problems, the challenge from a global perspective is that a significant proportion of the world's population lives at or below subsistence level. In 2002, the Millennium Declaration was adopted by the UN. Its development goals, aimed at combating poverty, include the eradication of extreme poverty and hunger, universal primary education, achieving environmental sustainability, and combating HIV/AIDS, malaria and other communicable diseases. These goals represent an acknowledgement that poverty has economic, social, health and environmental implications.

Combating poverty is a high-priority issue in the Nordic countries. However, as development policy does not form part of the Nordic Council of Ministers' programme for Nordic cooperation, the Nordic countries' respective poverty reduction policies are not dealt with in the present strategy. For a more detailed discussion of the countries' development assistance policies readers are referred to the respective national action plans and strategies.

The legacy of the Rio and Johannesburg conferences is a growing recognition of the serious nature of transboundary and global environment problems. The transition to sustainable development in the Nordic Region should help to unite the primary forces

for change – globalisation and the development of a world community – behind concerns for the environment, welfare and common values. Forward-looking policies and resolute efforts based on the political and popular determination to effect a transition can drive development towards a sustainable society. There is a need to develop production and consumption patterns where in which economic growth is decoupled from further environmental impacts.

In addition, renewable natural resources must be utilised and protected efficiently within their capacity to renew themselves, i.e. the utilisation of renewable natural resources must not exceed their rate of regeneration in the long term; non-renewable natural resources must be utilised in such a way that natural ecocycles are safeguarded and renewable alternatives are developed and supported. By 2020 substantial results must have been achieved with regard to the most urgent problems. An early transition will ensure greater freedom and scope for action in the future, provided that forward-looking decisions are taken today.

1.4 Implementation and follow-up

Primary responsibility for following up the strategy's goals and initiatives rests with the governments of the Nordic countries. The strategy will be a key element in the formulation of national policies for sustainable development. Its implementation is predicated on the active participation of players at all levels, including local government authorities, the enterprise sector and NGOs.

The section on horizontal action areas in the revised strategy sets out long-term sustainable development goals for the period up to 2020, and goals and initiatives for the period up to 2008. The latter are designed to provide a basis for subsequent sub-strategies and action plans, and for the ongoing adaptation and transformation of the relevant sectors under the auspices of the Nordic Council of Ministers. A number of indicators have been developed as independent components of the strategy follow-up; these were compiled and presented in the spring of 2003 (for further details see Chapter 16).

PART 1 – HORIZONTAL ACTION AREAS

2. Sustainable production and consumption patterns

2.1 Introduction

“Fundamental changes in the way societies produce and consume are indispensable for achieving global sustainable development. All countries should promote sustainable consumption and production patterns, with the developed countries taking the lead ...”

(Plan of Implementation, adopted at the World Summit on Sustainable Development, Paragraph 13)

The consequences of unsustainable production and consumption patterns have long been recognised. A central concern of the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, the issue was addressed in the Rio Declaration and in Agenda 21 documents.

Paragraph 14 of the Johannesburg summit action plan states that efforts should be made to “encourage and promote the development of a 10-year framework of programmes in support of regional and national initiatives to accelerate the shift towards sustainable consumption and production.” All countries should take part, with developed nations taking the lead. It is vital that the richer nations, including the Nordic countries, lead the way with concrete initiatives and partnerships aimed at promoting more sustainable production and consumption patterns. The role of the Nordic countries must be to continue ‘greening’ consumption and production, and in so doing develop best practice in areas such as knowledge-building, dissemination of information, use of policy levers, and devising forms of collaboration between the actors involved. Achieving sustainable production and consumption patterns is a key policy goal for all Nordic countries. The enterprise sector has considerable influence on the way in which goods and services impact the environment throughout their life-cycles. A crucial aspect in this context is efficient resource utilisation in the production of goods and services. The production process and methods used by enterprises, and the emissions these give rise to, are other vital aspects. A third aspect is the environmental load created when products are used and finally scrapped. The fourth and probably most important aspect is what solutions consumers choose to satisfy their needs.

Continuous product renewal is essential if the enterprise sector in the Nordic region is to maintain its global competitiveness and contribute to economic growth. Ecological and social considerations must be integrated into this process if this development is to be sustainable. The Nordic countries are relatively well placed to integrate ecological con-

cerns in the renewal process. Nordic enterprises are also in the forefront of development as regards environmentally sound process and products, and environmental technology.

At the March 2003 EU summit meeting, the European Council declared that "pressing ahead with action in the environmental field remains as important as ever. This is an important factor for innovation and the introduction of new technologies, which lead to growth and employment. Environmental targets will work as a catalyst for innovation and modernisation in key sectors such as energy and transport, and promote new investments in clean and more resource-efficient technologies."

International environmental status reports, such as the OECD's *Environmental Outlook* and the European Environmental Agency's 3rd status report, point out that the overall rise in volumes of production and consumption in most areas exceeds efficiency improvements per unit produced, and there has therefore been no decrease in the overall impact on the environment. Forecasts suggest that this tendency is likely to continue, which underlines the urgent need for changes in production and consumption patterns.

A number of important EU initiatives aimed at speeding up the transition to sustainable production and consumption are in the pipeline. The EU Commission has presented – and adopted – a communication on integrated product policy (IPP). The policy seeks to support sustainable development by creating appropriate frameworks for continuous improvements to products throughout their life-cycle, and by focusing on and encouraging the supply of products with the greatest potential for environmental improvement.

Environmental technology is an important part of the EU 7th Environmental Action Programme, and an action plan on environmental technology has been presented. Efforts must be made to exploit the economic and environmental potential of innovation in the field of environmental technology. It is essential in this connection to promote closer interplay between publicly financed research and innovation in the private sector, and to remove market-based and other obstacles to the marketing and dissemination of environmentally sound technologies. Sectoral policies must be designed to support this process. Innovation in the environmental technology field is also a cost-effective strategy for achieving a range of environmental objectives.

There is broad consensus in the EU on the need to strengthen the Cardiff process, namely the integration of environmental concerns in sectoral policies, *inter alia* through the development of sector-specific objectives for decoupling, i.e. severing the link between economic growth and environmental disturbances.

Over the years, the Nordic countries have acquired valuable experience in their efforts to develop sustainable production and consumption patterns. At national level, the countries have focused on product-oriented environmental strategies and exchanges of experience regarding government policy levers such as environmental taxes and charges, eco-labelling and product declarations, green public procurement policies, taking environmental concerns into account during the product design stage, life-cycle analyses and environmental management systems.

The enterprise sector has a decisive role to play in the achievement of sustainable development goals and the establishment of sustainable production and consumption patterns. Continuous product renewal, with environmental and social concerns as key competitive criteria, is essential if the enterprise sector in the Nordic region is to maintain its global competitiveness.

Consumers also play a crucial role through their ability to influence supply and thereby support enterprises. Perhaps the most important player, however, is the government, whose role is to create conditions favourable for enterprises and consumers and thereby help them to promote sustainable production and consumption. The Nordic countries face a major challenge in disseminating the know-how and expertise built up over the years while maintaining their position at the forefront of development and continuing to seek an integrated strategy aimed at changing non-sustainable production and consumption patterns. EU efforts in this connection will be crucial.

2.2 Long-term goals

It is essential that value creation take place within a sustainable development framework. Economic development based on sustainable production and consumption patterns therefore emerges as an over-riding strategic objective. Efforts must be made to reduce the close connection in important areas between economic growth and severe environmental damage. The decoupling of serious environmental damage from economic growth is therefore central to the achievement of sustainable development. Important decoupling measures include structural changes aimed at making enterprises less environmentally harmful, more efficient resource and energy utilisation, use of less environmentally detrimental energy sources, and the development and use of more environment-friendly technology. Establishing conditions conducive to sustainable consumption involves sustainable community planning and a developed infrastructure, and will thus require the concerted efforts of all actors in society.

Between now and 2020 the Nordic countries will seek to achieve a transition to a more sustainable society, in which the connection between economic growth and greater environmental impact is weaker than at present. At global level, the Nordic region intends to lead the way in meeting the WSSD goal of changing unsustainable production and consumption patterns.

Measures in the environmental sphere aimed at achieving sustainable development must be cost-effective. To ensure a maximum return on investment in terms of benefit to the environment, all measures taken must be as efficient and effective as possible. This will help protect the environment and ensure that the community makes optimal use of our resources.

The Nordic countries must help promote a favourable climate for enterprises to develop, produce and dispose of cleaner products by stimulating the supply of and demand for such products and by removing obstacles to the marketing of environmentally sound and resource-efficient technologies. The growing globalisation of the marketplace is expected to continue. This presents the enterprise sector with major challenges and opportunities. It is vital that the Nordic business community is given every opportunity to take advantage of this development.

2.3 Principles

The Nordic Prime Ministers' 1998 declaration on a sustainable Nordic region states that "renewable natural resources must be utilised and protected efficiently within their capacity to renew themselves" and that "non-renewable natural resources must be utilised in such a way that natural ecocycles are safeguarded and renewable alternatives are developed and supported." (Paragraphs 5 and 6). Nordic efforts to promote sustainable production and consumption patterns are based on the following key principles.

- *Common but differentiated responsibility*

A central principle governing all UN-run sustainable development programmes and projects is that all the world's countries have a common, though differentiated, responsibility to combat the environmental problems besetting our planet. This is reflected in the fact that the rich countries, including the Nordic countries, which are primarily responsible for environmental problems like climate change, also dispose of the largest economic resources. However, the principle also dictates that no country, not even the poorest, may abstain from the responsibility to take environmental concerns into account.

- *Shared responsibility and common measures*

Everyone is required to contribute to the development of sustainable production and consumption patterns. The prerequisites of coordinated, effective participation by the business community, NGOs, central and local government authorities and individuals are a common recognition of the nature of the challenge, the willingness of all concerned to assume responsibility and the opportunity to do so. This presupposes maximum possible access by all to relevant information and effective dialogue between authorities and other players.

- *Ecosystem approaches*

Ecosystems such as forests, seas, coastal areas and fresh-water systems provide important functions and services. Our living standards are dependent on services such as water purification, soil improvement and protection against flooding. The functions of ecosystems must therefore be protected and the activities of society must not exceed the self-regulating capability of the natural environment, i.e. critical load levels on ecosystems.

- *The precautionary principle*

In essence, the precautionary principle states that scientific uncertainty is not in itself sufficient reason for not implementing measures to deal with environmental problems. The principle calls for a long-term perspective, as we will have to live with the consequences of irreversible change for a very long time.

- *The polluter-pays principle*

As its name suggests, the polluter-pays principle stipulates that the cost of environmental damage must be borne by the perpetrator. Putting a price on environmental benefits and pollution establishes a connection between the environment and the economy, a move in line with the notion that human welfare is central to sustainable development. Putting a price on pollution and making the polluter responsible for paying it will help the environment and reduce pollutant emissions at the lowest cost.

- *Coordinating policy areas*

Effective, goal-directed efforts to promote more sustainable production and consumption patterns require a cross-policy focus, policy integration at the various decision-making levels, integration of the relevant concerns into each sector, and policy levers to facilitate the above in a cost effective way. Efforts to integrate environmental considerations into sectoral policies must be intensified.

2.4 Policy levers

National policy levers are normally classified into three main groups: economic, administrative and information-related. In addition, international cooperation and research are central to the work of facilitating and promoting sustainable production and consumption patterns.

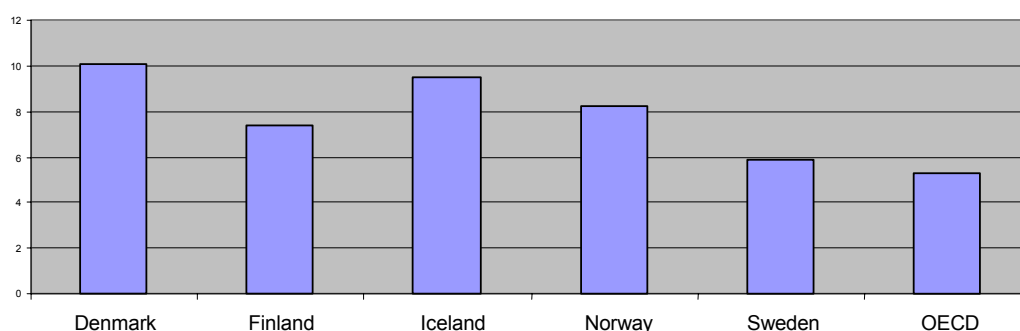
The OECD takes the view that many of today's environmental problems are best dealt with using a broad spectrum of instruments combined to ensure overall effectiveness. The organisation particularly recommends that environmentally harmful subsidies be phased out, that environmental taxes be applied more systematically, and that charges and other economic instruments be introduced to ensure correct pricing of the environment.

The Nordic countries attach particular importance to the following policy levers:

Economic policy levers

Economic policy instruments have been used in the Nordic countries (apart from the Faroe Islands) to achieve environmental goals since the end of the 1980s. Economic policy instruments are used by the Nordic countries to a greater extent than any other OECD state (see figure).

Revenue from environment-related taxes, percent of total revenue, 1998
(figures for Iceland from 1995)



Source: Environmentally Related Taxation in OECD Countries – Issues and Strategies, OECD (2001)

The use of economic policy levers puts a price on the environment. Examples of instruments used in connection with environmental policy in the Nordic countries include environmental taxes and charges, emission allowance trading and return systems. Economic instruments harness the full efficiency of price mechanisms where it is necessary to limit environmental damage, and ensure that the polluter-pays principle is put into practice. If economic instruments are put in place in such a way that all actors in the

economy must pay the same price for the same type of environmental damage, emission reductions will be effected by enterprises and households at the lowest possible cost. Thus the use of economic instruments is a way of achieving environmental goals at the lowest possible cost, i.e. cost-effectively.

Unlike direct regulation, such as minimum standards, etc., economic policy levers give those who conduct environmentally harmful activities a continuous incentive to reduce emissions and develop less environmentally harmful production methods and better emissions cleaning technologies. Economic instruments also help reduce environmental damage through their effect on relative prices as production costs tend to increase in enterprises that apply emission reducing measures and/or pay for their emissions. The costs are normally passed on to the consumer, which gives her/him the economic incentive to make less use of environmentally harmful products and more use of products that are relatively less detrimental.

As well as reducing environmental damage in a cost-effective way, the use of economic instruments generates revenue. If this revenue is used to reduce environmentally harmful taxes, the total cost to society of financing public sector consumption and investment will also decrease. Since the beginning of the 1990s, when Denmark, Finland, Norway and Sweden introduced environmental taxes, the 'green tax shift' has been accompanied by a reduction in earned income tax.

The success of environmental policies is often judged on the basis of changeovers to environmentally sound measures and the volume of environment-related taxes, charges and legislation. However, the effect on the environment of reducing the number and extent of measures to combat negative environmental impact can be just as favourable. In the Nordic countries, public measures designed to combat negative environmental impact are mainly to be found in the agricultural, transport and mining and manufacturing sectors.

Administrative policy levers

Examples of administrative policy levers include direct regulation of emissions and product content, etc., and agreements between government authorities, industries and enterprises on implementation of measures to reduce environmental damage. Various types of direct regulation through legislation are the most commonly used instruments. Laws on pollution and products and legislation relating to community planning, land use and building construction are of central importance in this connection. These statutes regulate key aspects of environmental and natural resource utilisation and can help safeguard environmental quality and access to environmental resources. Local government authorities often play a key role in implementing administrative instruments, e.g. in connection with waste collection and disposal.

Spatial-functional planning can be used as an instrument for coordinating socio-economic development by preventing environmental problems and protecting natural and cultural environments. The challenges facing planners include ensuring efficient use of limited land resources and contributing to balanced regional enterprise development and balanced utilisation of resources such as the countryside and the natural environment, soil, water and air.

Consumer pressure can be a powerful tool in the drive to change production and consumption patterns. Subjecting products and services – or the selling enterprise itself – to environmental, social and/or ethical demands, can give business enterprises whose op-

erations have a detrimental impact on the environment and society an incentive to reduce that impact.

Information

It is greatly hoped that information can shift consumer and producer attitudes in the direction of sustainability. Environmental information covers a wide range of areas, from relations of production, to transport, to the environmental consequences of product use, to the environmental impact of waste disposal. Information may also address the social aspects of sustainability. At present, the need for this type of information is being met only in part. Efforts must therefore be made to define more clearly needs, target groups and division of responsibilities among the actors involved. Major opportunities are also expected to result from efforts to further develop our knowledge of what can be achieved with the help of information, particularly at community and government agency level. Additionally, research in this area needs to be further developed, coordinated and more widely spread. The Nordic countries have been actively concerned with this issue for some time now – *inter alia* in connection with efforts to develop an integrated product policy – and are therefore well placed to gain experience of and further develop information tools.

Research and development

The bulk of research and development activity in the Nordic countries is undertaken in the private sector. Efforts to further develop public-private sector cooperation in this area are vital. Research into development issues, increased use of environmentally sound technology, scientific environmental research and the integration of a global perspective into research activities are all essential if the link between economic growth and environmental damage is to be weakened. International cooperation on research and development can increase the prospects of achieving results in areas where expertise and resources are shared among several countries. The Nordic countries have a long-standing tradition of research cooperation and contribute to international research programmes.

The Nordic region can be a significant contributor to the development of more environmentally sound technology in areas where the Nordic countries have special expertise. If instruments used in connection with environmental policy are clearly defined and of long-term effect, enterprises will find it profitable to develop and use environmentally sound technology.

The Nordic countries are far advanced in the information technology field. IT is a potentially powerful tool for promoting sustainable development. It can enhance the efficiency of production processes, transport systems and energy utilisation, and thereby help reduce environmental damage. It can also help to solve major problems in the health and medical care services, schools and social services. Exchanges of experience within the Nordic region aimed at strengthening the contribution of IT to sustainable ecological and social development should be initiated.

2.5 Goals and initiatives for 2005–2008

The governments

2.5.1 The Nordic governments intend to implement measures aimed at promoting and encouraging more sustainable production and consumption patterns. This cannot be achieved without effective cooperation between central and local government authorities, the business community and NGOs. Cooperation in turn presupposes active dialogue to develop the necessary climate.

2.5.2 The Nordic countries must make more use of economic policy levers, continue to cooperate with regard to their application in environmental policy-making, and assess the potential for closer coordination of these instruments under Nordic Council auspices. The Nordic countries are to evaluate proposals for a further cutback in and restructuring of government support measures that have detrimental effects on the environment. Meanwhile, cooperation on further development of methods for pricing nature's resources and the effects of ecosystem services will continue.

2.5.3 Nordic government authorities must exercise their ownership function, take environmental and ethical considerations clearly into account in all activities and financing operations, and seek to promote a sense of social responsibility in the enterprise sector.

2.5.4 The Nordic countries must seek to ensure that general public measures aimed at promoting research and innovation support the development, application and spread of environmental technology to a greater extent than at present, with a view to more efficient resource utilisation.

2.5.5 The Nordic countries intend to strengthen the sectoral integration of environmental concerns. The Nordic Council of Ministers will continue to develop methods to facilitate the fulfilment of each sector's responsibility for and contribution to sustainable development.

2.5.6 The Nordic countries intend to send out clear signals enjoining all central and local government entities to comply with sustainable consumption and production requirements. Green public procurement policies and environmental management systems are vital cooperation and action areas.

2.5.7 The Nordic Council of Ministers will develop guidelines for civil servants responsible for public procurement and a reference system designed to enable governments and local authorities to register and compare green procurement performance.

2.5.8 With regard to the development and distribution of tools, handbooks and courses as part of the help programme, Nordic cooperation should offer advantages of scale and opportunities to exchange knowledge, expertise and methodologies among the Nordic countries.

Local government

Responsibility for a significant share of public service provision rests with the Nordic countries' local government authorities. This gives them a unique contact interface with which to inform citizens and users about the need for more sustainable production and consumption patterns and how these can be achieved. Local councils also play a key role in developing services and bringing them into line with sustainable consumption and welfare choices.

They are additionally responsible within national frameworks for spatial planning and building. Their ability to exercise a constructive influence on the real estate and construction sector, which accounts for a major proportion of total energy consumption and waste production, gives them ample scope to plan efficiency enhancement measures in these areas.

Local voluntary associations often work closely with local authorities. Such organisations can be of considerable assistance when analyses or changes in the field need to be carried out. Their activities can incorporate a global perspective and bridges can be built between local communities in the Nordic region and less developed countries. Local authorities are also responsible for informing associations and supporting their activities where these can contribute to more sustainable production and consumption patterns. Organisation into a Local Agenda 21 (L21) process is often appropriate.

Small and medium-size enterprises often maintain close relations with their local councils and local inhabitants. Sustainable production and consumption patterns, with particular reference to areas relating to enterprise development and innovation, should be a feature of this dialogue.

The enterprise sector

The enterprise sector comprises many industries and businesses in a wide range of sectors, including mining and manufacturing, trade and the service sector. Given the close interaction between the industrial and service sectors and the ever-increasing importance of the latter, it is appropriate to treat the enterprise sector as a single entity in the context of the Nordic Strategy for Sustainable Development. Growing public awareness of environmental problems and concerns is encouraging Nordic businesses to face up to their environmental responsibilities. Environmentally driven business development is an important factor in the transition to sustainable development.

The enterprise sector designs, produces and markets goods and services and its impact on production and consumption patterns is considerable. While government authorities bear responsibility for establishing framework conditions for the adoption of sustainable production and consumption patterns by the enterprise sector, the latter is responsible for developing and introducing innovative solutions that can benefit from these conditions and secure for their authors sustainable competitive advantages now and in the future. This mutual dependence reflects mutual expectations. Given the general concern for and active involvement in environmental problems and social issues in the Nordic region, there should be a significant market for goods and services able to offer solutions to these problems. A sign of increasing recognition in the enterprise sector of the inherent potential of such synergies is the growing interest in the concept of corporate social responsibility (CSR).

In addition to the general initiatives set out above, the Nordic countries will seek to promote measures aimed at supporting efforts by the enterprise sector to bring about more sustainable production and consumption patterns.

2.5.9 Before 2008, the Nordic Council of Ministers will evaluate Nordic enterprise development support and investment measures within its sphere of responsibility in relation to their effect on production and consumption patterns.

2.5.10 The Nordic region is to strengthen cooperation aimed at disseminating tools that reinforce corporate commitment to environmental and social concerns, such as the UN

Global Compact, the OECD Guidelines for Multinational Enterprises, EMAS, ISO 14001 and Eco-Design.

2.5.11 Environmental and social concerns are having an growing impact on the strategies of investment funds. The collection of relevant information from enterprises is often a critical factor, however. Standardisation would help reduce administrative costs incurred by investors and enterprises. This is a global market and standardisation work should be undertaken at international level with Nordic influence and support. GRIP, the Norwegian Foundation for Sustainable Production and Consumption is a case in point. The Nordic countries plan to introduce mechanisms aimed at making development and innovation funds more accessible in order to facilitate the achievement of sustainable consumption and production goals. They will also present reports on experience gained from pension and public funds.

2.5.12 Product-related environmental information is often inefficiently communicated and lack of standardisation diminishes its usability. The Nordic countries intend to co-operate with the enterprise sector on the development and adoption of standards for the communication of relevant information.

2.5.13 The Nordic countries must strengthen enterprise sector initiatives to promote sustainable development through exchanges of experience. Efforts must focus on the principles embodied in the countries' integrated product policies, such as a life-cycle perspective, environmental management systems and eco-labelling. Particular attention should be focused on the need for know-how and expertise among small and medium-size enterprises.

2.5.14 Small enterprises in the Nordic countries are far more important to employment and the development of the enterprise sector than they are in many other European countries. Nordic cooperation provides excellent opportunities to develop effective working models for environmentally sound product development and environmentally driven business development, suitably adapted to the needs of small enterprises. These working models should not only be used in connection with environmental concerns; they are also applicable to the social dimension.

2.5.15 The Nordic Council of Ministers has been urged to assess the feasibility of developing a Nordic action plan for the promotion of environmental technology.

The enterprise sector is expected to take advantage of newly emerging opportunities in terms of product and production innovation by:

- actively contributing to dialogue with government authorities with a view to developing framework conditions for sustainable production and consumption,
- taking an active part in the design and implementation of research and innovation projects aimed at establishing more sustainable production and consumption patterns,
- ensuring that employees have the know-how and expertise with regard to the framework conditions, environmental technology and sustainable development needed for sustainable innovation,
- adapting management systems so that environmental and social considerations are taken into account,
- working closely with subcontractors to develop sustainable products and forms of cooperation, particularly with regard to transport and packaging,

- being aware of its ownership role and thereby exercising joint responsibility for the moral and public image aspects of investment and other activities, and
- offering its customers products and relevant information designed to give consumers the option of choosing sustainable consumption patterns.

The consumer

In the final analysis, it is the consumer's preferences that determine the production of goods and services. Minor changes in end-user behaviour can have a significant impact on the environment when the product's entire life-cycle is taken into account.

It is therefore vital that we focus on the role of the consumer. Many policy levers must be brought into play, including economic instruments capable of exerting a significant influence on consumption. In this connection, eco-labelling, e.g. with the Nordic Swan and EU Flower labels, can also help individual consumers to make more environmentally responsible choices. Consumers influence product development most when products are targeted at institutional customers (e.g. in the case of environmentally labelled copying paper) or when the matter is publicised in the media. This indicates the need for coordination if the cumulative impact of small consumers is to have an effect on the market.

Efforts to improve consumer information, e.g. eco-labelling, must be seen in a long-term perspective as the acquisition of new behaviour and consumer patterns takes time. As mentioned earlier, primary responsibility for ensuring that customers have access to reliable, intelligible product-related information rests with the enterprise sector. The Nordic countries support neutral, efficient, reliable information systems, including eco-labelling.

Examples from Norway

- 2004 saw the introduction of a new law broadening the right of Norwegian citizens to environmental information. The new information act gives all citizens the right to be informed by public authorities or private enterprises regarding conditions or developments of significance to the environment. If it is to function as intended, the act must be actively invoked by the public. It is intended to enable citizens to contribute to environmental protection, guard against health hazards and prevent damage to the environment, and bring influence to bear on decision-makers in the public and private sector.
- The Norwegian association of local authorities considers that local government authorities should use their potential for political action at local level to encourage sustainable practices.
- Miljøfyrtårn (Lighthouse of environment) is a simple environmental certification system designed for small enterprises. It was developed and put into operation by Kristiansand City Council in Norway. By November 2003, 176 local authorities and 561 businesses in 58 different industries were environmentally certified. (www.miljofyrtarn.no).
- The GRIP centre for sustainable production and consumption patterns was established by the Norwegian environment ministry to disseminate know-how, expertise and methods among public and private bodies. It is run by representatives from working life, the research community and NGOs and financed out of public funds and by fees for consultation, courses and commissions (www.grip.no).
- The Norwegian Product Information Bank will shortly become an internet database capable of generating machine-readable environmental information about products available to purchasers and users. This will enable them a) to choose more ecological and people-friendly alternatives, and b) to take suitable safety precautions when storing, using and disposing of products. The first version will be limited to chemical products.www.pib.no).

Tourism

The Nordic tourist industry is a significant contributor to the Nordic economy. In 2003, the figure for overnight stays in the Nordic region was approximately 112 million, of which 71.5 per cent were made by visitors from the Nordic countries themselves.

Trade and the hotel and restaurant business are the next largest sectors in the region in terms of number of employees.

However, tourism is associated with a number of negative effects which could pose a threat to the very environments, cultural as well as natural, that attract tourists. It is therefore vital that tourism in the Nordic region be developed in a way that will ensure long-term sustainability and benefit local communities as much as possible.

In 2001, a working party commissioned by the Nordic Council of Ministers drew up a report entitled Towards Sustainable Nordic Tourism. The report should be seen as the Nordic tourist industry's contribution to the region's overall strategy for sustainable development. An action plan, drawn up in the spring of 2003, proposed that roles and responsibility for implementation be divided among the Working Party on Tourism, national, regional and local organisations and the various national tourist councils.

Consensus has been reached on a number of goals and initiatives for the period 2005–2008 in connection with the implementation of the joint Nordic Action Plan for Sustainable Development. These include producing a common set of sustainability indicators to measure tourism development in the Nordic countries, highlighting the advantages of introducing environmental management systems for enterprises, and promoting knowledge and awareness among the local population of the importance of sustainability concerns to the development of the tourist industry.

Building construction and housing

A strategy for Nordic cooperation on the development of sustainable building and housing has been drawn up as part of the work of the Committee of Senior Officials on Building Construction and Housing. The strategy's overall goal is "to design, adapt and administer the built environment in cities, urban areas and local communities in such a way as to ensure a good, healthy and secure environment, promote sound, long-term management of land, water, energy and natural resources, and minimise environmental damage".

A number of sub-goals and proposals urging Nordic cooperation have also been drawn up. Examples of sub-goals include restricting the outward growth of cities, establishing environmentally sound building and road and rail transport structures that make economical use of resources, reducing disparities between residential areas in terms of living conditions, and developing ways of boosting individual participation in management processes and change. In areas where exchanges of experience could be of interest, attention is focused on research into the sustainable city, and collaboration on the development of a knowledge base on Nordic cities. www.norden.org/bygg/sk/

Examples from Norway

The real estate and building sector accounts for 40 per cent of the community's energy and material consumption, and 40 per cent of deposited waste is building waste. The sector also appropriates significant amounts of land. The goal of sustainable socio-economic development presupposes effective curbing of environmental damage arising from the activities of the property sector. The growth of real property consumption from already high levels is a serious obstacle to the achievement of environmental goals.

The Norwegian Ministry of Local Government and Regional Development will draw up its second environmental action plan in 2004. Efforts will be focused on the following areas: 1) more efficient use of urban development areas and increased concern for biological diversity, 2) bringing down energy consumption in the real property and building sector, 3) identifying and reducing the use of building materials hazardous to health and the environment, 4) quality and building methods, and 5) environmental management, operation and maintenance.

3. The social dimension

Over the years, the Nordic countries have placed considerable emphasis on social aspects in the economic development of the Nordic welfare model. They have sought to promote a number of fundamental values such as justice, equality, democracy, transparency and participation. One of the aims of the Nordic strategy is to make health, employment and gender equality an integral part of the goals and initiatives of the individual sectors. A basic goal of the revised version has been to attach greater importance to the economic and social dimensions of sustainable development. This means placing greater emphasis on social concerns in the broad sense – meaning labour market, working environment and social policy, social security, education, culture, gender equality and health matters – in a number of sectors.

In the following section, we look at three core areas in the social dimension vital to the continued sustainable development of the Nordic welfare model: demographic trends, public health and education. A basic assumption has been that gender equality is a key condition of sustainable development.

3.1 Population and welfare

Historical trends and common challenges

Historically, the welfare policies of the Nordic countries have been based on an economic policy of full employment and an active distribution policy aimed at redistributing incomes and resources. The Nordic model is distinguished by efficient labour markets with a high rate of labour force participation among women and men, a relatively balanced pay structure, a high degree of job security, good education, a low percentage of poor citizens, income-related social benefits and publicly financed welfare services extending to all citizens.

An ageing population

The Nordic population is ageing. We are living longer and staying healthy longer. The proportion of elderly inhabitants in the population is rising significantly while the proportion of younger citizens is declining. Over the next fifty years, the total number of inhabitants will gradually increase, most rapidly in Iceland, and at a slightly slower pace in Norway, Denmark and Sweden.

The low fertility rate is one cause of this demographic development. We are now starting families later in life, as the age at which both women and men have their first child is increasingly put back. Over the past 100 years, the average number of children per family in the Nordic region has declined from 4–5 to just under two. Sweden, with 1.5 children, has the lowest figure, while Iceland and the Faroe Islands have historically had higher fertility rates than the other Nordic countries. Forecasts for the period up to 2050 show a slight increase in childbirth rates for Denmark and Sweden.

Another cause of the demographic pattern is an increase in average life expectancy. Population forecasts indicate that this will rise by 3–5 years in the Nordic countries over the next fifty years. In Finland alone, 80-year-olds will triple in number and make up

more than 10 per cent of the population by 2050. In Greenland, a small rise in the number of inhabitants is anticipated, fertility is likely to show a slight decline and average life expectancy is expected to rise.

A shrinking workforce

Despite a relatively favourable rate of labour participation in the 55–60 age group, the Nordic countries will eventually have a steadily growing number of non-participants and a declining number of gainfully employed people. The proportion of younger and older members of the workforce is expected to rise, while the number of people aged 25–54 will gradually fall. In 2050, Finland, Norway and Sweden will have 2–2.5 gainfully employed people for each retired person, as compared to 3–4 people today. A trend shift can be expected in Sweden in 2008, when the large cohorts from the 1940s retire. A similar development can also be expected in Finland, Denmark and Norway.

Nordic forecasts point to modest growth in the labour supply in terms of hours worked. However, average labour supply per employee is expected to decline. Although the total population in Sweden grew by 14 per cent between 1965 and 2000, the labour rate in terms of hours worked fell by 2 per cent. The number of individuals in the core workforce is expected to be the same in 2020 as in 2003; given the same employment rate, attendance and working hours, no increase in the number of hours worked is anticipated. In Greenland, the potential workforce grew between 2000 and 2003 as the result of a change in the retirement age from 60 to 63.

The point at which young people become firmly established in the labour market has been delayed due to factors such as longer periods of education and greater emphasis on temporary employment. As a result, people are starting families and having children later in life. At least half of all Swedish women born in 1950 had given birth by the age of 25, while only one in four of women born in 1970 had become a mother by the age of 25.

Premature retirement on the increase

The employment rate among people aged 55 or over is higher in Norway and Sweden than in Denmark and Finland. In all the Nordic countries, labour participation is declining sharply among both women and men between the ages of 55–59 and 60–64.

Table 3.1 Number of people in employment aged 55–59, 60–64, and 65+ in 2002

Country	Women			Men			Women and men		
	55–59	60–64	65+	55–59	60–64	65+	55–59	60–64	65+
Denmark	73.1	24.8	2.5	85.7	45.0	8.2	79.5	35.4	5.0
Finland	71.8	25.0	2.5	71.1	30.1	6.2	71.4	27.6	4.1
Iceland	86.9	83.2	13.3	93.4	88.8	28.6	90.2	86.0	20.2
Norway	74.6	52.0	10.5	83.6	60.0	15.6	79.2	56.0	12.9
Sweden	79.7	53.7	5.7	84.7	60.8	14.7	82.2	57.3	9.9

Source: OECD

Paradoxically, while a growing number of people are staying healthy and continuing to work relatively late in life, more and more are leaving working life before normal retirement age. This is reflected in higher rates of absence due to illness and rising rates of early retirement. Illness-related absence has increased in all age groups in recent years, especially in Sweden and Norway. Swedish studies show that women have a signifi-

cantly higher rate of illness-related absence than men. The growing tendency to take early retirement has been noted in Sweden, Norway and Finland.

There is, however, no general, unequivocal explanation for why people are leaving working life early. Factors thought to affect illness-related absence and actual retirement age include the design of pension schemes, benefit levels in the social insurance system, the proportion of elderly people in the working age population, and increasingly tough demands at some workplaces.

In Denmark, the growing tendency to leave working life early is due in part to the fact that people who have turned 60 are entitled to retire and receive what is known as an 'afterwage'. Although the retirement age in Norway is 67, a large proportion of older employees retire early on disability pensions (agreement-based disability pensions, AFP) or sickness pensions. The latter are usually preceded by a lengthy period of illness. The low rate of labour participation among older employees in Finland is partially due to the pension system combined with a high chronic unemployment rate.

In Greenland, 1.8 per cent of people aged 15–34 and 6.8 per cent of the 35–54 age group have disability pensions. In all, some 2,500 people in a potential workforce of 27,000 have retired early on disability pensions. Although the causes of this high rate of premature retirement among people of working age have not been recorded, mental difficulties due to difficult conditions during childhood are thought to be a prime factor.

Welfare loss for certain groups

Despite economic growth in the 1990s, increased segregation in the labour market has led to a deterioration in living conditions for certain groups, especially in Sweden and Finland. Those primarily affected by this development are the chronically unemployed, single parents, young people, people from foreign backgrounds, and particularly vulnerable groups with multiple social and health problems. The percentage of people living in relative poverty and experiencing social exclusion in the Nordic countries, however, is among the lowest in the world. In some of the countries, however, low-income households have not improved their status despite the economic recovery of recent years.

In Greenland, as in other Arctic areas of the Nordic zone, marginalisation is increasing with some 40 per cent of the inhabitants of working age earning gross incomes below the minimum wage for unskilled labour. The unemployment rate in Greenland is 6.7 per cent. Among young people in the 20–24 age group, the rate is 8.4 per cent. Unemployment is highest among those with no occupational training, who make up 76.5 per cent of the jobless.

Children and young people are an important asset in the drive for sustainable development. There are significant generational differences in Sweden, Denmark and Finland. These are reflected *inter alia* in youth employment, which was relatively high in all the Nordic countries in the 1990s, with certain local variations. In 2001, Finland, at 20 per cent, had the highest rate of unemployment among young people aged 16–24. In Sweden, the percentage of employed people was lowest among those aged 16–25 (47 per cent in 2002), primarily because an increasing number were choosing to continue their studies. Later and less secure income has meant that living standards for the young generation are not improving at the same rate as for the older generation.

The average rate of unemployment among foreign citizens in the Nordic countries is between one-and-a-half and three times as large as the rate for other sections of the

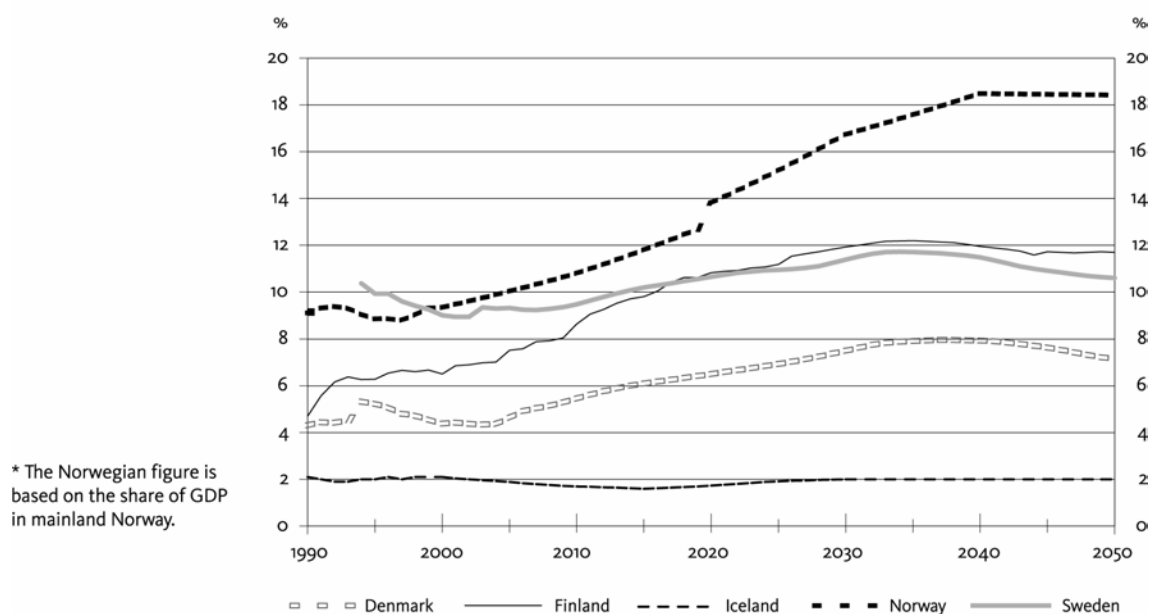
population. Statistics from Sweden, Finland, Denmark and Norway show that people from non-European countries tend to be over-represented in less skilled occupations.

In all the Nordic countries except Iceland and Norway, people have become increasingly dependent on social security, particularly single parents with children, whose situation has deteriorated compared with that of older couples without children. There is a lack of reliable Nordic statistics on children at risk. Reports from Denmark that such children are mainly to be found in socially vulnerable families are grounds for serious concern from the sustainable development standpoint.

A burden on public finances

Demographic trends in the Nordic countries threaten to increase the pressure on public finances. About a quarter of current public expenditure is age-related, i.e. goes on financing childcare, school services, pensions and social services for the elderly. Expenditure on pensions as a proportion of GDP is expected to increase in all the Nordic countries over the next 40 years, albeit at different rates. An ageing population will also put pressure on medical care and welfare services.

Figure 3.1 Pension-related expenditure, % of GDP



Source: Tomorrow's Nordic Welfare Society (*Det framtida nordiska välfärdssamhället, Nord 2003:12*)

During 1990–2000, social expenditure in the Nordic countries – with the exception of Iceland – totalled between 25 and 34 per cent of GDP, although a slight decrease was recorded towards the end of the period, especially in Sweden and Norway. In Iceland, however, social expenditure rose over the period from a lower initial level. Greenland has a comparatively large group of low-income families dependent for support on social benefits, a barter economy and the occasional wage. Unemployment is present among the unskilled, but hardly exists among people with qualifications.

In time, the current trend among people in the Nordic countries to put off getting established in working life, combined with absence from the labour market due to chronic unemployment, increasing rates of illness-related absence and premature retirement, will lead to slower economic growth and a smaller tax base.

In Greenland, overall public expenditure accounts for almost 80 per cent of GDP. Social spending accounts for 20 per cent.

If economic efficiency in the Nordic countries is to increase, vigorous measures must be taken to boost labour supply and improve access to the labour market for certain groups. The activation and skills-enhancement principle must be fully implemented in all employment and social policies.

Greater accessibility

An accessible society is created by means of general measures, as a natural outcome of product design, architecture, community planning and service provision. We should always strive for solutions that are available to as many citizens as possible, so as to reduce the need for special arrangements and retroactive adaptive measures. This is also a more sustainable strategy in production terms. The basic assumption of the Design for All approach is that all planning takes into account human diversity and the fact that people's physical capabilities vary, not only from individual to individual but also at various points in a person's life. Thus every sector of society should seek to shape and conduct its activities in such a way that they are accessible to all citizens, including those with disabilities. This strategy is in line with UN standard rules on equal opportunity for people with disabilities, and with EU recommendations in this area. Work is currently under way to develop a Nordic platform for the promotion of Design for All. The platform is intended to lead to action by the Nordic Council of Ministers and the further development of national objectives and initiatives in this sphere.

3.2 Public health and lifestyle issues

Public health and sustainable development

Public health concerns are relevant to all three dimensions of sustainable development. Public health is contingent on the ability to deal successfully with the interplay between the physical, economic and social environments. Sound community development presupposes a population in good health. Efforts to promote and improve public health are therefore of crucial importance to community development, and a self-evident component of the drive for sustainable development. Providing opportunities for cultural experience is an important part of public health work.

Hitherto, public health work has been more concerned with eliminating risk factors than emphasising the positive aspects, i.e. building up people's own resources. A sound, healthy environment is essential to good health. To date, efforts have largely focused on important environmental conditions such as air and water pollution, waste, noise, environmental toxins and the like. These action areas will continue to be vital, but we should also focus more on aspects of the physical environment that can yield gains and enhance human capacity in everyday life. Examples include contact with the natural environment, open-air activities, objects of cultural-historical value and our cultural heritage.

Opportunities to experience the natural environment and enjoy outdoor life and recreation in one's immediate vicinity also play a significant part in maintaining public health and welfare.

From being concerned primarily with lifestyle-related issues, Nordic efforts in the public health field have over the years come to encompass issues of a more general and structural nature, and to focus increasingly on factors that affect people's health/ill-

health rather than on public health outcomes. In all of the Nordic countries, preventive efforts to promote health/combat negative health ratings contribute to stronger growth, lower healthcare costs and better health for the bulk of the population.

Adverse health trends, whether due to impaired structural factors or lifestyle-related changes, have repercussions for society as a whole in the form of higher illness-related absence rates, a higher number of disability pensions, need for costly rehabilitation, etc. The costs in economic terms of ill-health are substantial, involving both direct care costs and indirect costs for production losses, disability pensions and sickness benefits.

Good health on equal terms

Ill-health in society is largely a function of people's circumstances and lifestyles. Differences in working conditions, family situations, social relations and economic assets all contribute to an uneven balance of health and ill-health in the population. Differences in lifestyle explain many of the class-based disparities in health.

Drug, tobacco and alcohol abuse, bad diet, lack of physical activity, etc. are often linked to economic and social vulnerability and may not only have disastrous consequences for individuals and their families but also create problems for the community at large. Ill-health, whether lifestyle-related or structurally conditioned, presents a major challenge to social and economic sustainability throughout the welfare system.

Measures to improve public health are thus a public concern. In the longer term, re-dressing the health balance, where feasible, will require initiatives aimed at improving conditions for children in their formative years, encouraging healthy lifestyles, promoting the development of social networks and strengthening preventive efforts to improve the working environment and combat exclusion.

3.3 Implemented measures

The Nordic region

- The Welfare Research Programme, which seeks to identify areas in which the Nordic welfare model needs updating and adapting to new working life and family patterns
- The Nordic social partnership programme (*Social og Helse, 2001-2005*)
- Work under the auspices of NOMESO/NOSOSCO aimed at compiling sustainable social and health indicators for the Nordic countries.
- The Nordic Design for All strategy: universal design aimed at improving accessibility for disabled people by considering their needs at the design, architectural, planning and service provision stage.
- The Northern Dimension Partnership for Public Health and Social Wellbeing, part of the Second Northern Dimension Action Plan (2004–2006). The Partnership was adopted by the Nordic Council of Ministers in October 2003 and seeks to encourage sustainable development in the Northern Dimension by improving health and social wellbeing.
- Social concerns dealt with as part of the Nordic Council of Ministers' Adjacent Areas Programme, including 'Welfare Development in the Arctic'.

National examples

Denmark – Measures to counter negative social inheritance

The children of parents in socially vulnerable situations – chronic unemployment, economic distress, criminality, mental illness, alcoholism or drug abuse – are marked by their home environment and risk ‘inheriting’ their parents’ social status and problems.

Between 1970 and 2003, the proportion of children exposed to this negative social inheritance in Denmark has remained unchanged. Ten per cent of all children aged 3–5 grow up in families with social liabilities. Efforts to improve the situation of families and children at risk have been stepped up over the years. A number of supportive and targeted measures have been introduced under the Nordic welfare systems. However, creating the kinds of conditions that would allow children at risk to live full, normal lives has proved difficult, and the desired results have not been achieved. Ultimately, this situation will become untenable.

In light of this, the Danish government has developed a strategy aimed at countering negative social inheritance. The strategy is in three parts: a clearer division of responsibilities, skills enhancement for children, and intervention at an early stage.

Finland: Welfare at work for better work capacity and better pensions

*** The Veto Programme, 2003**

This is a new programme launched by the Ministry of Social Affairs and Health, aimed at maintaining and promoting the attractiveness of work and working life in Finland and at improving individual working and acting capacity among people of productive age. The programme also seeks to prevent premature work incapacity, enhance wellbeing at work and extend working life. A further aim is to improve opportunities for combining work, family life and recreation, and thereby promote gender equality

*** New labour safety law**

The new Labour Safety Act, adopted in 2003, includes provisions on mental and physical strain at work, ergonomics, exposure to violence, harassment, unfair treatment and single work, besides traditional concerns such as safety precautions at work relating to machinery and equipment and the prevention of accidents and occupational injuries.

The new law emphasises the duty of the employer to identify and assess risks relating to or arising at work. It also includes provisions on the duties and obligations of employees. Employees are required to cooperate in promoting both their own safety and that of their co-workers by whatever means available.

The new law further clarifies the division of responsibilities in cases where a number of employers or entrepreneurs share the same workplace. The provisions concerning a shared workplace are applicable at all such places, regardless of the type of business.

*** Amendments to pensions legislation, 2003**

The aim of the new Pensions Act adopted in 2003 is to strengthen the sustainability of the national work pension scheme so that it corresponds to the changes in working life and to the new situation which has arisen as a result of Finland’s ageing population. The system will be both fairer and more transparent than previously when it comes to calculating a wage-earner’s pension cover. The pension amount will be related to the person’s earnings throughout his or her working life. The retirement age has been made more flexible, thus improving pension cover for those who intend to retire later.

In the case of wage-earners or entrepreneurs who remain at work after the age of 63, the retirement pension will increase until the person reaches the age of 68. Pension entitlement will be counted from the age of 18. When the insured person has reached the age of 53, the increment rate will rise. These amendments will enter into force on 1 January 2005.

The Faroe Islands

‘Our Life in Old Age’ is a joint project involving the Faroe Islands Association of Local Authorities and the municipal councils of Bodø in Norway and Luleå in Sweden. The project is partly financed by the Northern Periphery Programme (NPP).

Its aim to prepare each partner region for future tasks and challenges in the elderly care sector. The common challenges include dealing with a comparatively fast-growing group of senior citizens, a scattered population and a relatively large exodus of inhabitants in younger age brackets.

The project will seek to meet future challenges in the elderly care sector by:

- developing methods and planning tools that strengthen family and local community involvement in this area, thereby utilising the natural resources of the northern periphery, and
- developing partnerships between rural and urban areas as a means of solving future problems in this sphere, inter alia with the aid of telemedicine.

One of the goals is for elderly people to be able to continue living in their local environment (their own homes) for as long as possible. This is to be achieved by:

- preserving as many northern periphery workplaces as possible in the elderly care sector, and
- preserving traditional workplaces for women in the northern periphery, thus indirectly strengthening the regions’ chances of survival.

The project was launched on 1 January 2004 and will end on 31 December 2006.

Brief description of the Ordinance on Teaching Assistants for Adults in the Faroe Islands

Over the past 10-15 years, it has become increasingly necessary to provide support to adults with disabilities in the form of trained resource staff. While such measures may have a variety of purposes, they allow disabled adults to live at home or with relatives and are thus an alternative to institutionalisation.

The Ordinance on Teaching Assistants for Adults was accordingly approved in the Faroe Islands on 1 January 2003.

The legislation targets people aged 18–66 with mental or physical disabilities who live at home. The overall purpose in providing this support is to enhance the opportunities of people in this group to lead active, independent lives.

They are offered different forms of socio-educational support and guidance and, in certain cases, personal care and supervision for as many hours a week as may be required.

The ordinance lays down the procedures for dealing with new applications, hiring staff and coordinating support initiatives. The recipients of these services are located all over the country and the actual support activities are based in their homes.

Greenland

Over the next five years, Greenland will be implementing an extensive programme entitled ‘The Child in the Centre’. This will focus on children, young people and families and feature preventive, health-promoting and remedial activities and the treatment of damaged children and adolescents. Based on the needs of the children themselves, the primary measures will largely comprise informational activities, training and education for staff in the child and youth sector, and legislation on behalf of children and young people.

Efforts to make the Greenland economy more self-sufficient and develop social welfare are hampered by the lack of requisite skills in the workforce and by tendencies to marginalisation in the working population itself. Legislative initiatives have therefore been taken to establish careers guidance and introduction centres to counter unemployment more efficiently, especially among the young, and to enhance workforce skills and thus economic mobility in general.

The Icelandic pension system

The Icelandic pension system is one of the more privately-oriented systems in the Nordic area. Iceland also has a favourable age pyramid and is one of the few countries in the world with a high proportion of gainfully employed.

All employees in Iceland are required to contribute a part of their income to an approved pension fund. This contribution normally amounts to 10 per cent of a person's gross income, and payment is divided between the employer, who pays 6 per cent, and the employee, who pays 4 per cent. Businesses can deduct their share as an operating expense. The 4 per cent paid by the employee is also tax deductible.

In addition to this mandatory contribution to the pension fund, employees can pay in a tax-deductible contribution of up to 4 per cent, of which the employer is required to pay 0.4 per cent, on condition that this contribution is paid on a regular basis. Employers are compensated for this additional contribution through a corresponding reduction in their social costs. The Icelandic pension system has been highly successful, and the various pension funds are financially sound. The strength of the system lies in its pay-as-you-go principle, under which people earn their pension points throughout their working lives by means of cash contributions, in contrast to systems where those in work pay the pensions of those who have stopped working. The advantage of this approach is that the Icelandic system will not run into difficulties when the workforce diminishes and the proportion of pensioners increases.

Norway – Action Plan Against Poverty

In 2002, the Norwegian government presented an Action Plan Against Poverty (St.meld. nr. 6 , 2002-2003). The plan includes measures targeting the minority of single householders living in poverty aimed at eliminating the causes and risk factors behind permanent low-income situations and social distress. The main strategies for poverty alleviation are to create conditions in which more people are able to support themselves through their own work, to make the welfare system more goal-oriented and to promote social cohesion, especially among children and young people. The programme includes job-oriented measures on behalf of long-term recipients of social assistance and immigrants, vigorous follow-up services for the homeless, a wider range of treatments available to drug addicts, and targeted improvements in support measures on behalf of single providers, vulnerable families with children and other groups at risk. To supplement its environmental measures, the government plans to step up action in the universal welfare sphere with a view to preventing poverty and rescuing people from it. Norway is taking part in the EU Action Programme to Combat Social Exclusion, which aims to enhance cooperation in this area among member states.

Sweden – The new pension system

In 1998, the Swedish Riksdag adopted a new pension system based on an agreement between five political parties. The new system has been introduced gradually and became fully operational from January 2003. An important aim of this reform was to create a retirement pension system that is both stable and responsive to economic and demographic change.

The pension system is a distributive system under which the contributions paid in during a particular year finance that year's payout, and income is redistributed from the gainfully employed to the retired generation. The system is a flexible one and allows for staged withdrawal from the workforce from the age of 61.

The basic principle is that all pension contributions paid into the system – the annual contribution is 18.5 per cent of pay – are to yield the same amount in pension entitlement. All time spent in gainful employment is counted. The new system also gives employed people a greater incentive to work longer; the longer they wait before drawing their pension, the larger it will be.

The social dimension – Åland

Average life expectancy for the population as a whole in 2002 (ÅSUB) was 81.8 years (79.2 for men, 84.4 for women). Some 300 children are born every year (315 p.a. in the 1990s). On 1 January 2003, there were 5,720 children in Åland. Their share of the total population of 26,257 was 22 per cent. In 2002 there were 2,236 people aged 75 or over.

Open unemployment in Åland stands at 2 per cent. In 2002, a total of 499 households (747 people) were granted subsistence allowances (Stakes, Socialskydd 2003:4). Of these, 12.3 per cent were single providers with children, while 45.3 per cent were single men and 31.7 per cent single women.

Non-institutional child protection services provide support and assistance to 3.2 per cent of all children in Åland (2001). In the same year, the authorities placed 0.7 per cent of all children outside the home. The Tallbacken emergency centre for children and women has six beds. In all, 33 women and children sought refuge there for a total of 1,906 days in 2001.

Gender equality

Taxation and income statistics from Åland show that more men than women are to be found in the upper income brackets while a larger proportion of women occupy the lower brackets. This applies both to earned income and income from capital. The proportion of women earning above € 50,000 p.a. is 9.8 per cent. The corresponding figure for men is 90.2 per cent. The proportion of women in the € 35,000–49,999 income bracket is 26.0 per cent. The figure for men is 74 per cent. The 961-strong university student population in Åland in 2002-2003 comprised 545 women and 416 men.

3.4 Long-term goals

The overall long-term goal is to ensure further development of the Nordic welfare model by:

- actively seeking to boost employment and maintain an abundant supply of labour in all work categories
- promoting gender equality and participation in working life
- preventing poverty and social exclusion
- seeking to improve opportunities for combining working life and family life
- promoting the development of a sustainable working life
- promoting access for people with disabilities both at the workplace and in the community at large
- designing tax and benefit systems that encourage work
- safeguarding financially and socially sustainable pensions and high-quality welfare services
- seeking to create the social conditions necessary for good health on equal terms
- increasing cultural commitment and participation in cultural activities in close dialogue with people active in cultural life.

3.5 Goals and initiatives for 2005–2008

The Nordic countries want to:

3.5.1 Strengthen Nordic influence in the EU/EEA and the Lisbon process

This will be achieved by selecting a number of areas of concern for the relevant period in which the Nordic countries share common interests and where any joint Nordic action would add significant value and move matters forward. Examples include drawing on the work currently under way in the above-mentioned programmes initiated by the Nordic countries concerning welfare research and social partnership, and under the Baltic 21 Education agreement and the Northern Dimension Partnership for Public Health and Social Wellbeing.

3.5.2. Ensure that the results of the Nordic Welfare Research Programme are disseminated, discussed and applied both in the Nordic region and outside it

As part of its focus on results, interaction and discussion, the Welfare Research Programme will be arranging a mid-term conference in March 2004. The aim of the meeting is to determine the status of the research projects under way and encourage further debate during the final part of the project period. Both the Nordic ministers for health and social affairs and the Nordic Committee of Senior Officials have stressed the importance of presenting the results of the research programme in such a way that they reach as many people as possible. To this end, a concluding conference is planned for 2006.

3.5.3 Give concrete form to the strategy for closer cooperation on Design for All, a universal design programme for the Nordic area

The Committee of Senior Officials for Health and Social Welfare has begun work on an action plan to develop its Design for All strategy. The emphasis is on cross-sectoral participation and the work is linked to the sustainable development strategy. The action plan will be completed in 2004. This is a long-term process involving cooperation between many different sectors of society. The basic message is that an accessible society can be created through the introduction of general design initiatives that reduce the need for specialist solutions and retroactive adaptive measures.

3.5.4 Actively follow up the declaration from the WHO ministerial conference, Children's Environment and Health Action Plan for Europe, Budapest (June 2004), in cooperation with the Nordic Council of Ministers

In this connection, the Nordic community can exploit each country's comparative advantages in pursuit of proactive development in Eastern Europe and in the adjacent areas. This endeavour can be linked to Nordic cooperation in the health and social welfare sector, and also to the strategy development work under way in the fields of sustainable development and Design for All.

3.5.5 Follow up ongoing work on the EU Northern Dimension Partnership in Public Health and Social Wellbeing

This new partnership is an important part of the framework for health and social welfare undertakings in the surrounding region. Emphasis is being placed on coordination and enhanced social benefit through cross-sectoral cooperation, primarily in the drugs and gender equality fields. The 2003 Oslo Declaration lays down the general framework for this initiative, and the Nordic Council of Ministers is taking an active part in the Committee of Senior Representatives (CSR) to help improve cooperation at all relevant levels, including cooperation between international organisations besides the Nordic Council that are actively involved in projects and programmes. The overall aims of the partnership will have an impact on future Nordic Council activities, particularly in North-west Russia.

3.6 Education and research

Education and research – a precondition of sustainable development

The action plan from the 2002 Johannesburg summit strongly emphasises the importance of education for sustainable development. The decision of the UN General Assembly in December of that year to declare 2005–2014 a Decade for Education for Sus-

tainable Development reflected the expectations of the international community that member states would treat the issue with the utmost seriousness.

The need for regional and sub-regional cooperation in pursuit of the goals was given particular emphasis at the Johannesburg summit. In addition, all three dimensions of sustainable development – economic, social and environmental – were clearly defined. According to the interpretation given, sustainable development involves working for closer integration of education and research on democracy, human rights and health with education and research on the environment. This also makes it easier and more natural to apply an interdisciplinary approach when providing education for sustainable development.

The benefits of education are considerable, for the individual and for society as a whole. It enables the individual to improve his/her quality of life and working conditions. For society, it holds out the promise of economic growth and the development of common basic values that underpin social cohesion. The Nordic countries will have to demonstrate their ability to think in new ways and pursue innovation if they wish to achieve a more sustainable future. The emphasis on education and research is crucial to this objective. A highly educated workforce is not only in a better position to develop its capabilities; it is also open to change and better equipped to learn new skills. The way in which human resources are used and encouraged is therefore of paramount importance to sustainable development. Thus generally speaking, education and research are crucial to this objective, and therefore constitute a vital Nordic action area.

The level of education in all the Nordic countries is high by international standards. The table below shows the proportion of people aged 25–64 with university-level qualifications compared to the OECD average.

Table 3.2 Level of education, i.e. the proportion of the Nordic population aged 25–64 with university-level education

	Dk	Fi	Ice	Nor	Sw	OECD country mean
Men	24	29	24	28	30	24
Women 29	36	25	29	34	22	
Total	27	33	25	29	32	23

Source: Education at a Glance 2002

Strengthening education and research for sustainable development in the Nordic region

In their 1998 declaration on a Sustainable Nordic Region, the Nordic prime ministers stated that “a high degree of awareness concerning the measures and processes leading to sustainable development must be created in society”. Education and research are of the utmost importance in pursuit of this objective, and the Nordic area has every chance of becoming a model region in this respect.

In order to strengthen Nordic cooperation in this sphere, the responsible ministers have given education for sustainable development a prominent place on the agenda.

Particular emphasis should be placed on the education of children and young people and on the development of joint Nordic educational aids in each respective language. Electronic forums (portals) must also be developed as a matter of priority, as they can help integrate sustainable development into school tuition at various age levels and help to

showcase Nordic efforts in this sphere. This in turn will help give future citizens and opinion-makers a sound grasp of sustainable development issues.

Baltic 21 Education, the agreement between the Nordic ministers for education and research and their counterparts in other countries within the framework of Baltic Sea co-operation, provides a promising basis for Nordic efforts to comply with the decisions taken in Johannesburg. A Statement on Education for Sustainable Development was adopted at a meeting of environment ministers in Kiev in May 2003, organised by the UN Economic Commission for Europe (UNECE). This provided further affirmation of the importance of education, over and above the statement in the UNECE Aarhus (Århus) Convention of 1998. In their Kiev statement, the ministers called for a realignment of environmental education towards education for sustainable development.

A meeting in Luleå in August 2003 between the Nordic environment ministers and their counterparts in the Baltic Sea region expressed support for education for sustainable development as a key means of achieving sustainable production and consumption patterns.

Large parts of the implementation plan adopted at the Johannesburg summit are closely concerned with research. Efforts to promote sustainable development must be supported by scientifically based knowledge. The Plan of Implementation from Johannesburg particularly emphasises the importance of capacity building in and cooperation with the developing countries, of interdisciplinary research and of cooperation between researchers and the rest of society.

Advanced knowledge is indispensable as a basis for the strategic choices that have to be made in society and for an accurate assessment of the impact different courses of action will have. One of the cornerstones of sustainable development is the development of new environmentally appropriate technology. Progress is particularly important in the field of energy and resource conservation. Progress in achieving efficient energy and resource utilisation is particularly important.

Lifelong learning for sustainable development

There are ample opportunities for lifelong learning in the Nordic region. But opportunities, however abundant, are not enough. For the individual, learning about the need for sustainable development, and learning how to act on this insight, is a lifelong process. A sustainable development perspective must therefore be mainstreamed into education and education policy at all levels, from pre-schools to higher education and adult education. The aim must be to bring together the economic, social and environmental dimensions of sustainable development. Such a perspective must therefore be incorporated into education policy documents, and teachers must acquire the skills needed to bring sustainable development into the classroom.

Education for sustainable development can only succeed, however, if teachers, pupils and students at each individual school and institution draw on their creativity and commitment in a joint endeavour to achieve the goal of mainstreaming a sustainable development perspective into all learning. The work of preparing Baltic 21 Education showed the need for further training among active teachers and the need for professional development among other staff.

New knowledge, insights and skills in many occupations are vital to the task of re-directing our society towards a sustainable future. There is a great deal of expertise in this area that has not until now been included in training programmes for these profes-

sions. The development of new knowledge and the introduction of new skills that add substance to the concept of sustainable development will be in constant demand in the future. As noted earlier, further training will play a crucial part in helping relevant staff upgrade their knowledge and skills and acquire the new expertise that will be needed.

Cooperation involving the business sector, upper secondary and vocational education, and institutions of higher education will also be needed to ensure that professional skills are adequately and regularly updated and based on scientific knowledge and practical know-how.

Programmes and initiatives implemented in the education and research field

- Environmental education is well established in the Nordic countries. Joint Nordic efforts in this field were launched in 1974. These were focused on developing skills among resource staff and producing appropriate educational aids. This programme led in 1991 to the launch of a new project, Environmental Education in the Nordic Countries (MUVIN), which focused on conflicts of interest in the use of natural resources, intersectoral cooperation, and cooperation between schools, both locally and between the Nordic countries.
- Baltic 21 Education: In January 2002, the ministers for education and research in the Nordic countries and the countries on the Baltic Sea reached agreement on an Agenda 21 programme for education in the region. The agreement incorporates the overall goals of the education programme, its various parts, and an action plan. A central aim of the programme is to mainstream a sustainable development perspective into the Nordic countries' education systems.
- The Baltic Sea Project (BSP) was launched in 1989 against the background of the acute environmental problems developing in the Baltic. In terms of method, the project seeks to strike a balance between an integrated, holistic view and specific subject studies, to give students a more active, creative role, and to transform the role of the teacher into that of a personal supervisor or guide. A further aim is to give networks and international partnerships a more prominent role in school work. Special method books, Learners' Guides, have been produced to help implement these educational approaches. Five such books have been published so far.
- The Nordic Council of Ministers conference, Education for Sustainable Development was held in Karlskrona on 12–13 July 2003. Its aim was to strengthen education for sustainable development in the Nordic education systems. A report on this conference was distributed to schools and universities in the Nordic countries and around the Baltic Sea.
- Three conferences were sponsored by the Nordic Council of Ministers: one in Latvia for adult education specialists, one in Lithuania for Baltic teacher-training staff, and one in St Petersburg for trainers at various educational levels in Northwest Russia.
- The adult education system has been an active partner in the development of local Agenda 21 programmes throughout the Nordic area. Adult education colleges and adult education associations have developed project activities of their own in collaboration with NGOs in the Nordic area and surrounding regions.
- In the Nordic countries, researchers and people in the field are working together in networks to strengthen education for sustainable development through exchanges of ideas and experience.
- The Nordic ministers for education and research, along with the Nordic ministers for industry, employment and communications, have embarked on a reform process focused on future cooperation on research and innovation.

- By stepping up joint research efforts, the Nordic countries can develop strategic R&D areas and gather enough resources for truly significant contributions to global development. There is considerable scope within this process for launching Nordic initiatives focused on research into sustainable development. This type of cooperation has already proved its worth with the successful creation of Nordic Centres of Excellence as part of the Global Change programme. It could thus serve as a model for further research efforts in the sustainable development field.

Long-term goals

The overall long-term goal should be to ensure the further development of the Nordic welfare model by promoting education for sustainable development through lifelong learning.

The aim of educational efforts in this field must be to equip all individuals with skills which help bring about the kind of development in society that will allow the present generation to satisfy its needs while still enabling future generations to satisfy theirs:

This means that:

- Pre-schools, compulsory schools and upper-secondary schools must seek to ensure that all pupils acquire the competence, values and skills they need in order to become active, democratic and responsible citizens capable of reaching their own decisions and of participating in decision-making at various community levels with a view to creating a sustainable society.
- Students who have completed their higher education programmes must have acquired the skills and know-how relevant to their future working life and their roles as decision-makers.
- Higher education must also play an active part, locally, nationally and internationally, in promoting knowledge and the ability to actively support sustainable development, by engaging in research and education in collaboration with the community at large.
- Adult education must equip individuals with the means to manage their lives, to take an active part in social development and to be aware of the imperatives of sustainable development.

This presupposes that laws, ordinances, curricula and syllabuses incorporate a sustainable development perspective and that teachers are properly equipped to integrate sustainable development into their work.

Goals and initiatives for 2005–2008

The overall goal for the period should be to further develop the Nordic welfare model by promoting the integration of education for sustainable development into the Nordic education systems through lifelong learning.

This aim can be achieved by fostering a closer understanding of the issues among citizens and strengthening their ability to act, which involves:

- Promoting professional development for people working in the Nordic education systems, including activities that make officials, school heads and other staff more aware of sustainable development issues.
- Seeking to ensure that further education on sustainability issues is available to the working population, and developing strategies for the introduction of knowledge and skills relating to sustainable development into planning, management, construction and production in all areas of society.

- Encouraging collaboration between Nordic researchers and people in the field with a view to strengthening education for sustainable development.
- Providing opportunities for the joint production of educational materials and forums by coordinating and supporting suitable Nordic-sponsored projects. These should be based on the languages and school years of each country, and give Nordic children the opportunity to communicate and discuss sustainable development via electronic media.

4. Climate change and atmospheric pollution

Climate change is regarded as the most important environmental problem facing the world today and perhaps the most serious threat to sustainable development. Many regard it as the pivotal global challenge of the present century. Moreover, according to the third assessment report by the Intergovernmental Panel on Climate Change (IPCC), the changes already observed have impacted many physical and biological systems around the world. In recent years, many regions of the globe have experienced heat waves, floods, drought and storms; as world temperatures rise over the next hundred years, these extreme weather phenomena are expected to increase in strength and frequency. Climate change can have fatal consequences for individual plant and animal species and entire ecosystems. Industries such as agriculture, forestry, energy and fishing are vulnerable to climate change with its potentially destructive effect on biological diversity. The Arctic regions are particularly vulnerable to climatic change. Moreover, there is considerable evidence to suggest that many of its effects will appear there first.

Air pollution is carried over national borders. Emissions in one country can damage ecosystems and health in another.

Emissions of sulphur and nitrogen oxides in quantities exceeding the self-regulating capability of the natural environment, i.e. critical load levels on ecosystems, cause acidification damage to vegetation and freshwater life. In large amounts, nitrogen oxides lead to eutrophication. The combination of nitrogen oxides and volatile organic compounds in the presence of sunlight forms ground-level ozone, which in high concentrations can damage health, vegetation, crops and buildings.

4.1 Developments and challenges

The Intergovernmental Panel on Climate Change (IPCC)¹ has pointed out that:

- There is now “new and stronger evidence that most of the [global] warming observed over the last 50 years is attributable to human activities”.
- The mean global temperature has already risen by 0.6° C since 1860. Over the coming century the temperature is likely to increase by a further 1.4°–5.8° C. If so, this will represent the fastest rise in mean temperature in 10,000 years and result in the highest mean global temperature in 150,000 years.
- Sea levels have risen by 10–20 cm in the last 100 years.

¹ The Intergovernmental Panel on Climate Change: *IPCC Third Assessment Report: Climate Change 2001*.

The International Energy Agency (IEA)² has pointed out that:

- Global CO₂ emissions are will rise by 70 per cent between 2000 and 2030 unless new climate initiatives are taken. Two thirds of this increase will be accounted for by the world's developing countries.

The European Environmental Agency (EEA)³ has concluded that:

- If the concentration of greenhouse gases is to be stabilised at sustainable levels, global emissions must be cut by 50–70 per cent, a reduction that goes far beyond the commitments made in the Kyoto Protocol.
- Between 1990 and 2000, aggregate greenhouse gas emissions in the EU fell by 3.5 per cent and are expected to stabilise at 1990 levels by 2010. Fulfilment of the EU commitments under the Kyoto Protocol – an 8 per cent reduction on 1990 levels by 2008–2012 – is expected to require additional measures. The challenges are particularly acute in the transport sector, where an increase in greenhouse gas emissions of over 30 per cent is expected before 2010.

The Climate Convention reflects the concern of the world's governments over greenhouse gas emissions and possible climate change, and the Kyoto Protocol represents the first concrete response to this environmental problem by the world's industrial countries. Reduction of greenhouse gas emissions falls within a broader context of environmental and developmental problems. Their solution is a transition to sustainable development in developing as well as industrialized countries.

Although the Kyoto Protocol is an important first, concrete step towards a reduction in greenhouse gas emissions, its targets are far too modest to tackle the climate problem effectively. Fulfilment of the commitments entered into by the parties to the protocol will have little effect on the environment. Even if all industrialised countries – including the USA – were to meet their commitments under the protocol, global emissions would increase significantly, with a corresponding rise in the concentration of atmospheric greenhouse gases. Far larger emission reductions will be needed to achieve the Climate Convention's long-term objectives. Clearly, therefore, the Kyoto Protocol is only a first, modest step in the right direction, and stricter and more extensive emission controls will be needed after 2012. It is also clear that long-term stabilisation of the atmospheric concentration of greenhouse gases cannot be achieved without significantly restricting emissions even in developing countries. Success will in all probability largely depend on our ability to develop our technologies – specifically current energy technologies – in time. Efforts to develop the use of fossil fuels will also be crucial.

It is vital that industrialised countries introduce general, stringent restrictions on greenhouse gas emissions and the consumption of fossil energy sources such as coal, oil and natural gas. Wider use of natural gas in place of coal can help limit greenhouse gas emissions, as can continued progress towards more environmentally sound energy forms and far greater reliance on renewable energy sources in the future. Finally, emissions from industries in the transport sector are expected to increase substantially. Achieving significant results in this sector will require action at international level.

As methane and nitrous oxide emissions from farms also contribute significantly to aggregate greenhouse gas production, possible ways of reducing these should also be considered. Methane emissions from landfill sites are a further source which must be taken into account. Moreover, unless additional measures are taken, greenhouse gas emissions

² IEA: *World Energy Outlook 2002*.

³ The European Environment Agency (EEA): *Environmental Signals 2002 – Benchmarking the Millennium*. Environmental Assessment Report no. 9, 2002.

from industry are expected to increase significantly in the coming years. The greenhouse effect is the only known environmental problem expected to worsen 100 years or more from now, even if the world's countries adopt rigorous, extensive measures to combat it. Climate change can pose major risks to people living in exposed areas, including extremely high temperatures, floods, landslides, landslips, water shortages and deteriorating water quality.

Contingency action plans will be needed to deal with the effects of climate change as these are now virtually unavoidable. The ensuing risks must be taken into account in spatial planning work, planning of infrastructure and the dimensioning of technical systems.

As the Nordic countries will experience roughly the same types of problems because of their geographical proximity, there are grounds for drawing up a joint document dealing with the incorporation of contingency concerns into spatial planning – as it bears on urban planning, infrastructure, facilities and technical systems – to ensure that long-term investment is robust and can withstand future strains.

The fact that the extremely high temperatures associated with climate change aggravate the problem of air pollution is an added reason for intensifying efforts to reduce the emission of atmospheric pollutants. A concerted effort at Nordic level will be needed to implement measures to reduce ground-level ozone. There are two main reasons for this.

The first is that the Nordic countries import much of their ground-level ozone, most of which comes from Central Europe. In Sweden's case, for example, 90 per cent originates in other countries.

The other reason is that recently published research findings show that ground-level ozone is a serious health hazard (*Forsberg et al, 2003*). It is estimated that ozone causes 1,700 premature deaths a year in Sweden alone. In addition, some 3,000 people are hospitalised every year as a result of reduced lung function, increased bronchial sensitivity and asthma. Under the existing agreements reached as part of the Convention on Long-Range Transboundary Air Pollution (CLRTAP) no major improvements will be put in place before 2010; i.e. the problems caused by a large number of premature deaths and cases of hospitalisation will continue.

As it may be assumed that the consequences for health are equally serious in all Nordic countries, and as the problem cannot readily be solved by measures taken at national level, joint action at Nordic level within the CLRTAP framework will be needed, initially in the form of a revision of the Göteborg Protocol and the EU directive on national emission ceilings for substances causing air pollution. Vigorous efforts to deal with the ozone problem have the advantage that they also help reduce concentrations of nitrogen dioxide and volatile hydrocarbons, which have other negative health effects.

4.2 Implemented measures

The fact that climate change is a global problem which has been addressed by the UN Climate Convention does not mean that regional measures are irrelevant. On the contrary, goal-oriented, forward-looking national and regional initiatives will be decisive in driving the process forward. Although the Nordic countries have taken part in various forums and played an important, proactive role in the negotiation process, greenhouse

gas emissions are still on the rise in the Nordic region, as they are in all other industrialised countries.

Ongoing negotiations on climate change remain marked by uncertainty regarding the entry into force of the Kyoto Protocol and polarisation between the industrialised world (apart from the USA) on the one hand and the developing countries (and the USA) on the other over commitments after 2012. It is vital that as many countries as possible are included in a global cooperative effort to limit greenhouse gas emissions after 2012. By virtue of their international credibility, the Nordic countries can play a vital role as a bridge-builder between developed and developing countries and thereby contribute to a dialogue that is less polarised between these two groups.

All the Nordic countries have adopted the Climate Convention's overall, long-term goals and ratified the Kyoto Protocol (the Faroe Islands previously entered a preliminary reservation to the latter). The protocol comes into force 90 days after it has been ratified by at least 55 parties to the Climate Convention, including developed countries (countries with emission reduction commitments) that accounted for at least 55 per cent of aggregate CO₂ emissions from industrialised countries in 1990. The protocol has now been ratified by 121 countries, including 44 per cent of those accounting for aggregate CO₂ emissions by the industrialised world in 1990. With the US outside the picture, the protocol's entry into force now depends on its ratification by Russia, which accounted for 17.4 per cent of CO₂ emissions in 1990.

Intensive efforts have been made within the framework of Nordic cooperation and Baltic Sea Region Energy Cooperation (BASREC) to establish the Baltic Sea region as a testing ground for the implementation of the Kyoto Protocol's flexible mechanisms. The Nordic countries can use the experience thus gained to start up a Joint Implementation (JI), while the rules can be tested on the basis of experience acquired in the course of regional cooperation.

Active measures have been taken to build capacity and know-how. Efforts include the awarding of energy and climate scholarships in the Baltic countries and Russia, further development of the handbook on JI in the Baltic Sea region, holding workshops and seminars in Russia, the Baltic countries and Poland, and conducting analyses and studies of relevant climate-related themes, particularly in relation to the EU directive on emission allowance trading.

The Nordic countries have for many years applied a range of policy levers designed to limit greenhouse gas emissions. In October 2001, the European Commission proposed a common European system for trading emission allowances. Its directive on emission trading was finally adopted in July 2003.

The Nordic countries actively contributed to the preparatory work and subsequent follow-up. In the past few years, several studies and analyses have been carried out under Nordic auspices, and a seminar was held in the spring of 2003. The Nordic EU countries are in the process of preparing for the EU system, which will take effect in 2005. It is not yet clear whether Norway and Iceland will be covered by the system through the EEA Agreement. The EU directive on emission trading plays a key role in the endeavour to achieve a cost-effective reduction in CO₂ emissions. Although the Nordic countries differ significantly in terms of their internal emission structures, a distinguishing feature common to them all is the application of a broad spectrum of policy levers aimed at limiting greenhouse gas emissions. The EU emission trading system will ini-

tially cover only CO₂ emissions from specially defined sectors, primarily electricity and heat and specific energy-intensive industries. Provision has been made to extend the directive to cover additional greenhouse gases from 2008.

Reducing greenhouse gas emissions is not the only important issue. The Nordic countries have also begun to analyse the impact of possible climate changes on the Nordic region, the better to assess regional adaptation strategies. Intensified research into climate development in the region has yielded more knowledge about regional changes and their impact. The result is a better basis for evaluating the structure and substance of regional adaptation strategies. It is vital that national and regional strategies of this kind are elaborated in conjunction with measures aimed at limiting and reducing greenhouse gas emissions.

Table 4.1. Emissions of climate change gases in millions of tonnes of CO₂ equivalents/year, and reduction commitments for the period 2008–2012 under the Kyoto Protocol.^{4,5}

	1990	1995	2000	2002	Kyoto commitments 2008–2012
Denmark	68.8	77.0	67.8	68,5	54.5
Finland	76.8	76.3	75.0	81,7	76.8
Iceland	2.8	2.7	3.0		3.0
Norway	52.0	51.6	55.4	55,4 ⁶	52.1
Sweden	72.4	72.2	68.1	70,4	75.3
Nordic region	272.6	279.7	269.3		262.1

Source: Summary of national greenhouse gases compiled at the UN Climate Secretariat in April 2004.

International action to reduce long-range pollutants is being under the Convention on Long-Range Transboundary Air Pollution (CLRTAP). Over the last 20 years, major efforts have been made in the Nordic countries and in Europe as a whole to limit sulphur dioxide (SO₂) and nitrogen oxide (NO_x) emissions, which cause acid rain, damaging plant and freshwater life. The most recent protocol on acidification, eutrophication and ground-level ozone – the Göteborg Protocol, which deals with gases that cause acidification, eutrophication and destruction of the ozone layer – dates from 1999. Thus in addition to SO₂ and NO_x, the protocol deals with ammonia (NH₃) and non-methane volatile organic compounds (NMVOC). The Göteborg Protocol enjoins the countries of Europe to cut aggregate SO₂ and NO_x emissions by 63 per cent and 41 per cent respectively on 1990 levels by 2010. However, even if these targets are reached by 2010, fur-

⁴ Under agreements reached within the EU, negotiations will take place in 2006 to finally establish the climate obligations of certain EU member during the period 2008–2012.

⁵ The figures in the table refer to emission volumes only. With regard to the commitments under the Kyoto Protocol, the uptake figures will also be included, in accordance with Article 3.3 and Article 3.4. These state that the net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article (Article 3.3.), and that net changes in connection with forestry activities may be used up to a stated level (approx. 3 per cent of 1990 emission levels).

⁶ Preliminary figures

ther reductions will be needed before the acidification problem is finally overcome. The protocol, which is expected to come into force in 2004, contains a provision requiring the parties to assess the need for revision one year after it takes effect.

In 2001, the EU adopted a directive with the same aims as those in the Göteborg Protocol setting national emission ceilings for certain atmospheric pollutants. Revisions of the protocol and the EU directive are currently in preparation. The work is being undertaken in cooperation with bodies set up under CLRTAP and the EU Commission's Clean Air for Europe (CAFE) programme.

4.3 Long-term goals

The Climate Convention's long-term goal is to stabilise the concentration of greenhouse gases in the atmosphere at a level that will prevent dangerous human interference with the climate system.

Its attainment is predicated on reduced and more efficient utilisation of fossil fuels, a changeover to cleaner fuels, greater use of renewable energy sources and other CO₂-neutral forms of energy, a concerted effort to achieve more efficient energy utilisation and energy savings in all sectors, efforts to reduce emissions of CO₂, methane, nitrous oxide and industrial greenhouse gases, and improved CO₂ binding.

Industrialised countries party to the Kyoto Protocol have committed themselves to reducing aggregate emissions of six greenhouse gases by an average of 5 per cent of 1990 levels over the period 2008–2012.

The Nordic countries are committed to reductions on 1990 levels⁷ during 2008–2012. Denmark, Finland, and Sweden have undertaken the following commitments in connection with the EU burden-sharing agreement on implementation of the Kyoto Protocol: Denmark: –21 per cent⁸, Finland: 0 per cent, Sweden: +4 per cent⁹. Iceland and Norway have made the following commitments: Iceland: +10 per cent, Norway +1 per cent.

A concerted, targeted effort will be needed if the Nordic countries are to meet their commitments as emissions have increased considerably since 1990. Applying the Kyoto mechanisms, however, will also give the countries greater flexibility in meeting their commitments than the figures would suggest.

Under the plan, negotiations on commitments for the period after 2012 must have got under way by 2005. The Nordic countries will continue to play a leading role in climate policy development and take an active part in different forums. They will also explore and develop new initiatives aimed at effecting substantial reductions in greenhouse gas emissions in the period leading up to 2020 and beyond. The Nordic countries will therefore seek to ensure through efforts at international level that the Kyoto Protocol is ratified and enters into force as soon as possible. They will also seek to promote wider – i.e.

⁷ Permitted national emission levels for 2008–2012 will be determined by a number of different conditions. All countries are open to the use of flexible mechanisms to ensure fulfilment of the Kyoto Protocol commitments.

⁸ Denmark will undertake to reduce emissions by 21 per cent provided the figures for its 1990 emissions are corrected for electricity trading. The Faroe Islands have made a preliminary reservation of ratification.

⁹ Sweden's national target.

more global – participation in joint efforts to limit greenhouse gas emissions after 2012 and binding agreements that are not restricted to industrialised countries. On 30 September 2003, the Nordic energy ministers made the following declaration with regard to future commitments: “The Nordic countries will actively promote the establishment of a broad-based, equitable process involving as many countries as possible in a global co-operative endeavour to limit greenhouse gas emissions after 2012. They will also seek to ensure that the burden of reduction commitments is equitably distributed with a view to securing a sustainable, safe and efficient energy supply and the competitiveness of the energy industry.”

The long-term goal with regard to long-range atmospheric pollutants is to reduce emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia to a point where the impact on the natural environment can be kept within critical load limits (nature’s ‘pain threshold’), and damage to people’s health and the environment is avoided.

4.4 Goals and initiatives for 2005–2008

The potential for reducing climate-changing emissions in the Nordic and other industrialised countries is far from exhausted. We should therefore continue to implement initiatives aimed *inter alia* at encouraging electricity and heat producers to find ways of reducing their greenhouse gas emissions, and seek to persuade businesses and households to invest in less energy-inefficient production processes and products. Important policy levers in this connection include taxes, charges and emission allowance trading.

The countries’ commitments can be met through the application of national measures and measures associated with the use of the Kyoto mechanisms. There is every indication that the mechanisms will prove a highly usable, cost-effective instrument for reducing global greenhouse gas emissions. Although their use will undoubtedly play a significant part in helping the Nordic countries to meet their reduction commitments, they should be seen as a complement to national measures.

4.4.1 Ratification of the Kyoto Protocol

As the Kyoto Protocol represents a vital first step, in political terms, towards a reduction in greenhouse gas emissions, the Nordic countries will seek to ensure that it comes into force at the earliest possible opportunity. The protocol cannot take effect without Russian ratification.

4.4.2 Negotiating new commitments after 2012

Given the Climate Convention’s ultimate aim, and the scientific data issued by the UN Intergovernmental Panel on Climate Change (IPCC), launching negotiations on a more ambitious future global climate strategy after 2012 is the most important long-term challenge in the climate policy sphere. If we are to find differentiated, cost-effective solutions leading to a reduction in emissions, negotiations on a future regime must be based on a sound knowledge of these emissions and their development over time. The Nordic countries consider that the IPCC’s third assessment report calls for a political response.

The Nordic countries will press for a broad-based process, one that will bring as many countries as possible together in a global, cooperative endeavour to limit greenhouse gas emissions after 2012. With regard to the world’s developing

countries, there is an urgent need to build confidence and open the way to commitments of various kinds which can contribute to global emission reductions without jeopardising the countries' economic and social development. Bringing the USA back into the Kyoto process is also a vital priority.

4.3.3 The Baltic Sea region as a testing ground for the Kyoto mechanisms, including Joint Implementation (JI)

A pivotal result of Nordic cooperation on climate change were the policy decisions – following on the meetings of the Nordic energy ministers in 2001, 2002 and 2003 and the meeting of the energy ministers of the Baltic Sea states in 2002 – to establish the Baltic Sea region as a testing ground for JI projects, one of the flexible mechanisms in the Kyoto Protocol. Intensive efforts have been made to develop cooperation on the testing ground both within the framework of Nordic cooperation and Baltic Sea Region Energy Co-operation (BASREC). The framework for cooperation has been defined and written into a joint framework agreement, the Testing Ground Agreement (TGA). A joint investment facility, the Testing Ground Facility (TGF), has been set up to promote high-quality JI projects focused primarily on the energy sector and aimed at reducing greenhouse gas emissions and generating emission credits. During cooperation on the testing ground project, the Nordic countries will i) continue to work for successful implementation of the TGA and seek cooperation with other countries, ii) support the environmentally and economically efficient development and use of the TGF, iii) urge other/future parties to the Kyoto Protocol and private operations to take an active part in the testing ground project, and iv) promote the development and implementation of environmentally sound, cost-effective JI projects.

4.4.4 Networks of excellence for the Kyoto mechanisms in the Baltic Sea region

The Nordic countries will continue their expertise and capacity-building efforts in the Baltic Sea region, with particular focus on Russia.

4.4.5 The EU quota market

The Nordic countries will continue to push for implementation of the EU directive establishing an emission allowance trading scheme. With respect to the decision concerning the scope of the EU Commission's 2008 quota directive on gases and sectors (proposals are expected to be submitted in 2005), the Nordic countries will seek to ensure that Nordic views, particularly regarding cost-effectiveness, are taken into account. It is not yet clear whether Norway and Iceland will be covered by the system through the EEA Agreement.

4.4.6 Reducing industrial greenhouse gases

The Nordic countries intend to lead the way in reducing consumption of industrial greenhouse gases (HFCs, PFCs, and SF₆) and to promote a climate conducive to such a reduction. They will also work for a global reduction in industrial gas consumption.

4.4.7 CO₂ Absorption as a means of reducing the effects of CO₂ emission

The Nordic countries will seek to ensure that the follow-up of the Kyoto process with respect to greenhouse gas absorption as a means of reducing emission effects is environmentally effective. Negotiations after 2012 will address alternative ways of including absorption in future commitments. Emphasis is placed on sustainable forestry and/or forestry-related initiatives that impact favourably on the environment, including measures that reflect concern for biodiversity and the cultural landscape and/or help increase absorption or reduce emissions.

4.4.8 Nordic research cooperation in the climate field

In 2003, the impact of climate change on renewable energy sources became one of the five action areas in Nordic energy research. The following projects have been launched: Nordic CO₂ Sequestration and Impacts of Climate Change on Renewable Energy Sources and their Role in the Energy System.

As the Nordic countries can also benefit from research cooperation in areas other than energy, a proposal to evaluate the possibility of wider cooperation on climate research was put forward. Scope for wider cooperation is currently being assessed in light of the above. Examples include studies of regional climate change and its implications for the Nordic region and the adjacent areas. Areas of particular interest are agriculture, forestry, the fishing industry, biodiversity and economic performance.

4.4.9 Challenges arising as a result of climate change in the Arctic.

The Arctic is an interesting region in the climate context, partly because there is considerable evidence to suggest that most of the effects of climate change will show up there first, and partly because the ecological impact is likely to be particularly severe in that part of the world. Climate change in the polar regions can lead to changes in the ice-cap and ocean currents, which in turn can affect the global climate. The Arctic can thus provide a 'window' on future climate change and a preview of its possible regional and global consequences. The Arctic Climate Impact Assessment (ACIA), set up by the Arctic Council in 2000, is responsible for assessing and collecting available data on climate variation, climate change and increased ultraviolet radiation and its effects. The Arctic Council also decided that the scientific side of ACIA should be supplemented by policy recommendations based on the more important scientific conclusions. The aim was to supply political representatives, authorities, NGOs and Arctic inhabitants with useful, reliable information, and thus provide a broader basis for decision-making, and to support efforts in connection with the IPCC. Thus ACIA does not carry out new research and assessments will be based primarily on the findings generated by national and regional research projects and programmes.

The final ACIA reports must be submitted to the 2004 ministerial meeting of the Arctic Council in Iceland by the autumn of 2004. The countries and bodies involved in Nordic climate cooperation want to take a closer look at the consequences of climate change in the region in the light of ACIA findings.

The Nordic countries intend to ensure that:

- the Arctic Council and its member states have an important role to play in describing, assessing and communicating the consequences for the Arctic and the global environment of climate change. New knowledge and data relating to the special conditions obtaining in the Arctic must also be communicated to the appropriate forums, among others the United Nations Framework Convention on Climate Change (UNFCCC) and the IPCC.
- the Arctic Council updates scientific knowledge relating to climate change in the Arctic on a regular basis, e.g. as an extension of the ACIA process.

4.4.10 Long-range atmospheric pollution

During the period 2005–2008, the Nordic countries will be adopting policy levers and initiating measures aimed at ensuring fulfilment of the emission targets laid down in the Göteborg Protocol and the EU directive on national emission ceilings for certain atmospheric pollutants. The protocol contains a provision requiring the signatory parties to

assess the need for revision one year after it comes into force. The revision will also involve an assessment of the need to regulate particle emissions by the countries concerned. During the revision process, the Nordic countries will be attaching particular importance i) to the fact that limit values for acidification will have been exceeded in large areas of the Nordic region after 2010, and ii) to new findings on the health effects of ground-level ozone.

To date, Nordic projects have focused on characterising particulate pollution. In the coming period, however, it will also be necessary – to a greater extent than previously – to examine the connection between particulate pollution and health effects. The Nordic countries will be helping to identify the health effects of particulate pollution in the Nordic region with a view to strengthening their common knowledge base. They will also cooperate on a joint Nordic effort in support of EU initiatives in this area.

Nordic experience of environmental zones

Environmental zones have been a feature of Sweden's larger towns and cities for many years. The City of Copenhagen in Denmark is now drawing up plans for an environmental zone.

5. Biological diversity and genetic resources – the natural and cultural environment

Biological diversity is the very foundation of human life. The term refers to the diversity of animal and plant species, the genetic spectrum within and between individual species and the diversity of their habitats. The Nordic region is rich in genetic resources, natural and cultural environments and biodiversity. Large tracts of the region contain priceless treasures in the form of natural and man-made landscapes and unique coastal areas.

At global level, however, biological diversity is under enormous pressure, with species vanishing at an ever-increasing rate and the ability of ecosystems to deliver goods and services in steady decline. The reasons are numerous and complex but the most important direct causes are loss of habitat through cultivation, over-exploitation, pollution and the spread of non-native species. Man-made climate change will in the near future become a paramount threat to biological diversity throughout the world, including the Nordic region.

Resilience

‘Resilience’ in this context refers to the capacity of ecosystems or human societies to cope with disturbances. Ecological resilience refers to the capacity of an ecosystem to cope with changes and disturbances such as storms, fire and pollution without shifting into a qualitatively different state. In a resilient ecosystem, the process of rebuilding after a disturbance also promotes renewal and innovation. Similarly, social resilience refers to a society’s capacity to handle changes and disturbances such as natural disasters or political and/or economic upheavals. Social and ecological systems are dynamic; they act on one another and are interdependent.

Resilience and Sustainable Development: summary of a report submitted to the Environmental Advisory Council, 2002

5.1 Developments and challenges

The Nordic countries have in many ways pioneered development in the biodiversity sphere. Negotiations within the framework laid down by the Convention on Biological Diversity (CBD) reflect the sizable gap between the positions of developing and developed countries respectively on the issue of equitable distribution of goods and/or values based on biodiversity. The Nordic countries have been and continue to be actively involved in efforts to devise common global solutions to this problem.

The significance of biodiversity has been recognised at a number of international conferences, one of the most important of which was the WSSD. The five key areas proposed by the UN Secretary-General: Water, Energy, Health, Agriculture and Biodiversity (WEHAB) and the intergovernmental negotiation process highlight the importance of biodiversity and the connection between its goals and those pertaining to sustainable development and poverty eradication.

One concrete result to come out of the summit was the resolve to “achieve a significant reduction in the current rate of biodiversity loss by 2010”. This target is of vital importance at all levels – global, regional and national. Emphasis will be placed on the implementation of ongoing programmes in accordance with the CBD in the form endorsed by the summit. Continued, intensified cooperation between all parties is essential.

All efforts to protect and preserve biodiversity must be based on the precautionary principle. In the Nordic countries this principle is taken to mean that where a threat of serious or irreversible damage exists, the lack of comprehensive scientific data must not be used as grounds for postponing necessary measures. Cost-effective solutions must be sought. Natural resource management must be based on the precautionary principle, already enshrined in many international conventions. Every sector is responsible for ensuring that biodiversity and the natural and cultural environments are given due consideration.

An itemised summary of the efforts and initiatives undertaken by the Nordic countries to protect and preserve biodiversity and natural and cultural-historical values is set out below:

- A representative selection of habitats in every Nordic country has been set aside for protection for the benefit of coming generations. The work of drafting and updating national biodiversity strategies and action plans continues.
- Greater emphasis will be placed on institutional arrangements and legislation aimed at integrating biodiversity issues and concerns into sector-based activities.
- Increased resource allocation for surveying and monitoring biodiversity.
- Active interest on the part of the Nordic countries in regional and international cooperation aimed at implementing the CBD and other related conventions.
- Long-term, sustained efforts to manage and utilise biological and genetic resources in forestry and agriculture in a sustainable way.
- Efforts to promote greater involvement in the region’s cultural heritage and landscapes, buildings and monuments of cultural and historical value, and a closer focus on the link between natural and cultural environments in Nordic environmental policy.
- Efforts to promote greater involvement in and awareness of the economic value to society of biodiversity by encouraging sustainable use of the ecosystem and greater understanding of its resilience and functions.
- Efforts to promote greater appreciation of the significance of social factors in planning and involving relevant parties.

Genetic resources in agriculture and forestry have been a priority concern in the context of Nordic cooperation for more than 20 years. Cooperation was formally initiated in 1979 with the foundation of the Nordic Gene Bank (NGB). The Nordic Farm Animal Gene Bank (NGH) was established in 1984. The banks combine gene protection programmes with shared use of information and scientific discoveries in long-term projects aimed at preserving and utilising genetic resources in agriculture. A Nordic network for the preservation of gene resources of forest trees has been set up with a view to establishing closer contact between Nordic countries in matters concerning forest genetic resources. The network, which is administered by the Nordic Council for Forest Reproductive Material (NSFP), will also represent the forestry sector in collaborative projects with other Nordic organisations concerned with the preservation of genetic resources. In view of the growing importance of genetic resources, the Nordic Council of Ministers (Agriculture and Forestry) adopted a strategy for the preservation of Nordic genetic re-

sources for 2001–2004 (*ANP 2002:704*). As a result, a number of measures have already been adopted.

The Nordic Genetic Resources Council was founded in the spring of 2001. Its task – an important contribution to the follow-up of the Nordic Strategy for Sustainable Development – was to provide a forum for strategic discussions on genetic resources. The council is a sector-wide advisory body responsible to the Nordic Council of Ministers; its purview includes the environment, forestry, agriculture, fisheries and food.

One of the council's most important concerns in recent years has been the issue of access and rights to plant genetic resources. Its recommendations regarding the implementation of the CBD and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) – in view of Nordic genetic resources generally, and in particular the genetic material stored in Nordic gene banks and networks – were approved by the ministers in 2003. The ministers' decision and conclusions, set out in the report, *A Nordic Approach to Access and Rights to Genetic Resources (ANP 2003:717)* will serve as the basis for continued efforts in this area.

Horizontal integration and cooperation within the Pan-European Biological and Landscape Diversity Strategy was developed as part of the Environment for Europe process and at the pan-European Ministerial Conference on the Protection of Forests in Europe (MCPFE). The Nordic and European ministers responsible for environmental issues and those responsible for forestry matters have voiced their support for this cooperation, particularly with regard to prioritising areas for regional cooperation and promoting biodiversity in forests.

The Nordic genetic resources preservation strategy recommends Nordic cooperation on forest tree genetic resources and the establishment of a joint information service for livestock, agricultural crops and forestry. This has now been done.

5.2 Long-term goals

The overall aims of initiatives in this area are to protect and secure the sustainable use of biodiversity, to preserve the region's natural resources and to safeguard cultural heritage assets. A further aim is to ensure that the Nordic countries retain their role as trailblazers in the field of biodiversity preservation. Organised cooperation in the Nordic region is to be developed into a general model for use by other countries. Efforts to promote and preserve biodiversity in the Nordic region are part of the biodiversity strategy (2002).

With regard to the preservation of biological diversity, including genetic resources, the Nordic countries will seek to:

- Ensure variation in and between all natural and culturally derived ecosystems and larger unbroken, undisturbed natural habitats.
- Preserve viable stocks of all known and naturally occurring species, including their biotopes.
- Preserve inherited (genetic) variation within and between stocks and species, focusing particularly on species that are endangered, vulnerable, endemic (present only in the Nordic region), and on exploited or cultivated plants and domesticated livestock races, or those mainly occurring in the Nordic region.

- Ensure that efforts aimed at securing the continued existence of the region's cultural heritage involve the preservation of the traces and remains in the landscape and built environment of its history in all its temporal, functional and local diversity. Safeguard their cultural heritage when implementing measures to protect the environment.
- Promote the view that the protection and utilisation of genetic resources in the region is dependent on balanced global development and a common commitment to the sustainable use of biodiversity resources. Play a proactive role in efforts to devise and implement global solutions with regard to access to and joint use of the resources of biodiversity. Promote access to and the care, management, protection, sustainable development and fair and equal distribution of the benefits obtained from the utilisation of genetic resources in fulfilment of their commitment to preserve biological diversity, including genetic resources.
- Expand and intensify cooperation on special regional problems with countries and other actors in the adjacent areas, including the Arctic areas, and emphasise the importance of joint initiatives of benefit to the countries and regions involved serving to protect the natural environment, landscape and cultural heritage.

5.3 Goals and initiatives for 2005–2008

5.3.1 More vigorous Nordic participation in international processes and negotiations

The Nordic countries should continue to play a proactive role in international processes and negotiations forming part of the follow-up of the CBD. It is especially important to ensure that the Nordic region continues to play a leading international role in seeking solutions equally applicable by developing and industrialised countries and aimed at preserving and utilising the resources of biodiversity in the former, and combating poverty. An area of special interest is the preservation of the knowledge that indigenous people have regarding the biological diversity of their lands. This issue is bound up with the right to genetic resources and access to their commercial exploitation.

The Nordic countries actively support the achievement of the WSSD-2010 target and the fulfilment of European commitments on biodiversity in accordance with the 5th Ministerial Conference, Environment for Europe in Kiev and the 7th meeting of the Conference of the Parties to the Convention on Biological Diversity in Kuala Lumpur (COP7). In addition, the Nordic countries will seek to promote further horizontal integration of biodiversity concerns in other national policy areas.

The Nordic countries will continue to take an active part in negotiations on and follow-ups of international agreements and processes relating to genetic assets. This will include providing international bodies with information concerning Nordic cooperation on genetic assets, and Nordic stakeholders with information on the effects of national implementation of international agreements and guidelines. The decision taken by the Nordic Council of Ministers (environment, agriculture and forestry) in 2002 and 2003 on access and the right to genetic assets and the follow-up of this decision in the Nordic countries and Nordic agencies for cooperation are a valuable contribution to the work being carried out in connection with the CBD and the Food and Agriculture Organisation (FAO).

The Nordic countries intend to contribute to the CBD, FAO, the EU and discussions on access to genetic resources and profit allocation. This also forms part of the follow-up

of the WSSD in Johannesburg in the form of negotiations on an international regime under the CBD for the equitable distribution of profits generated from the utilisation of genetic resources.

5.3.2 National strategies and action plans for the preservation, protection and utilisation of the resources of biodiversity

By 2005, all the Nordic countries will have presented national strategies and action plans for the protection of biological diversity, the preservation of genetic assets, the sustainable use of natural resources, intensified exchange of experience and the integration of environmental concerns in sectoral policies for agriculture, forestry, fishing and traffic/transport.

It is important for the Nordic countries, both individually and collectively, that the clearing house mechanism (CHM) is used in this context and that data on biodiversity is available on the internet.

5.3.3 Safeguarding biodiversity against the introduction of genetically modified organisms, the Cartagena Protocol

Efforts must be made to clarify the ethical and social effects associated with the use of genetically modified organisms (GMO) – including its impact on biodiversity. Determining to what extent GMOs can coexist with conventionally and ecologically grown varieties is a growing challenge. Closer research cooperation is vital in this connection.

The Nordic countries intend to work for the efficient implementation of the Cartagena Protocol on biosafety, which is concerned with safeguarding biodiversity against the introduction of genetically modified organisms. The Nordic countries aim to ensure that products are labelled satisfactorily both nationally and internationally. If gene technology has been used in the food production process, consumers must be informed of this. The information must enable consumers to choose between traditional products and those produced using gene technology. Active efforts should be made to develop new and better methods to establish the presence of GMOs in animal feed and food. The Nordic countries will also take part in addressing other immediate, common concerns in connection with GMOs and their impact on the environment, including risk assessment and GMO monitoring. As far as possible, the Nordic countries will also make contributions to the EU and Cartagena Protocols in the above areas.

5.3.4 Safeguarding biodiversity against the introduction of non-native species

The Nordic countries will seek to prevent the accidental introduction of non-native species by contributing to the establishment of a regulatory framework aimed at limiting the effects of such species at international agreement negotiations on the issue, and by supplying the relevant authorities and general public with more information. They also intend to confer with their neighbours in matters relating to the spread and management of non-native species.

They should additionally contribute to European efforts to improve follow up and assess the potential risks before non-native species are introduced, in accordance with recommendations on the introduction of foreign species in the Nordic region (2000:13).

5.3.5 Methods for monitoring biodiversity

During 2005–2008, the Nordic countries will continue to cooperate on the development of methods for and exchange information on monitoring biodiversity in the Nordic region. This could not only provide a basis for establishing environmental quality objectives and

indicators but also form part of European endeavours in this area. A key concern in connection with future efforts will be to gradually improve the quality of the data series.

Efforts must also be made to ensure access to geographically structured ecological data on areas and species and that these are used by local and central government authorities. Effective surveys and monitoring are essential if the countries are to know whether they will achieve the goal of halting biodiversity loss before 2010.

Better methods are needed for classifying, inventorying and analysing problems caused by erosion in the Nordic region.

5.3.6 Impact assessment in spatial planning

As any change in the way an area is used can impact biodiversity and the cultural environment, the Nordic countries intend to continue efforts to develop new tools with which to assess such effects.

5.3.7 Strategy for preserving the Nordic landscape

In implementation of the European Landscape Convention, a pan-Nordic strategy has been drawn up. Its aim is to ensure that the diversity and distinctive features of the Nordic landscape are preserved and that recreation activities are suitably adapted to local conditions.

The Nordic countries should draw up national landscape plans, or stress the need to take account of landscape concerns in national nature conservation plans that include landscape management priorities, targets and funding options. This will help the countries clarify their national interests and responsibilities, stimulate local participation and promote cooperation with the general public and citizens' organisations. The countries should also take landscape-related issues into account in all relevant sectoral plans and identify ways in which sectoral integration can heighten concern for these issues.

5.3.8 Strengthening efforts relating to the Arctic region

Like parts of the Nordic countries, the Arctic region has its own distinctive ecology, characterised by low productivity and short growing seasons. As a result, recovery following disturbances is slow (*CAFF 2001, IUCN 2003*). As its ecosystems are highly vulnerable, particular attention should be focused on the region's conservation status and other conservation measures. The region contains an abundance of endemic species as well as species occurring at the outer limits of their natural range.

In view of the need to preserve the region's biological diversity, it is particularly important that full use is made of the activities of the Arctic Council while endeavouring to strengthen implementation of the Nordic action plan for the preservation of natural and cultural environments in the Arctic, Greenland, Iceland and Svalbard. The council's recommendations from 2002 on the conservation of Arctic flora and fauna are important in this context. By drawing up programmes that focus on key areas, Nordic cooperation can help towards implementation of these recommendations.

A basic concern in connection with the richness of the region's natural environment and its biological diversity are the rapid climatic changes now taking place there. The Arctic is the site of the earliest and most intensive evidence of global warming. The Arctic Council's appraisal of the Arctic Climate Impact Assessment (ACIA) is an important area for Nordic cooperation and should be given serious consideration. Pollutants are another significant threat to biological diversity in the Arctic – and to the health of its inhabitants (*Arctic Monitoring and Assessment Programme – AMAP, Arctic Pollution*

2002). These are mainly in the form of long-range, transboundary contaminants which build up in the food chain.

The Nordic Action Plan for Protecting Nature and the Environment in the Arctic should be developed into a plan that also covers Nordic environmental initiatives in the region, particularly with regard to climate change, persistent organic pollutants (POPs) and mercury. The plan should be primarily concerned with supporting and assisting with the work of the Arctic Council.

5.3.9 Biological diversity in agriculture and forestry

The aim is to maintain and strengthen biodiversity by establishing environmentally sound agricultural and forestry sectors in the Nordic region. The preservation of biodiversity and the utilisation of its components and resources in agriculture and forestry involve the entire complex of ecosystems, habitats, species and genetic resources. The Nordic countries wish to ensure the preservation of a representative and sufficiently large proportion of Nordic forest types. They will seek to further develop cooperation in the context of national and Nordic programmes for the preservation and sustainable use of genetic resources. Nordic cooperation will contribute to rational conservation work, increased information and the development of cooperative efforts in neighbouring areas and international forums.

5.3.10 Nordic cooperation on marine biodiversity

Marine biodiversity is a vital issue for Nordic countries and adjacent areas. The Nordic countries welcome ongoing efforts to develop a European marine strategy aimed at strengthening connections between and promoting the integration of efforts undertaken by international bodies such as the Helsinki Commission (HELCOM), the OSPAR Commission and the EU, and at developing and implementing measures for the preservation and sustainable utilisation of marine diversity.

The eco-systems approach, which also embraces the role played by qualitative ecological goals, forms an integral part of the forthcoming European marine strategy (*EC Commission, 2002, 539*).

The Nordic countries will seek to ensure that management of the marine environment also involves the implementation of an ecosystem approach. A central component of this approach is the development of ecological quality goals and uniform management plans for specific marine areas. The design and construction of action programmes incorporating such an approach call for cross-sectoral measures to deal with problems arising from threats to the condition of relevant marine areas, including the Baltic Sea. The aim is to balance different needs and interventions within a framework defined by the long-term capacity of ecosystems to withstand disturbances. There is a need for greater knowledge concerning marine biodiversity, the functioning of ecosystems and the separate and combined impact of different interventions. Marine surveys, research and monitoring are therefore vital. In accordance with international regional agreements in this sphere, moreover, the following priority measures aimed at ensuring the preservation and sustainable use of Nordic sea areas will be adopted:

- sustainable use of marine resources
- protection of representative, unique, threatened and vulnerable marine habitats
- specific measures to protect especially vulnerable natural marine phenomena such as cold-water coral communities
- measures to restore damaged, threatened and vulnerable marine habitats
- measures aimed at preventing the introduction and spread of non-native species

- measures to preserve endangered species.

In coastal areas, integrated coastal zone management (ICZM) is an important component of an ecosystem approach in which skills and knowledge development and wider national application to ensure sustainable exploitation of coastal areas are required. The EU Water Framework Directive will be crucial to the development of an overall, uniform, ecosystem-based management system for coastal areas.

5.3.11 Hunting in the context of sustainable development

The Nordic region has a long hunting tradition. The activity is of considerable importance to the people of the region in economic, social, cultural and environmental terms. Hunting and other forms of exploitation of wild animal species can also play an essential role in maintaining equilibrium in Nordic ecosystems. Although its direct economic significance has diminished, there are areas where hunting remains an important economic factor. In many parts of the Nordic region recreation values have grown significantly in importance. It is highly important in this connection to emphasise the rights of indigenous populations.

Hunting involves the exploitation of an important natural resource and it is imperative that it be practised in a sustainable way and with due consideration for biological diversity and other forms of outdoor recreation. Hunting is an important element of Nordic culture and a natural aspect of wildlife and nature conservation aimed at preserving the values of the natural environment for future generations. An important task for the Nordic countries will be to cooperate in ensuring that hunting is practised within a sustainable resource management framework. This can best be achieved by compiling existing knowledge, creating new expertise through research and development and promoting exchanges of information between landowners and hunters.

5.3.12 Promoting access to the countryside

Access to the countryside and natural amenities is the foundation of sustainable behaviour and outdoor life in the Nordic region. Through it, and the experiences and enjoyment it provides, people can gain a better understanding of the values of the natural environment and thereby greater environmental awareness. The Nordic countries will actively and continuously seek to improve opportunities for people to access the countryside, and to exchange experience of how to guide visitors in vulnerable areas. One example is the use of nature guides. The Nordic countries will also seek to promote greater access to the countryside within the EU and in other international forums. The right of common access to the countryside exists in Finland, Iceland, Norway and Sweden.

5.3.13 Supporting efforts to promote the cultural environment

Although the organisational approach to the management and preservation of the Nordic region's natural and cultural heritage varies from country to country, there is a common recognition that these resources must be seen in their context and related to one another. Objects of cultural-historical value enrich people's experience of the natural environment and give it an added dimension. They can also help extend our knowledge of human interaction with and exploitation of the environment back over thousands of years.

The Nordic countries are anxious to strengthen cooperation between public bodies responsible for the management and administration of the region's natural and cultural assets, to see these in their context and acknowledge them as mutually enriching resources.

6. The marine environment

6.1 Development and challenges

The Nordic countries maintain close contact with one another and are linked together by the sea. The sea provides a livelihood for many coastal and island communities, from fishing, aquaculture, oil drilling, shipping, etc. The seas and beaches are also important recreation areas. The sea also offers the world community an elemental ecosystem.

However, the marine environment and ocean productivity is threatened by pollution. But marine biotopes and ecosystems are also being damaged by many other human activities. As the seas are a vital link in the global eco- and climate systems, disturbances to or dislocations of the marine environment can have far-reaching consequences. Compared to our knowledge of the land environment, our understanding of the marine environment is in many ways deficient and must be improved. This is essential if we are to become more aware of the importance of the oceans to the global ecosystem and work effectively for the preservation and sustainable exploitation of the sea's riches.

The seas of the North Atlantic, the North Sea, the Baltic Sea, the Barents Sea and the coastal waters of the Nordic region are all very different and require different types of action, according to the area in question. However, it is important that initiatives to improve the marine environment are adopted and implemented in a coordinated way, and that the Nordic countries use their influence in regional and international bodies to promote and support such measures.

6.2 Implemented measures

In the last decade we have become increasingly aware of the oceans' significance and their role in protecting our planet's environment. This awareness has resulted in a number of global and regional agreements and activities aimed at improving the marine environment.

One of the most important initiatives of recent years in connection with marine pollution was the Stockholm Convention on Persistent Organic Pollutants (POP). The convention, which was adopted and signed in Stockholm in 2001 and came into force on 17 May 2004, is a global agreement aimed at protecting human health and the environment against POPs. Though directed specifically at certain chemicals currently regarded as the most hazardous, provision was made to extend it to cover newly defined substances in the future. Another important step in the global struggle against marine pollution was the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA). This acquired increased importance following the 1st Intergovernmental Review of the GPA held in Montreal in 2001, a meeting which saw the adoption of action priorities for the period up to 2006.

Recent years have also seen the adoption of a number of regional agreements, initiatives and strategies aimed at improving the management of the world's oceans and halting pollution and the destruction of biotopes. These include:

- development lines laid down in the OSPAR and HELCOM conventions for the protection of the Northeast Atlantic and the Baltic Sea, in particular those adopted at the ministerial meeting in Bremen on 25–26 June 2003,
- the North Sea conferences, the latest held in Bergen in March 2002,
- the forthcoming European Marine Strategy,
- the proposed Arctic Marine Strategic Plan,
- the North Atlantic Conference, and
- the EU Water Framework Directive.

Some Nordic countries have also developed national action plans aimed at protecting and preserving sea areas and/or halting marine pollution.

The North Atlantic Conference

Integrated management of the sea and closer coordination between national and international organisations were the key themes of the Nordic Conference on Protection of the Sea and Sustainable Utilisation of Living Marine Resources in the North Atlantic (North Atlantic Conference) hosted in Tórshavn in 2001 at the initiative of the Faroese government in cooperation with the Nordic Council of Ministers. The conference has become established as a regular forum for intensified political dialogue on the sea as a common resource base and area of responsibility for coastal nations, regions and communities across the North Atlantic. A clearer focus on the common experience of these nations and communities, and on the ties between them forged by the sea, will give the Nordic region an important platform from which to strengthen cooperation on sustainable development with its neighbours in the west, and should therefore be given priority within the framework of Nordic cooperation. The second conference was held in Shetland in October 2003, where it was agreed to meet again in Norway in 2005.
www.northatlantic.fo.

KIMO (*Kommunenenes Internasjonale Miljøorganisasjon*) is an international environmental association of over 100 local government authorities from 10 countries bordering on the North Atlantic, including Denmark, the Faroe Islands, Norway, Sweden, the Netherlands and Ireland. Its aim is to work for a cleaner, more sustainable marine environment in the area for the benefit of future generations.

Its members are in broad agreement on the need to work together and jointly collect and organise background data on the marine environment and publicise the pollution-related problems facing coastal local authority areas.

Iceland's National Action Programme

In 2001, Iceland introduced its National Programme of Action for the Protection of the Marine Environment from Land-Based Activities (NPA), in line with the GPA adopted in 1995. Though based on the latter as regards scope and design, the programme was especially adapted to suit local conditions and conform with the policies of the Icelandic government. In addition to the special measures that were to be adopted, it included a preliminary assessment of each measure. While many of the measures were introduced in order to comply with other international or internal statutory policy instruments, the NPA was seen as a comprehensive, practicable tool for prioritising actions and measuring progress in the coming years.

Finland's Programme for the Protection of the Baltic Sea

In April 2002, Finnish ministers approved a decision-in-principle to adopt a set of measures to protect the Baltic Sea. The programme's main aim is to improve conditions in the waters and marine environments of the Gulf of Finland, the Turku Archipelago, the Åland Sea, the northern part of the Baltic Sea and the Gulf of Bothnia. Measures are intended to cover neighbouring countries as well as Finland. To ensure a healthy ecological state in the Baltic Sea, efforts will be concentrated in six main action areas: combating eutrophication, reducing risks caused by hazardous substances, alleviating problems in connection with sea traffic (shipping), preserving and increasing natural biodiversity, improving environmental awareness and research and follow-up activities.

Key measures in the first area (combating eutrophication) will be focused on reducing discharges from agriculture, municipal wastewater treatment plants, sparsely built-up areas and the wastewater treatment system in St Petersburg. Industry, fish farming and other activities will also be required to cut discharges. Additional capacity will be installed to enhance the capacity to combat oil spills in the Gulf of Finland. It is estimated that if the programme is put into effect it will halve the country's nutrient load into the Baltic.

Norwegian report on the marine environment

The Norwegian parliamentary report, Protecting the Riches of the Seas (*Rent och rikt hav*) submitted by the Norwegian government in 2002, lays down overall goals for a comprehensive policy on the marine environment and proposes tools and processes for use in the implementation of ecosystem-based management of all waters, including freshwater environments, coastal areas and open seas.

In freshwater environments and along the coast, this integrated marine environment policy will be realised through the implementation of the EU Water Framework Directive. For open waters, an ecosystem-based management programme comprising comprehensive, integrated management plans will be put in place. A first step will be to draw up an integrated management plan for the Norwegian sector of the Barents Sea. The Barents Sea will thus serve as a pilot project for the implementation of an ecosystem restoration programme in Norway.

The management plan for the Norwegian sector of the Barents Sea will be based on impact surveys of activities of major significance for ecosystems, primarily petroleum extraction, fishing and shipping. Preparations for a year-round survey of the impact of petroleum extraction in the Lofoten-Barents Sea are already completed and corresponding studies will be devised for the fishing industry, shipping and external influences such as climate change and long-range pollutants. These sectoral surveys will provide the groundwork for a study of the aggregate impact of existing and probable future human activities in this area. The latter will in turn serve as the basis for the management plan itself, to be drawn up in the winter of 2005–2006.

The Implementation Plan adopted at the WSSD in Johannesburg in 2002 contains numerous regulations on the sustainable development of the oceans; these should be regarded as global priorities for the present decade. Among the most relevant decisions reached at the WSSD (excepting those especially concerned with fisheries and aquaculture, which are dealt with in a later chapter) were resolutions to:

- encourage the application of the ecosystem principle in 2010,
- develop and facilitate the application in 2012 of methods and tools for ocean management, including the establishment – based on scientific data – of protected sea areas in accordance with international legislation, and the establishment of representative networks,
- develop national, regional and international programmes to halt the loss of marine biodiversity and habitats, including coral reefs and wetlands,
- press for implementation of the National Programme of Action for the Protection of the Marine Environment from Land-Based Activities, and the Montreal Declaration on the Protection of the Marine Environment from Land-Based Activities, with special emphasis in 2002–2006 on municipal wastewater, the physical alteration and destruction of biotopes, and nutrients,

- speed up the development of measures to prevent the introduction of non-native species in ballast water, and
- set up in 2004 a regular process under the UN of global reporting and assessment of the state of marine environments.

The Declaration of the Joint Ministerial Meeting of the Helsinki and OSPAR Commissions adopted in Bremen in 2003 particularly advocates:

- the application of an ecological perspective to rules governing human activities that impact the sea,
- a clear action plan for collaboration between all national and international authorities concerned with protecting the seas, following up on the EU initiative on a European marine strategy and EU enlargement. Ministers have welcomed the opportunity to work for its development and adoption,
- action to protect endangered and numerically declining species. Ministers have pledged to create an ecologically coherent network of well managed, protected sea areas stretching across the Northeast Atlantic and the Baltic Sea by 2010.

6.3 Long-term goals

The long-term goals for the sustainable development of the marine environment are those outlined in the 2001 Nordic strategy for sustainable development, namely to preserve the biodiversity, structure, functions and productivity of Nordic marine ecosystems, and ensure the sustainable utilisation of marine resources. Pollution of the oceans must cease. This will require measures to limit the runoff of natural substances likely to disturb the oceans' chemical and nutritional equilibrium and steps to halt the discharge of chemically stable and hazardous substances altogether. To achieve this, the runoff of nutrients into areas where such flows are expected to cause eutrophication – whether directly or indirectly – must be cut by half. Discharges of hazardous substances should be gradually reduced until their concentration in the marine environment approaches the background levels for naturally occurring substances, and is close to zero in the case of synthetic man-made substances. This should be achieved by 2020.

6.4 Goals and initiatives for 2005–2008

The goals and actions outlined for the years 2001–2004 in the original Nordic Strategy for Sustainable Development continue to apply in the main areas of cooperation for the Nordic countries and the autonomous areas. These are:

- cooperation on ICZM planning,
- cooperation on the follow-up of international agreements including the United Nations Convention on the Law of the Sea (UNCLOS), the CBD, the International Maritime Organisation (IMO), OSPAR, HELCOM, the International Convention for the Prevention of Pollution from Ships (MARPOL), the London Convention, GPA and the Stockholm convention on POPs,
- reduced impact from nitrates and phosphorus, no further impact from hazardous substances and heavy metals, and

- identification of new pollution problems.

The additional goals and initiatives outlined for the period 2005–2008 are concerned with areas of specific importance and should be seen as a response to apprehensions over recent scientific findings and to new international agreements, in particular the 2002 Johannesburg implementation plan. They are related to and based on earlier short-term goals without replacing these as problem areas.

6.4.1 Improved information on the state of the world's seas and oceans

The adoption and implementation of more effective measures to prevent the pollution of the sea and to halt the breakdown of its ecosystems are impeded by the lack of good, reliable information on the state of the global marine environment. During the strategy period, the Nordic countries will be supporting UN procedures for global assessment and reporting of the marine environment, due to start in 2004. Of particular concern are assessments and reports on the state of cold-water coral communities, which could benefit from ideas contributed by the Nordic countries.

6.4.2 National action plans

The Nordic countries aim to develop their national action plans or similar initiatives for the protection of the marine environment by 2005 if they have not already done so. These must be based as far as possible on a marine ecosystems-oriented management approach.

6.4.3 Measures against mercury

Mercury pollution in seas and oceans is a growing problem. The primary sources of pollution are outside the Nordic area. The Nordic aim to be at the forefront of international efforts to promote and develop efficient and effective international tools to deal with mercury pollution. They will also seek to strengthen the Stockholm convention and other instruments to combat heavy metal and POP pollution.

6.4.4 Marine protected areas

The signatories to the Johannesburg action plan are committed to establishing a global system of effectively managed, representative networks of marine protected areas by 2012. The system must include within its scope the world's oceans and seas outside national jurisdiction, be consistent with international law and be based on scientific information. The Nordic countries and autonomous areas hereby reaffirm their commitment to the establishment of a network of effectively managed marine protected areas. These commitments are based on progress already made by HELCOM and OSPAR in relevant cooperation with the EU. 64 protected areas, established under HELCOM, have been in existence since 1994. The Nordic countries must have identified the first group of protected areas in their own waters by the end of the period 2005–2008. They will also be actively involved in laying the scientific groundwork for the establishment of marine protected areas and their role in the preservation of the biological diversity and productivity of the world's seas and oceans.

6.4.5 Support for regional marine initiatives

The regional sea areas surrounding the Nordic countries are the objects of multilateral management systems and can benefit from coordinated measures of this kind. These must be stepped up. The Nordic countries will support the development of the proposed Arctic Marine Strategic Plan and the ongoing dialogue within the North Atlantic Conference and the North Sea conferences.

The Nordic countries support the development of the common European Marine Strategy as its proposed objectives accord closely with those of the Nordic Strategy for Sustainable Development and address all the important factors affecting the ecosystem and its management from an ecological management approach. The strategy also reflects the short- and long-term goals set out in Paragraphs 6.3 and 6.4 above. Its overall aim is to promote the sustainable use of the marine environment and the preservation of marine ecosystems.

The Nordic countries support, and will actively seek to promote, implementation of the IMO decision-in-principle, approved in April 2004, to designate the Baltic Sea area, with the exception of Russian waters, as a particularly sensitive sea area (PSSA). The Baltic Sea's unique, sensitive, cold, northern brackish water ecosystem is vulnerable due to international shipping and other human activities. The IMO decision will help improve maritime safety in the area and public awareness of the sea's vulnerability. The Nordic countries intend to take an active part in efforts to develop accompanying measures as part of the IMO regulatory framework.

They will also actively endorse the designation of the Baltic Sea as a SO_x Emission Control Area under *Annex VI, MARPOL 73/78, IMO*.

7. Chemicals

7.1 Development and challenges

Modern society makes use of many different chemical substances and their number and volume is steadily growing. While the use of chemicals has helped increase our prosperity it has also created health and environmental problems. From a health and environmental standpoint, the safe use of chemicals is one of the major global preconditions of sustainable development.

Chemicals have many applications. Examples include pharmaceutical products, pesticides, detergents and cleaning products and paint. Chemical substances are also found or used in connection with products such as clothes, furniture, building materials and computers. The general trend appears to be a drop in the volume of chemical emissions from point sources such as industrial facilities, while their dissemination from diffuse sources such as products is on the rise.

Hazardous substances have been released into the environment over a long period and are now present in high concentrations in soils and sediments in many areas as a result of industrial processes. In some cases, high concentration levels extend over large areas. This is the case with lead, for example, which has been spread in exhaust fumes over many years, and persistent organic substances such as polychlorinated biphenyls (PCB) and dioxins, which are present *inter alia* in Baltic Sea ecosystems.

It is estimated that there are around 50,000 chemical substances in the European market. In most cases, very little or nothing is known about the environmental and health risks involved. Although under EU regulations, new substances must be tested before being released into the market, existing substances are not subject to such requirements. A study conducted in 1999 by the EU Commission's European Chemical Bureau (ECB), showed that information satisfying the basic requirements for new substances about to be released into the market was provided for only 14 per cent of the approximately 2,500 high-volume chemicals used in the EU. While chemical products must by law be properly classified and labelled, little or nothing is known about other types of products and their contents.

Risk assessments of chemical substances must include the most sensitive individuals and/or groups likely to be exposed to them, such as children and people with certain illnesses. Children are often exposed to pollutants, both in the external environment and through products although their sensitivity is in many cases greater than that of adults. Attention should also be focused on the implications for work environments of exposure to chemical substances. Coherent international regulatory frameworks and regular assessment criteria based on the precautionary principle will be needed to reduce the spread of and exposure to hazardous substances via products. As the health and environmental effects of exposure to chemicals may not appear for a long time, a well-founded suspicion that damage may result should be sufficient grounds for action.

We know from experience that the spread of substances with certain properties or attributes can have particularly serious consequences. Examples include carcinogenic, mutagenic and reprotoxic substances, all of which have especially severe health effects. It also applies to substances which are persistent and bioaccumulative. These remain in the environment for a long time and may cause damage that we cannot assess or anticipate today. Examples include PCB, DDT and mercury. Substances of this kind can be carried over long distances by winds and ocean currents. For these reasons, their use must be subject to extra precautions and restrictions. Endocrine disruptors, suspected of interfering with development and fertility in humans and animals, make up a further category.

Hazardous substances may be manufactured or extracted by humans from the natural environment. They can also arise unintentionally as by-products of biodegradation, industrial processes or incineration. To these must be added products and materials used in buildings, some of which have a long lifetime. Substances can leak from products during use and/or at the disposal stage.

In the Nordic countries, use of hazardous chemical products must be recorded in national product registers. The resulting data contribute significantly to an overview of chemical use. They are used for statistical purposes, to interpret trends, to display the results of risk reduction efforts and to plan and prioritise activities.

The Nordic countries all have high ambition levels in this area and are well advanced by international standards. They are in general agreement regarding aims and objectives. However, active Nordic participation in international forums is necessary as the environmental and health risks of chemical use are a transboundary problem.

A central aim is to follow up a generational goal – the elimination of chemicals having particularly problematic health and/or environmental effects from products and production processes by 2020. (The term ‘generational goal’ was first used at the North Sea Conference in Esbjerg in 1995). Several countries have drawn up lists of such problematic substances. The Nordic countries emphasise that the problems must be solved largely through EU/EEA cooperation. The common regulatory framework must include provisions placing clearer responsibility on the enterprises involved, rules requiring businesses to provide information on chemical substances must be made stricter, and the use of hazardous substances must be restricted.

Nordic cooperation affords opportunities to influence the work of the EU/EEA and international efforts, and facilitates the more efficient use of national resources. These cooperation areas have therefore been given high priority. The Nordic countries are all active participants in international work on chemicals now in progress in the North Sea Conference, OSPAR, HELCOM, the Arctic Council, the OECD, the EU/EEA and UNEP.

7.2 Implemented measures

Work on chemicals in the EU

Pesticides

In 2004, the European Commission will formally propose a revision of the Plant Protection Products Directive (*Dir. 91/414/EEC* – Directorate General for Health and Consumer Affairs) and a thematic strategy for the sustainable use of pesticides (Directorate General for the Environment). The strategy will be related to Nordic risk minimisation efforts in the pesticide field, e.g. national action programmes, education, broad-based cooperation with other actors and economic policy levers in areas where Nordic countries have previous experience. The Nordic environment ministers have drawn the Commission's attention to the importance of an overall regulatory framework coordinating rules and regulations governing the approval and use of pesticides. The Nordic countries' views on the revision of Directive 91/414 EEC, presented in coordinated form at a Nordic conference on pesticides held in Oslo in October 2003, will be conveyed to the Commission.

Action strategy on mercury

The Commission will draw up proposals for a mercury action strategy in 2004. In a communication to the EU Commissioner for the Environment, the Nordic environment ministers emphasised the importance of developing a strategy and set out their views on its contents. The Nordic Chemicals Group has made a contribution to the work of the Commission.

Re-registration and evaluation of pesticides (SERP)

According to the Commission, the ongoing programme for re-registration and evaluation of pesticides (SERP) set up in 1993 under Directive 91/414 will continue until 2008. To date, a large number of active substances in pesticides have been dealt with by the Standing Committee on the Food Chain and Animal Health. In several cases, the Nordic countries have acted jointly against the approval of substances with problematic properties, with the result that a number of substances with negative attributes from the health and environmental standpoint will be phased out. These include aldicarb, lindan, organostannic compounds, and atrazine and simazin. In other cases, substances regarded as unacceptable by the Nordic countries have been approved despite Nordic efforts. Examples include linuron, pendimethalin, paraquat and quinoxifen.

New chemicals legislation in the EU (REACH)

In October 2003, the EU Commission proposed new legislation on chemicals. Briefly, the proposal – Registration, Evaluation and Authorisation of Chemicals (REACH) – would, if adopted, require prior registration, risk assessment and approval of all chemicals before being released into the market. The onus to provide supporting data for product approval would lie with the producer. The proposal was referred to the Council Working Group on Industry and Competition. At their meeting of 27 October 2003, the Nordic environment ministers emphasised, in connection with committee work on the REACH proposal, that in addition to the competition aspects particular importance should be attached to improving environmental and health protection. The ministers also voted to support a Swedish initiative for a study on the economic effects of REACH.

The Nordic Council of Ministers approved funding for two interim studies presented in the spring of 2004. One considers the impact of PCB contamination as an example of the types of costs society can avoid through REACH. The other study looks at the economic effects of REACH on European industry, with a special focus on chemical users.

REACH also includes proposals to regulate substances given off by manufactured goods. Under the proposed timetable, REACH should enter into force in 2007 and the phased in inclusion of chemicals currently on the market will continue until 2017. The Commission's proposed information requirements governing new substances in volumes of 1 to 10 tonnes as well as certain other categories of chemicals are considered to be insufficient for risk assessment purposes.

Other EU projects

Examples of important ongoing or impending processes in the EU are negotiations on the new legislative proposals outlined above (REACH) and on the POP regulation, the revision of the Plant Protection Products Directive (*Dir. 91/414/EEC*), development of the thematic strategy for the sustainable use of pesticides and development of the European Environment and Health Strategy (SCALE). Other EU undertakings include the re-registration and evaluation of biocides and plant protection products (SERP) and the programme for existing chemical substances in the European Union (*Reg. 793/93/EEC*).

European Environment and Health Strategy

In the summer of 2003, the EU Commission sent the European Council a communication on a European strategy for the environment and health. This was the first step in the preparation of a European environment and health strategy that will establish the framework for new measures and initiatives in the coming years. The strategy will be referred to as the SCALE initiative.

Its primary aim is to improve our understanding of and knowledge about the relationship between health and the environment, and measures will initially be aimed at a number of prioritised health effects. These include respiratory diseases, asthma and allergies in children, developmental disorders of the nervous system, cancer in children and disorders of the endocrine system. The ultimate aim of the proposed strategy is to develop a cause-effect model capable of generating the knowledge needed to devise a community policy that addresses the environmental origins of ill health and their effects.

The EU Water Framework Directive

The EU Water Framework Directive (*Dir. 2000/60/EEC*) replaces a number of earlier legislative measures in this area. The directive provides for the integrated management of water resources at national, regional and local level in order to protect inland surface water, coastal waters and groundwater. Its aims are to protect aquatic ecosystems from further degradation and improve their state over time, promote sustainable water use through long-term conservation of water resources, gradually reduce groundwater pollution and prevent further pollution by cutting down the supply of prioritised substances and eliminating the supply of prioritised hazardous substances. The directive will thus create new requirements with regard to chemical use, remediation of contaminated sites and waste disposal.

Work at international level

The POP and PIC conventions

The Stockholm Convention on Persistent Organic Pollutants was signed in 2001 and came into force on 17 May 2004. It initially provided for the banning or restriction of 12 of the most dangerous chemicals in the market – the “dirty dozen”. More chemicals will gradually be added to the convention’s list of banned substances. The work of transposing the convention into EC law by regulation began in 2003. The objective of the Rotterdam Convention is to promote the exchange of information about hazardous chemicals that are banned or severely restricted. The convention requires a country which plans to export a chemical that is banned or severely restricted for use within its territory to inform the importing country that such export will take place. The latter must also approve the import under the so-called prior informed consent procedure (PIC). In addition the exporting country must require that exports of chemicals included in the PIC procedure are subject to labelling requirements. At present the convention covers 26 pesticides and 5 industrial chemicals. Further chemicals are in the process of being added. Regular Nordic coordination meetings are being held in connection with ongoing work on the conventions.

The World Summit in Johannesburg (WSSD)

A decision to develop a global chemicals strategy was taken at the WSSD in 2002. The first meeting on the strategy was held in Bangkok in November 2003 as part of the UN Environment Programme. Common Nordic positions adopted ahead of the meeting underlined the need to acquire more and better knowledge about chemicals and their dangers, the importance of applying the precautionary principle and replacing hazardous substances with less hazardous alternatives, and the need to take particularly dangerous chemicals like POPs, heavy metals and other toxic substances into account in all future initiatives.

Globally Harmonised System of Classification and Labelling of Chemicals

A globally harmonised system for the classification and labelling of chemicals (GHS) was adopted by the UN in 2002. This should have been transposed into the legislation of the respective countries by 2008. The EU aims to introduce GHS in conjunction with the introduction of REACH. The Nordic countries played a significant part in determining the final shape of the GHS.

UNEP measures on mercury, lead and cadmium

The UN Environmental Programme (UNEP) recently commissioned a global mercury assessment. As a result it has now recognised mercury as a global environmental problem. The Nordic countries have pressed for the adoption of measures against lead and cadmium. In February 2002, the UNEP Governing Council approved the introduction of a mercury programme leading to a report and new initiatives at its next meeting in 2005.

7.3 Long-term goals

In pursuance of the Prime Ministers' declaration, the strategy's long-term goals in this area are to ensure:

- that the use of chemicals does not involve a risk of damage to people's health and/or the environment,
- that discharges of chemicals that constitute a threat to people's health and/or the environment cease within one generation, and
- increased producer responsibility and the application of the precautionary-substitution principle to chemicals policy.

Newly produced goods introduced into the market in 10-15 years' time must therefore be largely free of:

- man-made organic substances that are slow to degrade (persistent) and/or accumulate in living organisms (bioaccumulative),
- man-made substances that can cause cancer (carcinogenic) or heritable genetic damage (mutagenic), affect reproduction, or disrupt the endocrine system, and
- heavy metals such as cadmium, mercury and lead.

Information on the properties and characteristics of all chemicals produced and marketed should be easily available. It should also be possible for users to obtain information on hazardous substances that may be given off by products sold in the market.

7.4 Goals and initiatives for 2005–2008

Work on chemicals in the EU and at international level

The Nordic countries will continue to develop Nordic cooperation on chemicals as a platform for effectively pursuing common interests in the EU and at international level. They also intend to contribute to effective international implementation of the global conventions and agreements in this sphere, to ensure that these function effectively and that more substances with undesirable properties are covered by them. The Nordic countries must be proactive in the work of developing a chemicals strategy and strengthen the CLRTAP Protocol on heavy metals.

Work on the global chemical strategy adopted at the WSSD has recently got under way, as have efforts in connection with the proposed global action strategy on mercury. Work is also in progress in connection with the Montreal Protocol, the Stockholm (POP) and Rotterdam (PIC) conventions, the Aarhus Protocol on POPs and heavy metals under the United Nations Economic Commission for Europe (UNECE)/LRTAP, the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), and the international agreement on the banning of organostannic compounds such as tributyltin (TBT) in anti-fouling paints for use on ships' hulls. Work is under way in the OECD on the development of test guidelines, harmonising the classification and labelling of chemicals and the development of integrated product policies (IPP).

At regional level, work is in progress in a number of bodies and processes including the North Sea Conference, OSPAR, the Arctic Council and HELCOM.

7.4.1 Mercury use

The Nordic countries will seek to bring about a sizable reduction in mercury use by being pro-active in developing the EU regulatory framework in this sphere and by leading the way with national initiatives. The Nordic region must play a proactive role in the establishment of a global UNEP agreement on mercury.

7.4.2 Impact of pharmaceutical residues on the outdoor environment

The Nordic countries are anxious to ensure that the environmental and health effects of pharmaceutical residues receive more attention, that further efforts are made to chart their extent and distribution, and that rules are developed at national and international level and in the EU. There is a growing recognition that the discharge of pharmaceutical residues, primarily in waste water and sewage treatment plants are a threat to the environment and, in the long term, to people's health. Residues have been linked to endocrine disruption.

7.4.3 Greater knowledge concerning all substances used

The Nordic countries intend to help ensure that the new EU chemicals legislation (REACH) contains provisions on the dissemination of knowledge and information on all chemicals used in the production and processing of goods. The countries should actively seek to ensure that chemical substances that do not meet these requirements before a specified date may no longer be used. They should also seek to ensure that as far as possible assessments of the dangerous properties of chemicals are carried out *inter alia* with the help of computer-based models such as the Quantitative Structure-Activity Relationships model (QSAR). These risk assessments must form part of risk classification and risk assessment work and, in particular, of the prioritisation of efforts targeted at different chemical substances.

7.4.4 The enterprise sector's responsibility for producing information

The Nordic countries will seek to ensure that REACH places the onus for investigating and assessing the risks presented by chemicals and for ensuring that chemical use does not endanger people's health or the environment squarely on the manufacturer. The new regulations must be simple and straightforward. They must also be cost effective, i.e. the environmental benefit obtained must be in proportion to the burden they place on the producer. This applies particularly to small and medium-size enterprises and to users lower down the user chain.

7.4.5 Uniform requirements governing chemical substances of all types

The Nordic countries will press for the adoption of uniform requirements on testing and risk assessment of substances, whether regarded as existing or new and whether present in toys, cosmetics, pesticides or used in industrial processes.

7.4.6 Access to information

Having regard to the strategy's long-term objectives, the Nordic countries will seek to ensure that EU chemicals legislation rigorously defines the scope and content of information on the properties and handling of chemicals to be supplied to all users by producers, importers and wholesalers/middlemen. The countries should also press for a system that allows the general public easy access to comprehensible information on chemicals. They should also seek to ensure that access to information on hazardous substances that may be given off by products is a requirement under REACH legislation.

Emphasis should be placed on the Nordic countries' long experience of keeping product registers.

The countries should work to strengthen REACH provisions on low-volume chemicals and seek to ensure that the information requirements are the same for new and existing chemicals and sufficiently comprehensive to enable risk assessments.

7.4.7 The precautionary-substitution principle and the polluter-pays principle

The Nordic countries will actively seek to ensure that the precautionary-substitution principle and the polluter-pays principle are clearly and appropriately embodied in REACH, EU pesticide regulations and international agreements on the production, sale and use of chemicals.

- The precautionary principle is fundamental to all work aimed at making chemicals and their use safe from the health and environmental standpoint.
- Substitution must take place at product level first. This allows differences in terms of the natural environment, climate and agriculture to be taken into account and places responsibility for substitution on the individual country. Substitution at Community level may also be an option as a supplementary measure.
- Costs arising as a result of damage to health or the environment should be paid by the producer.
- Costs incurred in connection with the production of information or documentation required for the approval of a chemical substance or product should be borne by the producer.

7.4.8 Environmental and health impact assessments

The Nordic countries are anxious to help move forward on the development of criteria for assessing endocrine disruption in the EU, and otherwise contribute to the work of preparing criteria for assessing dangers to the environment and health in other areas. The countries should also actively contribute to the development of environmental and health impact assessment criteria in the OECD and UN, as part of the GHS.

The Nordic countries will cooperate on initiatives aimed at removing or reducing the concentration of substances hazardous to health and the environment from products which producers wish to label with the EU Flower or the Nordic Swan. The criteria governing the awarding of these labels have led to the removal of a wide range of environmentally hazardous substances, and the Nordic countries are actively concerned to bring about the removal of a wide range of substances dangerous to health as well.

7.4.9 Risk assessment

The Nordic countries want to:

- contribute to efforts to make risk assessment simpler and more efficient and ensure that consideration for sensitive groups such as children, pregnant women and particularly vulnerable risk groups is recognised as a starting point for risk assessment,
- help enhance the efficiency and effectiveness of risk assessment and maintain its focus on health and environmental effects by ensuring that special emphasis is placed on the most sensitive ecosystems and species, and
- work for the application of strict approval criteria for all types of chemicals covered by existing EU regulations. The criteria should allow a realistic approach to risk assessment based on actual conditions – including incorrect use and accidents.

7.4.10 Follow-up of the generational goals

The Nordic countries will help to give concrete form to the generational goal agreed to under the OSPAR Convention and by HELCOM – and now the object of international cooperation – and continue to play an active part in designing criteria for the selection of chemicals to be prioritised under OSPAR. The countries should adopt concrete measures to enable them to achieve the goal of eliminating all chemical discharges that constitute a threat to health and/or the environment within a generation.

7.4.11 Environmental management systems and environmental policy

The Nordic countries are anxious a) to contribute to the further development of ongoing work in the chemical sphere, specifically in connection with product-oriented environmental initiatives, through its concrete integration in the production and consumption processes, and b) to ensure that the life cycle perspective is taken into account. Voluntary efforts by enterprises should be encouraged and promoted so that tools such as EMAS/ISO14001, environmental product declarations, guidelines for public procurement and environmental labelling using the Nordic Swan and other labels can be developed and coordinated for use in connection with work on chemicals. Given the global scale of trade and the fact that the Nordic countries are major importers, efforts should not be restricted to Nordic producers but also be aimed at importers of goods from the EU and countries outside the Community.

7.4.12 Nordic cooperation in international contexts

The Nordic countries have traditionally – and effectively – supported one another in international negotiations, *inter alia* on chemicals. In future they will also apply the ‘lead-country’ system, i.e. not only support one another, but also distribute tasks strategically among themselves for maximum effect within a broad spectrum of key Nordic action areas.

7.4.13 Reducing the use of pesticides in public spaces and private gardens

The Nordic countries will continue efforts to reduce the use of pesticides in public spaces and private gardens.

8. Food – safety and health¹⁰

8.1 Development and challenges

Since the end of the second world war, the supply and variety of food has increased considerably. Today, citizens of the Nordic countries can buy food from all over the world.

Food technology is continually developing; new manufacturing processes can solve old problems, but also give rise to new ones. This may be the case if new biotechnological processes are applied, for example in the production of new foods using genetic engineering.

Our knowledge about food is continually growing. Chemical and microbiological methods of analysis and tools for toxicological and nutrition analysis are improving. As a result, previously unknown problems connected with food safety are being encountered. Examples include the occurrence of the substance acrylamide, a process contaminant found *inter alia* in potato products, and dioxins in Baltic Sea fish.

The increasing range of food in the market and our growing knowledge present new challenges with regard to food safety evaluation. Producers and consumers of food need to learn more about food, while much old knowledge about food and its correct handling seems to have been lost in many environments. While many consumers have become more aware of food quality¹¹, it has become generally more difficult for them to assess it. Quality may cover many aspects important to the consumer. For some, quality is synonymous with affordability. However, quality is generally associated with “safe and reliable food”.

The food safety debate

Food safety is essential to public health and, along with the provisions in this area, is important in international trade. Health is central to quality of life and consumers must be competent in many areas if they are to take responsibility for themselves and maintain their health.

To be able to judge quality in terms of safety and health, consumers must know a great deal about food. Some consumers lack elementary knowledge about the handling and preparation of food and the importance of a well balanced diet.

¹⁰ *Food safety* here refers to food which is safe from the standpoint of people's health. In poorer countries, *food security*, i.e. security of supply, is the predominant problem in this area. However, the latter concept is not included in *food safety* and is not an issue in the Nordic strategy for sustainable development.

¹¹ The concept *food quality* is used here in a general sense and, hence, covers all the characteristics and qualities of a given food, including the traditional quality concepts such as *food safety*, physical and chemical composition, taste and conditions pertaining to health and safety. In addition, food quality also includes indirect ‘characteristics’ such as production conditions, labelling, ethics, animal protection, environment and working environment.

Safe food products

A basic requirement in food legislation in most European countries is that only “safe food” may be sold.

“Safe food” is defined as “food that does not affect the consumer’s health negatively, either in the short or the long term.”¹²

This is also a fundamental principle of the EU Food Regulation, and the definition provides the Nordic strategy with its point of departure in this area.

“Sustainable development towards food safety focuses on guaranteeing safe food and balanced consumption. It must ensure that the consumer’s total diet does not damage her/his health. At the same time, sustainable development must ensure that problems arising in connection with food safety in the present generation do not increase and are not passed on to future generations.”¹³

In principle, an item of food cannot be assessed separately. In most cases it is essential to assess the composition of the whole diet. Factors that can have a detrimental effect on consumers’ health include a badly balanced diet in terms of nutritional value, disease-inducing micro-organisms, certain substances naturally occurring in food plants, and chemical contamination. Food safety also involves avoiding extreme amounts of certain substances in food, e.g. vitamin A.

A varied diet, with a balanced intake of nutrition and energy, is vital to health. It is important to take the composition of the diet and its significance for food safety into account when assessing specific foods. Other issues that must be considered are whether:

- a specific risk is acceptable,
- the risk is small in relation to the usefulness of a specific item of food, and
- different effects can interact and change the total effect/risk.

The health and wellbeing of livestock is important in food production and food safety. Dangers include the presence of zoonoses¹⁴, unhealthy remnants of pharmaceutical preparations and the development of resistance to antibiotics in disease-inducing micro-organisms. New production methods in the primary production of raw materials and in the food industry may mean a reduction in food safety. Contamination by disease-inducing micro-organisms must be prevented. The same applies to contamination associated with processes such as direct drying where food is contaminated by smoke gases. Processes may also be modified to reduce the build-up of contaminants such as fried food mutagens, PAH and acrylamide. The primary means of reducing levels of environmental contamination and micro-organisms in food must be to limit contamination at source, i.e. either where it is contaminated or in primary production and in the processing industry.

Complete removal of all chemical and microbiological impurities and natural toxic substances in food is unrealistic, among other things because some impurities occur naturally and are extremely widespread. Hence, many impurities will inevitably be found in food to a certain extent. The Nordic countries apply the principle of the lowest achiev-

¹² From a contribution to the debate made in June 2003.

¹³ Conclusions from a workshop, June 2003.

¹⁴ Zoonoses are any diseases and/or infections that may be transmitted naturally between animals and humans, zoonotic agents are any bacteria, viruses, prions or parasites likely to cause zoonoses.

able level of food contamination¹⁵. To some extent, the question is what risks is society willing to accept? This is ultimately a political choice. Although decisions must be taken regarding the risks that can be accepted and the level of security aimed for, the Nordic countries clearly want higher levels of protection.

Food production

The Nordic region produces food on a large scale and maintains high food safety standards. Its citizens have access to good education systems. The countries are able to produce food which is sustainable environmentally, socially, economically and in terms of health. Its producers know that food safety is essential for maintaining and developing food production in a sustainable direction. This is not only important for the domestic market but also in the context of international trade.

The Nordic fishing industry faces special food safety problems due to marine pollution. However, these are problems that the food industry can only solve to a very limited degree through its own efforts. It is vital for food safety that efforts are made to protect sea and land against pollution.

The division of roles in the drive to achieve high food safety standards is clear. The enterprises that produce or import foods bear responsibility within their respective areas for ensuring the safety of food put on sale to consumers.

Responsibility for the quality of food in terms of health rests with the producer. The production process must be transparent and credible. Where necessary, consumers must be given advice on the handling and preparation of food.

Consumers

Consumers' choice of food and the composition of their diet are crucial to their health. A well-balanced diet in terms of nutrition and energy is particularly important in preventing diseases.

Thus it is essential that consumer knowledge is maintained and developed. Consumers must be capable of choosing good raw materials, planning nutritionally sensible diets, preparing food in the best possible way and, as far as possible, avoiding contamination.

They should, as a minimum requirement, feel secure in the knowledge that the food they eat will not make them ill – in the short or long term – provided they follow the instructions given. Consumers must be certain that they are not being misled when they buy food. This applies to domestically produced and imported products and must also apply to consumers in the Nordic countries' export markets. But consumers, too, must take responsibility for eliminating risks caused by incorrect handling and preparation of food or an unbalanced diet.

Consumers must be fully informed about the food they buy. They must be given all necessary advice and guidance on its composition and preparation and on food safety.

Public authorities

Rules and information for the food industry help to raise and maintain food safety standards. Public authorities carry out supervision and ensure openness and transparency in connection with risk management (rules and inspection) and risk assessment. If there

¹⁵ As Low as Reasonably Achievable.

are well-founded suspicions about the safety of food, the authorities must act resolutely and consistently along with the food industry and consumers.

Effective food traceability ensures that problems can be solved by withdrawing products from the market.

The authorities must help maintain consumer confidence in Nordic food by consistently applying the principles of:

- comprehensive consumer protection,
- openness and transparency in risk management and the risk assessment process,
- effective, comprehensive measures to ensure that rules are adhered to,
- access to information and advice in all areas of importance for food safety, and
- continuous evaluation of measures to ensure food safety.

Authorities, businesses and consumers should agree on the goals set and how they are to be realised. All parties must be actively involved in the risk analysis¹⁶. It is also essential that all parties participate actively in work pursued at international level. Complete transparency with regard to rules, supervision and access to information and guidance are necessary to retain consumer confidence in the food authorities' impartiality and in food producers as responsible actors in the market.

Supervision and quality control

One of the instruments food producers should focus on is their own control process. Within the enterprise, the quality control process guarantees food safety assessment at critical control points, from raw material through the manufacturing process to the end product. Self-supervision presupposes systematic knowledge and assessment of the safety of individual food products, and supervision and documentation of all production stages. An essential precondition of self-supervision is assessment of all potential risks. The assessment should begin with incoming raw materials, continue with the production methods applied including hygiene standards during production, and cover packaging, storage and distribution of the end product.

The task of the supervisory authorities is to inspect the enterprises. This normally involves inspection of the company's own quality control processes, but direct on-site inspections and end-product analyses may also be undertaken. Inspections must be effective and targeted at areas which, in experts' assessment, are most problematic. Particular attention must be focused on areas of significance for food safety. A good working environment and good basic and further training of employees are essential if food safety is to be guaranteed.

National and international regulation

Simple, clear-cut rules that can be understood by food companies, producers, consumers and supervisory authorities, in conjunction with advice on food composition and preparation, are vital to high food safety standards.

Rules and guidance issued by the EU and set out in the Codex Alimentarius¹⁷ are aimed particularly at enhancing food safety in connection with the free movement of goods.

¹⁶ *Risk analysis* comprises 3 elements: risk management, risk assessment and risk communication. Risk assessment is based on scientific documentation and risk management is that part of the decision-making process concerned with possible interventions, consequences, etc. The three parts must proceed in a transparent and open way, communicating with stakeholders.

¹⁷ Codex Alimentarius is a joint UN/FAO organisation.

Food producers and consumer organisations should be involved in this work at national and international level.

The Nordic are actively participating in the development of a new statutory framework in the EU/EEA¹⁸ and bringing their influence to bear on decisions in international processes in the FAO, WHO, Codex Alimentarius, OIE¹⁹ and the IPPC²⁰. Participation encompasses risk management and risk assessment, in keeping with the basic premise that it is essential to focus on consumer safety.

Developments in EU food legislation will continue to be of decisive importance for development in the Nordic region. Many EU/EEA food regulations have been harmonised and the trend is towards greater harmonisation in this area. EU efforts are of direct significance for the whole Nordic region, and Nordic countries must endeavour to win active EU support for Nordic goals and values with regard to sustainable development towards food safety. This applies to the regulatory framework on food and to preventive efforts to limit pollution of the environment and primary production. The fact that there will be a special Nordic perspective on problems in many areas, justifies joining forces to influence international development as far as possible in the desired direction. When several countries are pulling in the same direction they are far more effective.

Food safety has also become important in a larger, international context as the requirement to comply with Codex Alimentarius standards is the basis for WTO and SPS²¹ agreements. Risk assessments based on scientific documentation of risks are thereby of decisive importance for joint trade restrictions. Nations like the Nordic countries that maintain a high level of protection thus come under a certain amount of pressure regarding assessments where other non-scientific risk assessment aspects – including “other legitimate factors”, such as the application of Good Agricultural Practice (GAP), or the wellbeing of animals and ethical concerns – come into play. The Nordic countries continue to actively participate in cooperation on Codex standards in order to attain standards that ensure a high level of health protection, and include other legitimate factors.

A central objective for public authorities is to ensure that all food offered to consumers is safe and perceived to be safe. It is important to enable consumers to make real, informed choices between genetically modified and conventional products.

8.2 Implemented measures

Food safety and food quality have for many years occupied a central place in the Nordic countries’ statutory framework and food policies. These areas have been given high priority by the Nordic Council of Ministers; in particular, the Committee of Senior Officials for Food Issues (EK-Livs), has carried on extensive activities in this sphere for many years. Food safety is high on the political agenda, and in the Nordic countries decisions have been taken on food safety and consumer influence.

¹⁸ European Economic Cooperation Agreement.

¹⁹ World Organisation for Animal Health.

²⁰ International Plants Protection Convention.

²¹ Sanitary and Phytosanitary Measures.

Ministerial declaration on improved food safety in the Nordic countries²²

Food safety is high on the political agenda in the Nordic countries, EU and globally.

In 2002 the Nordic food ministers approved a number of initiatives, and took the following decisions:

The Nordic countries will endeavour to cooperate with a view to enhancing their impact in international organisations. The established Nordic forums for cooperation must be alert to opportunities for participation. Cooperation must be carried on actively within the framework of ad hoc and permanently established networks, and through continuous contact with a view to solving current problems of mutual interest.

The Nordic Committee of Senior Officials for Food Issues (EK-Livs), the Committee of Senior Officials for Fishery Affairs (NEF) and the Committee of Senior Officials for Agriculture and Forestry Affairs (NEJS) will be particularly responsible for ensuring that:

- thematic areas in which Nordic influence should be enhanced are continually assessed and selected,
- where necessary, suitable forums are selected for drawing up documents, outlining objectives, guidelines and background material for each thematic area. The documents are to be presented to the Committees of Senior Officials for approval and forwarded to the authorities in the individual countries for application by the international organisations.
- The Nordic countries will seek to promote effective consumer influence in the food area at national, Nordic and international levels, *inter alia* by pushing for implementation of the recommendations in the proposed Nordic action programme to strengthen consumer influence in the food area.

As far as possible, food safety will be included as an important element in future Nordic projects. Examples of key areas of cooperation include meat inspection, traceability, dioxins, natural toxins and zoonoses.

In addition, the Nordic countries have adopted an action programme to strengthen consumer influence in the food area. This states *inter alia*:

Nordic action programme to strengthen consumer influence in the food area²³

Efforts to promote consumer influence are essential to food safety: they ensure that consumers take a stand on proposals and initiatives from authorities, and take responsibility for their part in the process of food preparation and diet composition.

In 2002, the Nordic food ministers adopted an action programme recommending that Nordic authorities work towards the following four sub-goals in order to ensure that consumers exercise influence on the formulation of food policy in the Nordic countries:

The Nordic countries will seek to promote effective consumer influence in the food area at national, Nordic and international levels, *inter alia* by pushing for implementation of the recommendations in the proposed Nordic action programme to strengthen consumer influence in the food area.

- 1) To increase Nordic consumer competence in the food area.
- 2) To establish mutual openness between authorities, companies and consumers
- 3) To allocate resources to promote consumer involvement.
- 4) To create meeting places for dialogue and agreement between consumer interests, companies and authorities.

The research sector has also adopted important new measures.

²² Greenland Declaration, August 2002.

²³ Greenland Declaration, August 2002.

A double strategy has been developed under the auspices of the **Nordic Industrial Fund** to meet common Nordic challenges to food safety in cooperation with several national research administrations and the food sector:

- An effective and competitive Nordic research environment will be established through a Nordic bridge-building programme Processing for Food Safety, in the following thematic areas of importance to Nordic consumers and the Nordic food industry: Risk analyses; risks associated with food production (chemical contamination arising during production); traceability; campylobacter infections. Several major research projects on these themes will be initiated in 2004 as a complement the activities in the Nordic Council of Ministers' food sector.
- As part of an EU-financed preparatory project, (SSA) PROFORSAFE, launched in 2003, Nordic research bodies and Nordic researchers are collaborating on the creation of a platform for expanding the Nordic bridge-building programme and establishing a larger 5-year ERA network for European research programmes and food safety. More than 20 countries have shown interest in participating in the EU application for the ERA network SAFEFOODERA.

In addition, the food sector has looked at ways of strengthening research focusing on administration and the Council of Ministers has appointed an *ad hoc* working group for the establishment of a joint research and education forum for fishery, agriculture, forestry and food.

8.3 Long-term goals

The long-term goals for sustainable development are based on the strategy's definition of sustainable development for food safety.

The overall goals with regard to legislation and supervision remain:

- Consumers must have access to safe food, relevant information and the means to compose a sound diet.
- Rules should be established in dialogue between consumers and food companies.
- Advice and guidance that is informative and easily accessible to food companies and consumers should be drawn up.

The aim is to guarantee the consumer the possibility of making realistic, informed choices and of preparing a sound, balanced diet. This is to be effected through the provision of basic knowledge and information, including adequate and easily comprehensible food labelling.

Producers and importers are responsible for ensuring that food is in good condition. Supervision by the relevant public authorities will ensure that standards are maintained.

Where there is a direct connection between environmental pollution, production conditions and food safety, producers are in principle responsible for ensuring that the goods are satisfactory from the health standpoint. It is important in this context to ensure that agriculture and fishing are not adversely affected by external factors such as soil, air and marine pollution, but that pollution is stopped at source.

Initiatives aimed at maintaining the level of food safety, and preferably improving, it for future generations must be strengthened.

8.4 Goals and initiatives for 2005–2008

The overall food safety goal must be achieved from “field and fjord to fare” (jord/fjord till bord). The assessment of food safety is increasingly based on risk assessment in international forums – in particular the EU and FAO/WHO expert committees. It is vital for international trade that the same food safety standards are established throughout the world. At the same time, these standards must be based on an overall requirement for a high level of consumer protection. International risk management and accumulation of know-how and expertise take place in the interplay between member countries all over the world. Greater influence on decision-making is attained by prioritising active participation in this work. Interaction with company and consumer organisations is needed to ensure a balanced package of measures that takes account of consumers and companies.

In general, efforts by the Nordic countries to boost Nordic influence on international risk management in all areas will be made on a joint basis, in the EU and in FAO/WHO expert committees. It is therefore essential to maintain and build on existing expert knowledge in the Nordic food environments, and expand cooperation between the countries in order to make a cohesive international contribution. The Nordic countries must contribute actively to this work, *inter alia* through expert contributions to the decision-making process. The formal and informal international network must be maintained and if possible extended. This will guarantee that the company and consumer organisations concerned are involved and assist in the process of developing systems of rules and advice.

The decision basis must be open and transparent. If security²⁴ is given priority over food safety, the consequences should be assessed and be clear from the decisions.

It appears that a number of initiatives will be needed in the next few years. The strategy sets out a number of key objectives, listed according to the “from field and fjord to fare” principle. The objectives are connected and constitute the overall goals that are to be achieved to achieve sustainable development of food safety. Thus the objectives are not set in order of priority, but rather the focus is on diet and nutrition from the standpoint of consumer health. The principal goals may include several sub-goals and it is essential to work on the development of methods to measure the effect of the initiatives that have been embarked upon to achieve an objective or sub-objective.

8.4.1 Intensify efforts to promote animal health and welfare

The Nordic countries must ensure the maintenance of healthy livestock²⁵ living in conditions that guarantee their wellbeing.

They will introduce measures in primary production aimed at preventing diseases, zoonoses or other conditions that may cause problems to animal health and food safety. This can be achieved by enhancing the knowledge of all players involved in the process from ‘field and fjord to fare’. It can also be achieved by monitoring and efforts to limit problems at source.

The health of animals is affected when they are transported. Appropriate training for drivers is therefore of major importance.

²⁴ Food security (see also footnote 10).

²⁵ The term includes pets as well as aquaculture animals from both ponds and the sea.

8.4.2 Strengthen efforts to counter zoonoses and disease-inducing micro-organisms

The Nordic countries will devise and launch strategies to reduce zoonoses in primary production and food production. The level of protection in the Nordic region must be strengthened as much as possible and it is important to ensure that implementation of harmonisation in the EU and Codex Alimentarius is not perceived by the Nordic countries as a reduction in the level of protection.

Monitoring of food-borne diseases and disease-inducing micro-organisms must be intensified in order to map out routes and causes of infection.

8.4.3 Reinforce safe food handling and production by enterprises and consumers

The Nordic countries will seek to prevent contamination of fodder and raw materials in primary production. Courses on HACCP²⁶ for personnel, tracing of sources of infection and generally improved traceability of raw materials, food and packaging will be introduced and/or developed.

To ensure that existing and potential risks are fully and widely understood, the Nordic countries will encourage further training for personnel in primary production, industrial production and the distribution chain.

Consumers will be given specifically targeted information about safe handling, storage and preparation of food.

8.4.4 Limit chemical pollution and ensure that only well tested processing aids²⁷, additives and flavourings are used

The Nordic countries will seek to keep levels of chemical contaminants in food – such as dioxins, heavy metals and mycotoxins – as low as possible. Consumers must be given advice and guidance aimed at ensuring a well-balanced, nutritious diet while minimising the intake of problematic substances such as mercury in fish.

Contamination in the food production process will be reduced by choosing optimal manufacturing processes.

The Nordic countries will continue to work to limit the use of additives and flavourings, production agents such as pesticides, veterinary pharmaceuticals, and detergents and disinfectants, to what is technically necessary. Due to the almost total lack of risk assessments of substances used e.g. in packaging or as flavouring these have high priority.

8.4.5 Increase knowledge about and limit the risk of natural toxic components

The Nordic countries will ensure that consumers are protected against the effects of hazardous natural toxic components in food, while substances that have a positive effect on health will be retained at acceptable levels. The Nordic countries aim to ensure that natural poisonous substances are not present in dangerous amounts and that new ones do not develop in connection with the production of new plant types.

²⁶ Hazard Analysis of Critical Control Points.

²⁷ Include pesticides, veterinary pharmaceuticals and detergents and disinfectants.

Efforts will be made to increase levels of knowledge about natural toxic substances among food company employees and consumers at large through education and information programmes. To support this initiative further research will be needed.

8.4.6 Strengthen efforts to prevent, and increase knowledge about, diet-based allergic reactions

The Nordic countries will seek to limit food-induced allergic reactions through the adoption of preventive measures. Prevention will be achieved *inter alia* through information to companies and consumers about food ingredients. Other measures include adequate food labelling and the inclusion in producers' own quality control programmes of allergens and substances known to cause intolerance reactions.

The Nordic countries should press for the introduction of a rule requiring general practitioners to report cases of allergy as they now are in cases of diseases caused by micro-organisms.

8.4.7 Increase awareness of the connection between diet, nutrition and health

The Nordic countries are actively seeking to motivate their citizens to adopt healthy food and exercise habits by providing more extensive information, particularly about the importance of reducing sugar and fat in their diet and increasing their intake of fruit and vegetables. Healthy school meals increases the likelihood that pupils will adopt, and keep up healthy food habits in adult life.

Greater awareness of the connection between diet, nutrition and health will be given priority. The Nordic countries will seek to ensure that basic knowledge of the connection between diet, nutrition and health forms part of school tuition and is supplemented by easily accessible public information of importance to all citizens.

It is important to emphasise that the diet message – based on Nordic nutritional recommendations – and the goals for a sustainable Nordic region support each another. Consumers should be encouraged to choose food products that help reduce consumption of energy and finite resources and cut back on the emission of hazardous substances into the air and water. It should also be emphasised, as an environmental consideration, that consumer choice has a direct effect on the openness of the countryside.

Producers of ready-cooked food in industry, catering departments and restaurants/eating places must be encouraged to develop meals with a balanced nutritional content.

It is essential that efforts include assessment of enriched food products²⁸, and that these are prompted by the recognition that too large an intake of nutrients can have adverse effects on health. The introduction of new types of food with specially advertised health effects will require special initiatives.

8.4.8 Traditional food

The Nordic countries are anxious to improve the dissemination of information about traditional food in and between their countries. This will encourage the promotion and further development of the region's common cultural heritage and an appreciation of traditional Nordic food in the Nordic countries and local communities, while allowing resources to be used more fully and efficiently.

²⁸ Food to which nutritional substances, including micro-nutritional substances, have been added.

8.4.9 Strengthen traceability and producers' own food safety programmes

All companies must draw up their own operational HACCP-based control programmes in accordance with Codex guidelines²⁹. There must be greater traceability and information about potential risks. The number of food products that do not comply with existing regulations must be marginal.

The Nordic countries will be required to support companies' own control systems, *inter alia* by defining what an efficient HACCP-based control programme entails, and by ensuring that the analytical methods required are available.

8.4.10 Expand research-based knowledge on food safety

The Nordic countries must maintain and extend research-based knowledge relating to food safety, be proactive and anticipate problems. Research into food safety will therefore be stepped up. It must focus on building up knowledge generally about health aspects of food such as fish.

The Nordic countries must together seek to ensure that priority is given in international forums to risk assessment in important areas, contribute to the development of better risk assessment models, coordinate Nordic research and carry out Nordic risk assessments.

The Nordic countries must work to improve coordination and integration of national and regional food safety research, to the benefit of consumers. This can be achieved *inter alia* through participation in the ERA network and SAFEFOODERA.

8.4.11 Strengthen dialogue with consumers

The Nordic countries will strengthen efforts to maintain open risk communication, and ensure that correct information is incorporated in schoolbooks, other textbooks, cookery books, cookery programmes/articles in the media, etc. Public authorities and companies should seek to increase and improve their information efforts.

The Nordic countries will take steps to ensure that basic school tuition covers all aspects relevant to food safety.

²⁹ Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its application, Annex to CAC/RCP 1-1969, Rev. 3 (1997).

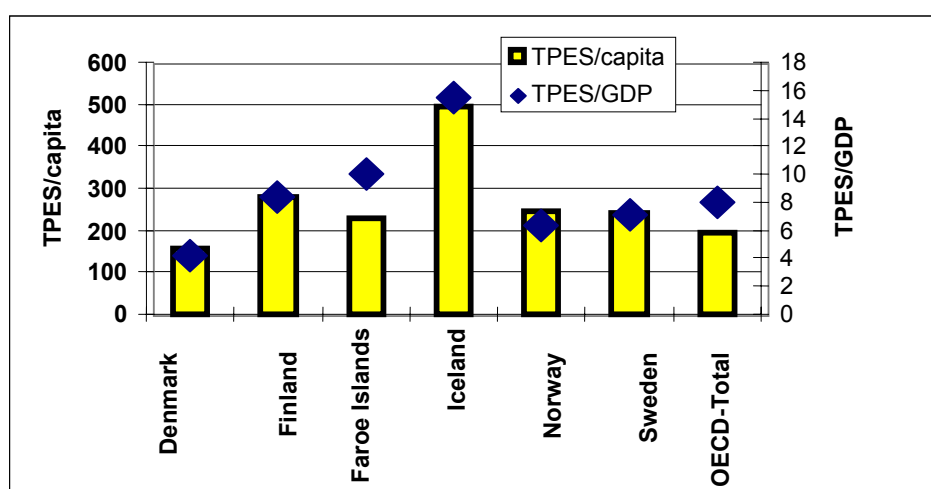
PART 2 – INTERSECTORAL ACTION AREAS

9. Energy

9.1 Development and challenges

The Nordic countries possess extensive energy resources and enjoy a high standard of living, as a result of which energy consumption per capita in the region is slightly higher than the OECD average. This is also due to climatic and geographical factors. Energy consumption in relation to production, however, is slightly lower (see Figure 9.1).

Figure 9.1. Energy consumption (TPES in GJ) per capita och energy consumption per unit of GDP (1995 USD) in 2001.



Source: IEA: Renewables Information 2003.

Domestic energy consumption in the Nordic countries, particularly in Norway and Denmark, rose considerably in the 1990s, principally due to oil and gas extraction. Overall energy consumption in the Nordic countries only increased by an average of 0.9 per cent between 1990 and 2000, whereas GDP generally showed a significant rise over the same period. This relatively limited increase in Nordic energy consumption is attributed to significant improvements in energy intensity due to consumption-reducing measures, technological advance and structural change.

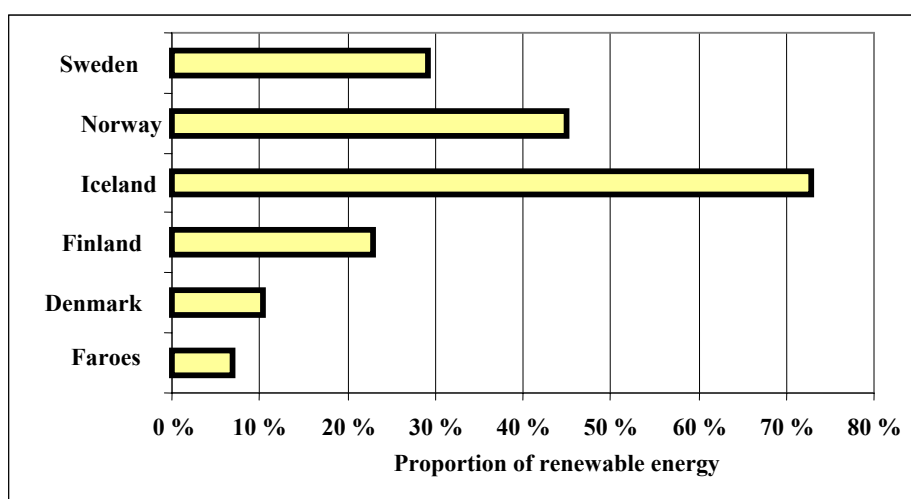
A secure energy supply is important for maintaining a high rate of economic growth and ensuring that a modern society works as it should. One way of ensuring security of sup-

ply is to pursue active policies aimed at improving efficiency in all areas of energy use. More efficient energy utilisation also reduces the sector's impact on the environment through atmospheric emissions and discharges into water, etc., and through encroachments on virgin land. The most important and most demanding task facing the Nordic countries is the reduction of greenhouse gas emissions from the energy sector. There are also a number of transboundary environmental challenges in the energy field, such as climate change and acidification, including the reduction of carbon dioxide (CO₂), nitrogen oxides (NO_x) and sulphur dioxide (SO₂), and the risks associated with obsolete nuclear power plants in the region's immediate vicinity (see Chapter 4).

The Nordic countries aim to limit the energy sector's contribution to environmental problems; a number of policy levers, including taxes, charges, direct regulation and support measures, have been brought into operation to achieve this goal. The transboundary environmental challenges will require cooperation within and outside the region.

A crucial challenge in connection with the task of moving the energy sector towards sustainability is to increase the use of renewable energy sources. Renewable energy accounts for a significant proportion of total energy consumption in the Nordic countries (see Figure 9 and Box 9.1).

Figure 9.2 Renewable energy as a proportion of gross energy consumption (TPES) in 2001.



Source: IEA: Renewables Information 2003.

The transport sector accounts for a significant share of fossil fuel consumption in the Nordic countries. The question of switching to a transport system that is sustainable in the long term, including measures to promote the use of new technology and renewable fuels, is discussed in Chapter 10 (Transport).

Inter-agency cooperation on energy matters has long been practised in the Nordic area, and has worked well. Cooperation in the electricity sector and power trading are both important, as linked grids are an aid to environmental improvement in the region.

International agreements and closer cooperation with non-Nordic countries, especially in the EU and the Baltic Sea states, are increasingly shaping Nordic energy policies and systems. Implementation of the EU directives on the electricity and gas markets, along

with the entry of the Baltic states and Poland into the Union, has resulted in greater market integration and liberalisation in the energy sector. Consequently, closer cooperation and the integration of Nordic energy systems with adjacent areas will be a matter of key importance for the Nordic region. Such a move would also afford greater opportunities for ensuring sustainable development of the energy sector in the Nordic region and adjacent areas.

During the 1990s, energy consumption trends in the new democracies to the East differed markedly from those of the Nordic countries, showing a drop of 30–50 per cent. The drop was particularly sharp in the years up until 1993, since when consumption has stabilised and began to rise once again as economies have picked up. Energy intensity has declined in recent years, but the countries of Eastern Europe are still burdened by obsolete and environmentally problematic production plant requiring extensive investment if they are to attain acceptable standards, including environmental standards

Renewable energy in the Nordic countries

Sweden

In Sweden, renewable energy accounts for a relatively large share of total energy consumption. Hydroelectric power accounts for about half of all electricity produced. Bioenergy accounts for almost half of total energy consumption, excluding the transport sector, and its share is steadily increasing. Wind power is still very limited in absolute terms, but is on the increase. The growth in bioenergy and wind power use is largely a result of energy and climate policy initiatives. On 1 May 2003, Sweden introduced a system of electricity certificates (green certificates) that replaced the bulk of government funding for renewable energy sources. Sweden also helps fund research and development in new technology and new expertise in an effort to reduce costs and eliminate both harmful environmental effects and other obstacles to greater use of renewable energy sources.

Iceland

Starting in 1970, Iceland has switched from an energy consumption based largely on coal and oil to one based primarily on hydroelectric power and geothermal sources. By 1990, the latter accounted for about 90 per cent of all stationary energy use, and by 1998 the figure had risen to 92.1 per cent. In Iceland, 98 per cent of all home heating is derived from renewable energy sources, i.e. geothermy or electricity. Two thirds of the country's total energy consumption is now based on renewable energy sources.

Finland

Renewable energy as a proportion of total energy consumption in Finland is approx. 24 per cent. The most important renewable energy source is bioenergy, and here the country is one of the leading industrial nations in consumption terms. The paper and pulp industry has a key place in Finnish manufacturing, and bioenergy meets approx. 55 per cent of its fuel needs.

Norway

The Norwegian energy situation is special as approx. 45 per cent of the country's energy consumption and over 99 per cent of its electricity production is derived from renewable energy sources. This is because virtually all electricity in Norway is produced by hydroelectric power. The country is the sixth biggest hydroelectric power producer in the world and the largest in Europe. It has become highly skilled in managing all aspects of hydroelectric power projects, from the planning stage to the delivery and installation of hydroelectric equipment. Today, Norwegian enterprises are involved in projects in many parts of the world. New sources of renewable energy have also been accorded high priority in the planning of Norway's future energy supply.

Denmark

For every passing year, renewable energy accounts for an increasing share of Denmark's total energy consumption. In 2002, production of renewable energy accounted for 12.4 per cent of the country's temperature-corrected gross energy consumption, compared with 6.4 per cent in 1990 and 3.4 per cent in 1980. Biomass accounted for 43 per cent of all renewable energy production, while waste and wind power accounted for 32.5 and 17 per cent respectively. An increasing share of Denmark's electricity consumption is met by hydroelectric power. In 2002, wind power accounted for 13.9 per cent of the country's electricity supply, with a capacity of 2,886 MW. Wind power capacity and production do not grow at the same rate, however, as production in a given year is largely dependent on wind conditions.

Greenland

Greenland has considerable hydroelectric potential, but only a part of it can be exploited, due to the long distances and the Arctic climate in the country. Greenland currently has one hydroelectric power plant in operation at Bukseffjorden, which supplies Nuuk. Renewable energy accounts for 9 per cent of total energy consumption in the country. A hydroelectric power plant under construction on the outskirts of Tasiilaq on the east coast will have an annual output of 6 GWh. Another hydroelectric plant is being built to supply Qaqortoq and Narsaq in southern Greenland from 2008, with an estimated output of 27.5 GWh/year. Once the plants in Tasiilaq and Qorlortorsuag are online, energy consumption from hydroelectric power will total approx. 211.5 GWh. Renewable energy sources will then account for about 10 per cent of Greenland's total energy consumption.

Åland

At present, Åland has 14 wind power generators with a capacity of 500–600 kW and producing around 7 per cent of the territory's energy supply. The aim is to raise the level of self-sufficiency to 20 per cent by the year 2015. District heating sales total about 90 GWh, and local biofuels such as chips account for 30 per cent of total production. Åland currently has two biomass-fired heating plants of 5 MW and 3 MW respectively. The upgrading of one of these plants by an additional 7.2 MW of heat generation and 1.7 MW of electricity generation is currently under review. If everything goes to plan, the enlarged plant will be ready in 2006.

The Faroe Islands

The Faroes are a remote group of islands dependent almost exclusively on fish and the fishing industry. To a large extent they are obliged to use fossil fuels both for this sector and for transport, refrigeration and home heating. Furthermore, the limited inter-district power network is relatively vulnerable to fluctuations in temporary energy input such as wind power and wave power. Oil consumption in the Faroe Islands was 232,000 tons in 2002, of which fisheries, transport and aviation accounted for 57 per cent and electricity production for 15 per cent. In 2004, the ratio of oil to renewable energy as a basis for electricity production will be 60–40. Of the 40 per cent renewable share, 35 per cent will come from hydroelectric power and 5 per cent from wind power. Practical application of solar power and wave power is still only at the trial stage.

Energy development in the Nordic area in the 1990s benefited from the fact that energy consumption increased by a considerably smaller margin than economic growth. However, limiting the growth of energy sector emissions in pursuit of sustainable development remains a major challenge. As a region, the Nordic countries have failed to reduce their CO₂ emissions since 1990. On the other hand, they have taken active steps to remedy the situation, including the introduction of CO₂ charges (green taxes), which are among the highest in the world. In addition, large sums have been invested in promoting alternative sources of renewable energy. Other initiatives include the introduction of general provisions that make it possible to establish CO₂ management facilities at fossil-based power plant and other major emission points. This represents an investment in the type of technology that will be of particular value in the fight against climate change. Reduction of CO₂ emissions, however, will again pose a severe challenge for the Nordic countries. The initial aim will be to meet the goals laid down in the Kyoto protocol, which imposes ceilings on greenhouse gas emissions for the period 2008-2012.

To encourage member states to honour their emission commitments under the Kyoto protocol, the EU is introducing an emission trading allowance scheme. Participation will be mandatory from 2005. It is not yet clear whether Norway and Iceland will be covered by the scheme through the EEA agreement (see Chapter 4, Climate change and atmospheric pollution).

9.2 Implemented measures

The Nordic countries have a long tradition of working together on energy issues. Both nationally and from a joint Nordic perspective, this cooperation has yielded benefits that would not otherwise have been achieved.

The Nordic energy sector is highly developed, and the similarities and dissimilarities between the countries make for efficient use of the energy system from a regional perspective.

The overall goal of Nordic energy cooperation is to promote an efficient, competitive, safe and sustainable supply of energy in an economically and environmentally responsible way. Joint Nordic energy policy in recent years has focused on three core areas:

- Electricity market issues
- Climate concerns
- Regional cooperation (The Baltic Sea region and Northwest Russia)

These core areas are deemed essential to the achievement of the overall goals, and explicit guidelines and concrete objectives have been drawn up for these areas. The use of renewable energy, more efficient energy utilisation and gas market resources are also key elements, both regionally and in the energy policies of the individual countries. In the long term, joint energy research can be expected to contribute to development in these respects and with regard to efforts in the core areas.

The overall energy policy goals of the individual Nordic countries largely correspond. However, there may be a number of differences with regard to certain specific national goals and policy instruments.

The energy industry in the Nordic region is modern and highly developed. The region is an international leader in several respects – its high proportion of renewable energy consumption, primary hydroelectric power, extensive use of biomass and the high safety standards of its nuclear power plants. Similarly, the establishment of sectoral framework conditions and close cooperation between government bodies and energy actors are important contributing factors to the development of sustainable development in the energy sector.

In recent years, Nordic efforts have been channelled increasingly through the Baltic Sea Region Energy Cooperation (BASREC), which in addition to the Nordic countries includes the three Baltic states, Poland, Germany, Russia and the EU. Hitherto, results from within the BASREC framework have proved instrumental in helping to realise the aims of the EU Northern Dimension. It has been pointed out that broader cooperation could yield significant benefits in a number of important areas such as electricity and gas supply and trading, reduction of greenhouse gas emissions, more efficient energy utilisation, increased use of co-generation plant and district heating, and the harmonisation of framework conditions.

Electricity from hydrogen in Iceland

Iceland's New Energy Company, together with the Icelandic government and a number of large international enterprises, is engaged in a pilot project in Iceland involving the practical application of fuel cells. The principal advantage of fuel cells is that there are virtually no emissions when the energy is produced, only steam. Three buses are already running on fuel cells in the capital, Reykjavik. The aim is to extend the operation to cars and fishing boats. The purpose of the project is to test the viability of hydrogen as an alternative to fossil fuels. In many respects, Iceland is an ideal place for hydrogen production. The process is extremely power-intensive and Iceland has cheap sources of energy that are perfectly suited to this type of production.

9.3 Long-term goals

The general long-term objective of Nordic energy cooperation is to ensure an efficient, competitive, safe and sustainable supply of energy. Energy resources must be used efficiently to boost employment and strengthen the economy without jeopardising the environment. The energy system must be so designed that it helps reduce global emission levels of greenhouse gases and other atmospheric pollutants, and encourages greater use of renewable energy sources.

The long-term goals of regional energy cooperation are a stronger community of values, greater economic cooperation, and sustainable development in the Nordic area. These goals are implicit in the Nordic prime ministers' Bergen Declaration and in the vision expressed by the Nordic energy ministers, their colleagues in the Baltic Sea region and the European Commission in Stavanger in 1998: *"Guided by a common vision of the Baltic Sea region as an area of democracy, stability and open interacting economies, we are committed to making energy co-operation a key vehicle in generating further progress. It is our conviction that energy should remain a focal point in the co-operation activities of the Baltic Sea region. Our energy co-operation in the Baltic Sea region may serve as a model for other areas."*

On the basis of the general objectives set out in the Nordic prime ministers' declaration on a sustainable Nordic region (November 1998), a number of specific long-term goals for the energy sector were included in the original sustainability strategy. These goals have since been somewhat revised. Another change in relation to the previous strategy is that long-term goals for gas use and for the use of hydrogen as an energy carrier have now been specified. Accordingly, the long-term goals for the energy sector are as follows:

- The establishment of a basic level of energy service provision for all, based on modern technology.
- Limit values for emissions and other pollution are to be reviewed, and the energy sector is to assume its share of the responsibility for ensuring that critical load levels are not exceeded, in such areas as climate change, acidification, eutrophication and the accumulation of ground-level ozone
- A substantial reduction in greenhouse gas emissions by 2020; the Baltic Sea region is to serve as a model.
- Fossil resources are to be used in a responsible way from the standpoint of environment protection and future availability.

- Risks from nuclear power plant and nuclear waste are to be minimised, and resources are to be made available for the decommissioning of unsafe nuclear plant in the adjacent areas.
- A significant reduction in the use of coal and oil in central and local co-generation plants.
- A long-term strategy for improved security of supply must include the direct use of gas for energy purposes and gas power plants in which CO₂ is responsibly managed.
- A significant increase in the use of renewable energy sources. However, renewable energy must be utilised in a responsible manner with due consideration for its regeneration capacity and environmental impact, and for the wellbeing of those living in the areas concerned.
- The use of hydrogen is to be further encouraged in the Nordic region.
- Significant advances are to be made in all sectors in respect of efficient energy utilisation and energy conservation without adversely affecting competitiveness.
- Legislation, administrative practice and other general conditions are to be developed and harmonised in order to facilitate energy exchange between countries and make investment in the energy sector more attractive.
- Closer integration of the energy market in the Nordic region, adjacent areas and the EU, highlighting sustainable energy production as an important competitive factor.
- Development in the energy field is to be based on democratically based decisions, openness and broad participation at all levels through local, regional and national cooperation.

9.4 Goals and initiatives for 2005–2008

In connection with previous and ongoing Nordic and regional processes, a wide range of initiatives on sustainable development in the energy sector have been proposed, and, to a great extent, implemented. The goals and measures for 2005–2008 are based on initiatives that build on these processes, but go one step further.

The goals are described in closer detail below:

9.4.1 Greater use of cost-effective instruments, and the harmonisation of policy levers aimed at the further development of a sustainable energy sector and reduced environmental impact from Nordic energy consumption

Provided that the market framework is efficient and environmentally tenable, the actors have sufficient incentive to comply with the long-term objectives, and favourable financing terms are available for a transitional period, the implementation of a sustainable energy sector can largely be left to energy market players.

The linking of the Nordic electricity supply system also lays the ground for better environmental outcomes. Efforts should be made to ensure cost effectiveness by collaborating on the development of policy instruments that recognise environmental costs associated with the production and consumption of electricity, while taking the international competitiveness of the Nordic electricity and industrial sectors into account.

The Nordic countries will intensify cooperation at agency level with a view to producing an appropriate and cost-efficient framework for market development that will take into account what is happening in this area in the EU. Where required, the Nordic countries are to seek greater harmonisation of initiatives.

9.4.2 Further development of Nordic cooperation on energy trading, infrastructural expansion and security of supply

Denmark, Finland, Norway and Sweden exchange electricity in a market setting through the Nordic power exchange, Nord Pool. This means that what happens in one country affects other countries, and that the power balance in an individual country is not determined by national conditions alone.

In recent years, investment in new electricity capacity in the Nordic region has declined considerably, while demand has risen. This has led to greater capacity utilisation in production and transmission, and has yielded returns in the form of investment savings. However, it also means that capacity limits are reached sooner, especially when hydroelectric power production flags. This means that greater attention will need to be focused on improving security of supply in the Nordic electricity market. The Nordic countries should intensify cooperation at agency level to determine what measures are required in order to ensure long-term security of supply in the region.

Over the next few years, new transmission links to other parts of Europe and the Baltic Sea region will have an impact on the Nordic energy market. The EU rules governing the single market in the energy sector will be of considerable importance for the future of Nordic cooperation in pursuit of sectoral realignment.

Rational, efficient and environmentally sound expansion of infrastructure in the Nordic and Baltic Sea regions will necessitate regional cooperation both between agencies and between agencies and energy producers. Cooperation on funding for the development of framework conditions for infrastructural financing and institution-building in the new democracies will also be needed. The Nordic countries are supporting such moves within the BASREC framework.

The BASREC work plan for the electricity sector up until 2005 emphasises the need to improve energy supply security, and focuses on how to make renewable electricity both more competitive and more widely available. This is essential if the energy sector is to move in a more sustainable direction.

9.4.3 Implementation of energy projects in the Baltic Sea region under the Testing Ground Agreement

There is to be a substantial reduction in greenhouse gas emissions by 2020. The Baltic Sea region is to serve as a model. At the meeting of energy ministers from the Baltic Sea states held in Vilnius in November 2002, it was decided to use the Baltic Sea region as a testing ground for the Kyoto protocol's flexible mechanisms. Intensive efforts have been made to move this joint project forward. The general framework for this cooperative endeavour is now provided by the joint Testing Ground Agreement. A Testing Ground Facility has been established as a source of funding for the promotion of joint implementation projects in the Baltic Sea region (see Chapter 4).

9.4.4 Developing policies to promote more efficient energy utilisation, increased use of renewable energy sources, hydrogen, and fossil power plants with CO₂ management facilities

If they are to achieve more efficient energy utilisation and increased use of renewable energy sources in the region, the Nordic countries will need to cooperate on the development of policies, policy instruments and technologies.

In the continuing work in this area in the Baltic Sea region, particular attention is being focused on bioenergy. A working group has been set up under the Nordic Council of

Ministers to promote bioenergy use both in the region and in adjacent areas. In the Nordic countries, active measures of various kinds have been taken to encourage the use of renewable energy sources. These includes green certificate (electricity certificate) schemes, which have already been introduced in Sweden and are being considered in Norway. The Nordic Council of Ministers has launched projects to assess the impact and construction of various funding systems for renewable energy development and the prospects for introducing a joint Nordic scheme for green certificates. These efforts will continue throughout the period.

Efficient energy utilisation is crucial to sustainable development. It also contributes to economic growth, strengthens competitiveness and ensures better security of supply, both in both the short and long term.

Other initiatives include the introduction of framework conditions that make it possible to install CO₂ management facilities at fossil-based power plants and other major emission points. This represents investment in a technology that will be of considerable value in meeting the challenge of climate change.

Hydrogen could prove to be one of tomorrow's most important energy carriers. It can be used as a fuel in the transport sector, for large-scale co-generation production and for local energy production, i.e. for what is termed distributed energy supply. Its use does not involve any environmentally harmful emissions into the atmosphere, as its principal combustion product is water. Conditions for increased use of hydrogen in the Nordic region are favourable, and Nordic actors have both a solid base on which to build and a good chance of asserting themselves in the international market.

9.4.5 Greater Nordic cooperation aimed at strengthening the coalition of like-minded countries formed at the World Summit on Sustainable Development in Johannesburg (WSSD) to promote global use of renewable energy sources and more efficient energy utilisation.

The WSSD adopted general guidelines aimed at boosting investment in cleaner and more efficient use of fossil fuels and increasing the use of renewable energy sources worldwide. The EU and a group of like-minded countries known as the Johannesburg Renewable Energy Coalition (JREC) issued a special declaration, The Way Forward on Renewable Energy. Today, the coalition has over 80 members. Given the Nordic countries' leading position in the sphere of renewable energy production, it is natural for them to set their stamp on further work within the JREC. An international conference on renewable energy was held in Denmark in September 2003 with the aim of strengthening cooperation within the coalition. In June 2004, an international conference held in Bonn to promote the use of renewable energy sources and more efficient energy utilisation provided a forum for discussion of further ways of promoting renewable energy sources.

9.4.6 Wider cooperation on research and development

Nordic research cooperation in the energy field is the responsibility of the Nordic Energy Research centre. During the current present period of operation (2003-2006), flexibility at the institution is to be increased *inter alia* by the introduction of possible additional instruments for supporting energy research. Research activities must also support the sector's core areas. Five thematic areas have accordingly been selected for the purpose:

- integration of the energy market
- renewable energy sources

- efficient energy utilisation
- the hydrogen society
- the impact of climate change on the energy sector

The overall aim of the Nordic Energy Research programme is to help provide a scientific basis for the cost-efficient reduction of energy consumption and the development of new renewable energy sources and environmentally sound energy technology. This is to be achieved by enhancing basic skills at universities, colleges and other research institutions, and by creating efficient research networks between the Nordic countries, between research and enterprise, and involving regional players. A further aim is to build up the international competitiveness of Nordic research environments and encourage interaction with the regions surrounding the Nordic countries, i.e. the Baltic Sea region and separate Arctic territories.

10. Transport

Long-term sustainable social development places a number of demands on the transport system:

Economically sustainable development requires a transport system of high quality, reliability, mobility and high capacity at national and international levels.

Socially sustainable development presupposes good mobility for all sections of the population and safe transport so that life and health are not at risk.

Environmentally sustainable development assumes that emissions and waste from the transport system do not jeopardise people's health or the functioning of ecosystems. Energy utilisation in the transport system must be more efficient than is the case today, and the use of non-renewable natural resources must be replaced by the use of renewable alternatives.

These are not new demands. What is new, and poses a major challenge, is the need to coordinate the economic, social and environmental dimensions of sustainable development. All three dimensions are interdependent, none can alone produce long-term sustainable development.

10.1 Development and challenges

Large parts of the Nordic countries are sparsely populated with long distances to major markets. The Nordic countries are therefore highly dependent on an efficient transport system. Over time, the extension of the transport infrastructure and increasingly rapid means of transport have meant that mobility has considerably improved. These gains in mobility have not always just meant shorter transport times but have also facilitated more dispersed settlement and other structural changes, e.g. in the form of increased specialisation in the business sector. This has been and continues to be an important aspect of the transport system's contribution to economic growth.

However, negative effects may also be noted. In many cases distances to work and services have increased. Mobility for some sections of the community has actually deteriorated. This applies, for example, to households without access to a car, disabled people and children.

Disparities exist between women and men in terms of accessibility to the transport system and access to a car. This means that women's options and access to sections of the labour market, etc. are narrower than for men.

A measure of this increased mobility is the constant and, at during some periods, vigorous expansion in transport activity involving both people and goods. The main increases have been in private car travel and road haulage. Railways have long had difficulty meeting the increased demand for flexible transport solutions. However, the number of passengers travelling by train has risen in recent years. In the Nordic countries as a whole, private cars still account for about 80 per cent of total travel in terms of measured in transport work.

Development forecasts indicate continued strong traffic growth³⁰. In the passenger transport sphere, car travel is expected to continue growing. Although car travel is increasing most in absolute terms, strong relative growth is expected for rail and air travel. As for goods transport, road haulage is expected to show most growth in absolute and relative terms.

Unless countermeasures are taken, growing road haulage activity risks further exacerbating congestion on the continental road network. This will also have negative repercussions for Nordic trade as the major trade and transport flows go south to the continent. In the Nordic countries, congestion is almost entirely limited to the road network in metropolitan areas. However, some railway lines have capacity problems.

From the environmental standpoint, the biggest challenges for the future are 1) to halt the present trend of rising carbon dioxide emissions in the transport sector, 2) to reduce noise disturbance, and 3) to cut back on emissions of air pollutants detrimental to health in population centres. In this connection, efforts should also be made to promote eco-driving, i.e. driving in an environmentally friendly manner, thereby helping to reduce fuel consumption.

In all, the transport sector is responsible for about 25 per cent of total carbon dioxide emission in the Nordic countries. Within this category, road traffic is by far the biggest source. The strong growth in road traffic will lead to increased emissions of carbon dioxide. As other sectors reduce their emissions, the transport sector's share of total carbon dioxide emissions will be even greater in the future.

Traffic noise is both a local and a national problem. Despite protective measures, the number of people exposed to traffic noise above recommended levels has not diminished appreciably. The number may even have increased. It is difficult to give exact figures since building and traffic continually change and survey methods are in constant development. Increased traffic volumes have meant that protective measures in the form of noise insulation, sound barriers and walls have only managed to reduce the additional numbers of people exposed to noise. Nor have the stiffer noise requirements imposed on cars and lorries succeeded in reducing noise disturbance, as they have a limited effect on real traffic noise.

Under a new EU Directive on external noise (the Noise Directive) noise from major roads, railways, airports and noise in major towns will be mapped out. Strategic noise maps and action plans will be drawn up and the general public will be involved in the process. The survey will be carried out for the first time in 2007–2008, and subsequently every 5th year.

Development continues to be favourable with regard to emissions of nitrogen oxides, hydrocarbons and sulphur oxides in the transport sector. The impending tightening of EU exhaust emission requirements for private cars (2005) and heavy goods vehicles (2005 and 2008) will reinforce this positive development.

Stiffer exhaust emission requirements have also helped improve air quality in Nordic built-up areas. The biggest remaining problem is the high level of particle pollution and high concentrations of certain hydrocarbons in these areas. The Nordic countries have

³⁰ The EU Commission's White Paper on the Common Transport Policy predicts that goods transport in the EU will increase by 38 per cent and passenger transport by 24 per cent on 1998 levels by 2010. During the same period road haulage is estimated to increase by 50 per cent.

long worked consistently to improve traffic safety. By international standards, they have made substantial progress. However, fatalities and serious injuries in the road transport system remain one of the principal public health problems in the Nordic region. Children are a particularly vulnerable group. Further efforts in this area are therefore necessary if we are to achieve sustainable development.

The enlargement of the EU to include 25 member states has a number of implications for the Nordic countries' transport policies. New markets will open up and new trade patterns will be established, in the Baltic Sea region, for example.

Shipping has a key role to play in this connection. Sea transport is very energy efficient and requires little infrastructural investment. However, if it is to become an even more attractive option in a transport system which is sustainable in the long term, further measures must be taken. A priority issue is dealing with oil discharges from shipping. Continued efforts will also be needed to cut down on sulphur and nitrogen oxide emissions from shipping.

10.2 Implemented measures

Measures have been taken at both national and international levels to speed up the transition to a transport system which is sustainable in the long term. A number of examples of international initiatives and decisions are presented below. The Nordic countries have been proactive or played a prominent role in several cases.

Those interested in national initiatives are referred to the national follow-up reports.

The EU plays a key role in international efforts. The meeting of the European Council in Göteborg in June 2001 saw the adoption of a strategy for sustainable development. Transport was designated one of four key areas. The strategy establishes among other things that "a sustainable transport policy should tackle rising volumes of traffic and levels of congestion, noise and pollution and encourage the use of environmentally sound modes of transport as well as the full internalisation of social and environmental costs."

In October 1999, during the Finnish presidency, EU transport ministers adopted a strategy for the integration of environmental and sustainable development concerns into transport policy (the Cardiff process). A first review of the strategy was carried out by the Council in April 2001 (during the Swedish presidency) and a second in December 2002 (during the Danish presidency).

In September 2001, the European Commission presented a White Paper on the common transport policy for 2010. Though it does not contain concrete proposals, the White Paper lays down guidelines and frameworks for future proposals. A mid-term review of the Common Transport Policy is planned in 2005.

Besides these more policy-oriented decisions, the EU has in recent years adopted a number of directives and regulations of significance for the achievement of a sustainable transport system. These are aimed *inter alia* at reducing emissions of air pollutants from motor vehicles, increasing bio-fuel use, affording a better picture of the number of people exposed to noise, reducing the use of noisy aircraft, phasing out single-hull oil tankers and revitalising European railways. Undertakings by the European, Japanese and Korean car industries to reduce emissions of carbon dioxide from private cars by 25

per cent of 1995 levels by 2008 and 2009 are of particular significance for the reduction of carbon dioxide emissions from the European transport sector.

Other international organisations working for the transition to a sustainable transport system include the International Civil Aviation Organisation (ICAO), IMO, the European Conference of Ministers of Transport (ECMT), UNECE and the WHO. In July 2002, UNECE and the WHO initiated a pan-European programme for transport, environment and health (THE PEP).

10.3 Long-term goals

The long-term goal is to build a sustainable transport system³¹, which:

- allows the basic access and development needs of individuals, companies and societies to be met safely and in a manner consistent with human and ecosystem health, and promotes equity within and between successive generations,
- is affordable, operates fairly and efficiently, offers a choice of transport mode, and supports a competitive economy and balanced regional development,
- limits emissions and waste to levels which the planet is able to absorb, uses renewable resources at or below their rates of renewal, and uses non-renewable resources at or below the rates of development of renewable substitutes while minimising land use and noise impacts.

The changeover to a sustainable transport system will require commitment and extensive inputs from many quarters. Practically all sections of society have an important role to play. Their efforts must be supported by consistent, long-term policies. All political decisions must take long-term economic, social and environmental impacts into consideration.

10.4 Goals and initiatives for 2005–2008

10.4.1 Promote coordinated, efficient transport systems – for people

Continued efforts are needed to increase the mobility of people without access to a car, disabled people and children. It is also important in this connection to adopt a gender equality approach so that the transport system meets both men's and women's transportation needs. The same applies to children, who must be able to travel safely on their own in the transport system. The quality of public transport needs to improve and become more customer-oriented. Efforts must be made to improve opportunities to walk or cycle. Programmes for Mobility Management should be supported and developed.

To achieve these goals, efforts at regional and local level will be needed initially. Continued exchanges of experience at Nordic level will also be important.

³¹ The following definition is identical to the definition of a long-term sustainable transport system agreed on by EU transport ministers on 4 April 2001 (doc. No.7329/01 TRANS48ENV136).

10.4.2 Promote coordinated, efficient transport systems – for goods

To achieve long-term sustainability in the sphere of goods transportation, the various modes of transport must become more efficient and better coordinated. Governments can encourage such improvements *inter alia* through fair, effective pricing and infrastructural contributions. The railway system needs to be revitalised and made more competitive. Of particular interest are prices and functions at terminals and ports. International cooperation, particularly in the EU, is crucial to success in this area. The Nordic countries should aim for continued deregulation and common technical standards for European railways within the framework of EU and EEA cooperation. Joint efforts at Nordic level to boost demand for transportation that is quality assured from the environmental and traffic safety standpoints should be intensified.

10.4.3 A sustainable infrastructure

The infrastructure must be adapted to meet the needs of a transport system which is sustainable over the long term. Investment in new infrastructure should always be tested against the four-stage model, in which different alternative measures are examined in the following order:

- 1) Measures that can affect the need for transport and choice of transport mode,
- 2) Measures that result in more efficient use of existing networks and vehicles,
- 3) Limited rebuilding measures,
- 4) New investment and major rebuilding measures.

Investment in infrastructure is primarily a national concern. The Nordic countries, however, have a common interest in the development and implementation of the Trans-European Network for Transport (TEN-T). Common priority projects for the Nordic countries include the Nordic triangle, the Baltic Sea maritime motorway and a fixed link across the Fehmarn Belt.

Continued exchanges of experience aimed at developing planning aids such as strategic environmental assessments (SEA) and objectives and measures for the natural and cultural landscape are also an important form of cooperation for the Nordic countries.

10.4.4 Promote the use of new transport and fuel technology

New technology is indispensable if transport systems are to be sustainable over the long term. The development of more environmentally sound and energy-efficient transport modes of all kinds must continue. New technological solutions are needed to reduce traffic noise at source. Increased use of renewable fuels is essential. Alcolocks, seat belt reminders, support for intelligent speed adaptation and other technical support systems are essential to traffic safety. New technology can also be used to increase the proportion of intermodal travel and transportation.

Technical requirements and standards are set by international bodies, primarily in the EU. The Nordic countries should continue to be proactive in this context. In addition, the Nordic countries can speed up development by creating a market for new technical solutions and more environmentally sound and energy-efficient modes of transport, through financial incentives, public procurement, information campaigns, etc.

10.4.5 Develop efficient, safe and environmentally sound sea transport in the Nordic region

The Nordic countries should continue their endeavours to achieve global agreements on more stringent safety and environmental requirements for shipping. The Baltic Sea has in principle been classified by the IMO as a particularly sensitive sea area (PSSA). There is reason to believe that the transport of crude oil will increase in the Nordic sea areas as a result of plans to expand oil drilling operations in the Barents Sea and in Northwest Russia. The heightened risk of accidents – one of the results of the increase in crude oil transport – must be met by preventive measures including emergency preparedness that can limit environmental damage where accidents occur and efforts to promote more binding international cooperation in the IMO and other bodies.

Pending global agreements, the Nordic countries should force the pace of development in regional forums. Economic incentives should be used to promote the use of low-sulphur bunker oil and catalysts. The Baltic Sea motorways concept should be developed.

10.4.6 Introduce effective pricing in the transport sector

A precondition of a sustainable transport system is fair and effective pricing that internalises the external costs that traffic gives rise to. The long-term aim is to ensure that transport policy taxes and charges are commensurate with marginal costs to the economy, i.e. the additional costs incurred by society that arise whenever an additional vehicle uses the infrastructure. In the short term, tax and charge differentiation may be an effective means of achieving a more sustainable transport system in a cost-effective way.

Within the framework of EU/EEA cooperation, the Nordic countries should seek to ensure that the ongoing revision of the 'Eurovignette' Directive (taxation of heavy goods vehicles) gives member countries an opportunity to introduce a marginal cost-based kilometre tax for heavy goods vehicles.

The EC Directive on trading in carbon dioxide emissions will enable member states to include further sectors and greenhouse gases in the trading system as of 2008. The Nordic countries should examine the possibilities and consequences of including the transport sector (all modes of transport) in CO₂ trading systems from 2008.

10.4.7 Promote a Nordic profile in international contexts

The Nordic countries should step up cooperation in international bodies, in particular the EU, ECMT, OECD, ECE/WHO, IMO and ICAO, in order to stimulate Nordic interest in achieving a sustainable transport system and the integration of environmental and health aspects into transport policy.

10.4.8 Operationalise the concept of sustainable transport systems

Tangible goals, indicators and follow-up systems are needed if the concept of sustainable transport is to become more operational. Work in this area should be based on the EU follow-up system, the Transport Environment Reporting Mechanism (TERM). It is essential that goals, indicators and follow-up systems are mainstreamed into transport policies. At EU level, this applies particularly to TERM, where additional efforts will be needed to develop the mechanism into a policy instrument.

Tools for decision-making which supports sustainable development must be developed. Nordic countries should exchange experience as part of their efforts to implement the EU Directive on Strategic Environmental Assessments (SEA) in the transport sector.

SEA can be developed into strategic consequence assessments, which cover economic, social and environmental aspects.

10.4.9 Promote research and development for a sustainable transport system

The Nordic countries should promote research and development for a transport system which is sustainable in the long term. Where appropriate, research efforts should be coordinated with the EU Framework Programme for Research and Technological Development.

11. Agriculture

11.1 Development and challenges

Although agriculture is practised throughout the Nordic region, conditions for agricultural production vary from one country to another. There are pronounced climatic, topographic, and structural differences from region to region. Conditions can vary widely even within countries. This applies particularly to Sweden, Finland, and Norway, where a general distinction can be made between a northern and a southern dimension for agriculture. In Denmark and southern Sweden, agriculture enjoys some of the most favourable natural conditions in Europe, whereas farming in the Arctic area of the Nordic region is carried out under extremely marginal conditions. Natural conditions vary analogously in the self-governing areas, although they are more uniform within the areas themselves. Agriculture therefore plays different roles and fulfils different tasks and functions throughout the Nordic region. This important premise has informed agricultural policymaking in each of the Nordic countries.

In the marginal agricultural areas, reindeer herding is an important industry. In Norway and Sweden, reindeer herding is reserved for the Sami people. The industry is vital to the preservation of their ethnic and cultural identity. In Finland reindeer herding is practised on a significant scale by the Sami population and other groups. In Iceland and Greenland commercial reindeer herding takes place on a limited scale.

Agriculture faces major challenges on a number of fronts. Pressures include globalisation of the world economy, obligations under international agreements, the development of national economies and growing demands for greater efficiency and innovation in the production of goods and services. The difficulties are clearly reflected in the declining number of active farming units. Projections of present trends indicate that the role of agriculture in land and district settlement policy will be further reduced and know-how, skills, expertise, resources and jobs will be lost. This will give added momentum to the process of centralisation in society and accelerate population movements into central areas, both regionally and nationally.

Dealing with this development will require the application of an active, integrated and locally adapted rural development policy accompanied by structural reforms in the agricultural sector and market-oriented production of goods and services that make full use of the district's entire resource base. Efforts must be made to maintain a decentralised, structurally varied agricultural sector in the Nordic region.

The environmental impact of modern farming methods in the Nordic region is both favourable and detrimental. Agriculture forms and preserves the cultural landscape, which is a valuable part of our natural and cultural heritage. Agricultural ecosystems are important habitats for many animal and plant species and thus contribute vitally to biodiversity.

Modern conventional farming involves the use of fertilisers and pesticides which then leaches into surface water and groundwater and is carried into watercourses, lakes and the sea. Certain pesticides have proved more mobile in the soil and slower to break down than previously thought. The concentration of pesticides in certain watercourses can in some cases exceed levels at which the environment suffers damage. Pesticide residues have also been found in groundwater. In addition there is concern about the possible combined effects of pesticide residues in the natural environment. This uncertainty and the risks associated with the use of pesticides, conflicts with the health- and quality-oriented goal of long-term sustainable agricultural production.

Key problem areas in connection with resource utilisation and its effect of the productivity of ecosystems include:

- leaching of nutrients into the surrounding environment, owing *inter alia* to high livestock density and overuse of commercial fertilisers,
- the presence of pesticide residues in the soil, water and living organisms,
- declining soil fertility associated with acidification, low humus content, insufficient nutrition, poor structure, compaction, salinisation and erosion.
- soil contamination by persistent organic and inorganic pollutants and the accumulation of heavy metals,
- loss of biological diversity and genetic resources,
- use of fossil fuels and limited phosphorous resources,
- atmospheric pollution, e.g. by NH_3 , CH_4 , N_2O and pesticides.

Successful promotion of sustainable development in agriculture presupposes a radical review of production methods. Pesticide residues in food must be avoided and agriculture must shed its dependence on growth substances and antibiotics in livestock rearing. Efforts must be made to develop and apply production methods and practices that maintain the health and wellbeing of farm animals.

Agriculture is affected by atmospheric depositions, mainly of heavy metals, acidification agents, nutrient-rich substances and toxic organic substances from outside the Nordic region.

Agriculture must become less dependent on energy from fossil fuels and limited phosphorous resources. Efforts to prevent and reduce pesticide residues in the soil, water and living organisms, soil erosion, the accumulation of heavy metals and other environmentally alien substances, and air and water pollution are also crucial. Finally the agricultural industry must ensure that soil productivity is maintained.

One of the biggest challenges for the agricultural sector is the development of more environmentally sound, yet sufficiently efficient, production methods and agronomic practices which are also economically and socially sustainable. This is a major task in view of the Nordic region's ambition to set an international example when it comes to prioritising the environment, regional conditions, food quality and food safety. The biggest challenges in connection with the preservation of Nordic agriculture lie in the northern parts of the region, with their special climatic conditions which make agricultural production more difficult, while the most pressing environmental problems are to be found in more southerly areas, where agriculture is more intensive. Other essential tasks are to safeguard existing infrastructures in rural areas, maintain economic health (profitability) and preserve agricultural skills and expertise. The primary challenge in connection with sustainable reindeer herding has to do with balanced resource utilisation; the main issues here are over-grazing and problems with predators.

The framework conditions for Nordic agriculture are based increasingly on international negotiations and processes. Sustainable development was established as a goal for the international community and individual nations at the UN Conference on Environment and Development held in Rio de Janeiro in 1992. The Rio Convention on Biological Diversity commits agricultural sectors, among others, to production practices that ensure the preservation of biodiversity. Signed in May 2000, the Cartagena Protocol to the biodiversity convention – also referred to as the Biosafety Protocol – established the framework for trade in living, genetically modified organisms was signed in May 2000. Pollution of sea areas is regulated by a number of international agreements. The North Sea Conference and the OSPAR and HELCOM Conventions are particularly relevant to pollution from agricultural activities in the Nordic countries. Obligations in connection with climate change and the emission of substances into the atmosphere are laid down in the Kyoto agreement and the Göteborg Protocol. Also important in this context are the CBD and the International Treaty on Plant Genetic Resources for Food and Agriculture, which together establish an international framework for agricultural management, including the preservation and exploitation of Nordic biodiversity and genetic resources.

Danish, Swedish and Finnish agriculture are part of the European Union Common Market. Relations between Norway and Iceland and the EU are regulated by the EEA Agreement. The same provisions governing the veterinary field and, to some extent, the plant field in Denmark, Sweden and Finland also apply to Norway and Iceland through the EEA Agreement. In other respects, Norway and Iceland pursue their respective agricultural policies in accordance with international agreements. Efforts should therefore be made to influence EU agricultural policy on issues of importance to the Nordic region. It will also be beneficial in this connection to identify ways in which research and development can help sustain significant Nordic values relating to sustainable development, and positions and standpoints in international negotiations. The term ‘Nordic values’ also embraces the Nordic democracy model, based on the principle of economic, social and cultural equality, transparency and popular participation in decision-making processes.

In the Uruguay Round, trade in agricultural products was a key issue in the GATT negotiations. The negotiations resulted in the establishment of the WTO and a number of agreements, including the Agricultural Agreement and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS). In negotiations of this type, the EU Council of Ministers and the European Commission are responsible for negotiating on behalf of all EU member states, while Norway and Iceland negotiate independently.

A new WTO agreement will have a major impact on the Nordic countries’ framework conditions.

A World Food Summit (WFS) focusing on food safety and supply was held in Rome in 1996. The summit adopted a declaration and an action plan in which the parties undertook commitments in seven areas. Work continued after the 2002 WFS in Rome. National follow-up activities by the Nordic countries were coordinated under an independent Nordic action plan for food safety (*cf* section on food safety).

Via a number of political processes, EU countries have in recent years drawn up objectives and guidelines in the agricultural policy sphere with special emphasis on sustainable development. In September 1999, the Council of Ministers (agriculture) adopted a number of concluding declarations ahead of the WTO ministerial conference in Seattle, including the following: “European agriculture must, as an economic sector, must be

multi-functional, sustainable, competitive and spread throughout European territory including regions with specific problems. It must be capable of maintaining the countryside, conserving nature and making a key contribution to the vitality of rural life, and be able to respond to consumer concerns and demands regarding food quality and safety, environmental protection and the safeguarding of animal welfare.”

It was agreed at the Göteborg summit in the spring of 2001 that the principle of sustainable development would be the basis for development in all policy areas. The 6th Environmental Action Programme was adopted in 2001. In March 1999, the new EU agricultural policy was adopted on the basis of Agenda 2000 at the Berlin summit. Agenda 2000 strengthens the basis for the integration of environmental considerations into the Common Agricultural Policy.

In the mid-term review of EU agricultural policy, adopted in June 2003, environmental concerns were a primary consideration behind the move to convert agricultural subsidies to payments that were not dependent on farmers’ production decisions. To be eligible for subsidies, farmers must maintain their land in good agricultural condition. These new decoupled payments are also linked to compliance with statutory environmental, food quality, animal health and animal welfare standards (cross-compliance). A growing share of the EU agricultural budget is being allocated to rural development programmes. Environmental programmes are a mandatory component of these programmes.

11.2 Implemented measures

Agricultural policy in all the Nordic countries is focusing increasingly on long-term sustainable production and the integration of environmental considerations. Policy goals have been defined in a range of areas including the cultural landscape, biodiversity, animal and plant health, and travel and recreation. There are national policy goals and action plans aimed at cutting back on erosion, loss of nutrients into the surrounding environment and pesticide use. Efforts are also being made to encourage organic farming. The Nordic countries are actively involved in efforts to promote sustainable development in the Baltic Sea region.

Nordic plant and animal health is relatively good, which facilitates the production of high-quality agricultural products. Increasing importance is being accorded to ethical values and attitudes in animal husbandry. Good plant and animal health is essential to the competitiveness of Nordic agriculture. Action areas have been defined with a view to deepening, supplementing and strengthening national and EU initiatives and where the Nordic countries have benefited from Nordic cooperation.

Organisational changes have been effected to ensure political relevance, secure political support and facilitate more efficient Nordic cooperation. In 2001, a joint ministerial council was established for action areas in the Nordic agricultural and forestry, fisheries and food sectors so that matters could be dealt with from an integrated perspective all along the production chain – from ‘field and fjord to fare’.

In 2003, a high-level coordination group made up of participants from all the Nordic countries and autonomous areas was set up. Its task is to prepare currently relevant policy matters ahead of ministerial council meetings and coordinate efforts in connection with the budget process, strategic plans and action programmes. The Nordic Genetic Resources Council was established in 2001 as a forum for strategic discussion and

evaluation. A multi-disciplinary body, the council takes a cross-sectoral approach to its work, thus ensuring that issues relating to genetic resources can be effectively dealt with. Tasks undertaken to date involve *inter alia* following up the strategies for a sustainable Nordic region, rights issues in connection with genetic resources, protection of genetic resources, and communication and information.

The Nordic Council of Ministers has adopted a number of declarations on a range of issues including food safety (Greenland Declaration, 2002) international forestry policy, and access and rights to genetic resources (Kalmar Declaration 2003). Special theme studies have helped the Committee of Senior Officials to define policy aims for continued action in areas such as organic farming, pesticides, Nordic cooperation on research and education, and ethical labelling.

A number of projects aimed at strengthening the knowledge base for the development of sustainable agriculture have been implemented. Budgetary priorities will be set with a view to strengthening cooperation between the three Committees of Senior Officials and joint projects based on the 'whole chain' approach.

It is particularly important to identify areas in which the Nordic countries have common interests, where conditions for cooperation are particularly favourable and where such cooperation can create added value. Nordic agricultural researchers have a long tradition of cooperation. The Nordic Association of Agricultural Sciences (NJF) has vigorously promoted research cooperation and should continue to play a leading role in this connection. The preservation and utilisation of genetic resources is a high-priority area for Nordic cooperation on agriculture and forestry; approximately half the funds budgeted for this sector are allocated to projects in this area. The work is vital to sustainable development.

In the education field, cooperation between the Nordic agricultural universities, (NOVA) continues. Cooperation is necessary as the Nordic countries are small in population terms and would otherwise have difficulty maintaining levels of know-how and expertise in all areas of knowledge. A cooperation programme (NOVABA) involving Nordic and Baltic agricultural universities has also been established.

In October 2003, the Nordic Council of Ministers commissioned a joint *ad hoc* working party to assess the feasibility of establishing a Nordic research and education area for fishing, agriculture, forestry and food.

On 23 August 2002, the Council of Ministers (fishing, agriculture, forestry and food) adopted an action plan for gender equality within the council's agricultural and forestry sector (ANP 2002:764). This was the first sector-specific action plan approved by the council. It provides for the adoption of a general gender equality perspective and its integration into agricultural and forestry sector goals, structures, priority areas, decisions, processes, activities, projects, resource allocation and participation at all levels.

11.3 Long-term goals

The Nordic countries' long-term goals for agriculture in the Baltic Sea region are set out – in a 30-year time frame – in Baltic 21, an Agenda 21 for the Baltic Sea region. The document, which has been signed by all the Nordic countries, sets out goals for sustain-

able agriculture. These goals serve as a point of departure for the long-term (20-year time frame) goals for Nordic agriculture.

Agriculture is a key contributor to future society. Sustainable agriculture involves the production on a long-term basis of high-quality food and other agricultural products and services while conserving the resource base through appropriate consideration for the economic and social structures.

Key sub-goals include:

- The adoption of farming methods and practices that do not damage human or animal health or burden the environment, including biodiversity. The adoption of farming methods and practices that do not create problems for coming generations.
- The gradual replacement of non-renewable resources by renewable resources and optimised re-use/recycling of non-renewable resources.
- Widespread recognition of the principle that to be sustainable, agriculture must meet the community's need for healthy food and recreation, help preserve the landscape, objects of cultural-historical value and cultural heritage in rural areas, and contribute to the creation and preservation of well-developed, viable rural communities. The development of niche and non-traditional agricultural production capable of taking advantage of the industry's potential to contribute to growth in rural areas.
- The creation of a climate in which agricultural production is discussed, highlighted and respected.
- The establishment of farming operations in marginal and low-productivity areas to take advantage of agriculture's multi-functional role.

By conserving the values of the cultural landscape and farmland as factors in the production of biological raw materials we also preserve and strengthen biological diversity and the cultural environment. Thus in addition to meeting the community's need for food and recreation, sustainable agriculture also acts as a bulwark, safeguarding biodiversity, landscapes, objects of cultural-historical value and our cultural heritage.

Within this broad sphere, however, priority must be given to short-term action areas. These represent the most critical challenges to the achievement of sustainable development the Nordic region.

Most follow-up activities in connection with Strategy for a Sustainable Nordic region must be carried out at national level and as part of EU/EEA cooperation, and in compliance with international agreements.

11.4 Goals and initiatives for 2005–2008

The following action areas have been defined for the second four-year period, 2005–2008:

11.4.1 Strengthening Nordic influence in international negotiations and processes

A number of framework conditions for Nordic agriculture have been established in recent years as a result of international negotiations and processes. The Nordic countries must be able to influence these processes so as to ensure that Nordic values, attitudes and standpoints have a decisive impact.

A common Nordic aim is to work for a versatile (multi-functional), sustainable and competitive European agricultural sector able to operate in regions with specific problems. It must also be capable of making a key contribution to the vitality of local life and protecting and preserving the natural environment. Finally, it must be flexible enough to respond to consumer concerns and demands for better food quality and safety, environmental conservation, and animal health and welfare. The Nordic countries must seek to ensure that common Nordic values and interests have a decisive impact on international negotiations and processes.

11.4.2 Strengthening Nordic agricultural research and education

All the Nordic countries have a continuing need for national and regional research and education as a basis for development in the agricultural sector, national policy-making and, to a growing extent, the development of international policies and regulatory frameworks. The Nordic countries tend to have more in common with one another than they do with other countries, and years of experience show that highly relevant cooperation on education and research in the agricultural field is possible in the Nordic region. In view of the attenuation of national research skills and expertise in a number of areas at a time of growing demand, cooperation between Nordic countries is crucial to maintaining the necessary know-how to meet Nordic needs. Efforts should be made to develop cooperation between agricultural and environmental research in the Nordic region so that beneficial synergies are achieved.

A condition of continued Nordic cooperation and its further development in higher education and agricultural research is the introduction of a simplified and more efficient funding and management model. This must be composed of strong components such as experiences acquired from the Nordic Contact Body for Agricultural Research (NKJ), Joint Nordic Forestry Research (SNS) and the Nordic Forestry, Veterinary and Agricultural University (NOVA), but be binding on individual countries to a much greater extent than at present. A report on development of such a model is expected in 2004.

The aim will be to establish more extensive Nordic cooperation in higher education and research during the coming strategy period.

11.4.3 Further development of sustainable production systems in agriculture

A major challenge for the agricultural sector is to develop more environmentally sound, yet sufficiently efficient, production methods and procedures, which are also economically and socially sustainable within internationally established framework conditions. It is a challenge which will become greater and even more demanding in the future given the Nordic countries' aim – to lead the way on issues relating to the environment, regional conditions, food quality and food safety.

The application of an environment-oriented approach to the development of agricultural production should be accompanied by greater emphasis on innovative measures aimed at strengthening increases in value. There will be a need for continual restructuring in the agricultural industry in response to new knowledge and technology and changes in the market and in agricultural policy. The biggest challenges lie in the northern reaches of the Nordic region, where the special climatic conditions make food production more difficult.

Sustainable agriculture is predicated on efficient production and high standards of protection with regard to the landscape and the environment on every farm. Optimal use of resources by individual agricultural businesses is the key to the further development of agricultural production and the production of other goods and services. Planning and

follow-up systems that ensure sustainable resource utilisation and production methods in agricultural businesses are therefore essential.

Genetic diversity in livestock, crops and forests is crucial to the creation of sustainable production systems. This will become increasingly vital in the Nordic region, with several countries encompassing marginal production areas, and for a number of production types. Further development of Nordic cooperation on the preservation and sustainable development of genetic diversity will contribute to sustainable development in agricultural production.

The Nordic countries aim to continue promoting organised cooperation in the agricultural research sphere with a view to developing more environmentally sound yet sufficiently efficient working methods and procedures, and a stronger basis for value creation. Special importance should be attached to strengthening cooperation in the northern areas of the Nordic region.

11.4.4 Reducing pesticide use in agriculture

At a ministerial meeting in Greenland in 2002, the Nordic ministers of agriculture, forestry, fishing and food adopted a ministerial declaration on pesticide use reduction. The ministers agreed that the Nordic countries face similar challenges with regard to reducing pesticide use and promoting plant protection methods which meet high food, working environment and natural environment safety standards. They approved a proposal to draw up a Nordic action plan for the reduction of pesticide use. This will be based on consumer needs and interests and considerations in connection with environmental protection. It will also complement and support national efforts in this field, and help promote a strong common Nordic platform for international cooperation and participation.

The goal in this case is the development of a Nordic action plan for the reduction of pesticide to the lowest possible level without significantly affecting economic performance, the use of proven methods to prevent weed growth, plant diseases and insect attack, and the use of other tried and tested methods for reducing pesticide use. Economic impact assessments will be carried out to determine the effects of reduced pesticide as countries establish quantitative goals for reduced pesticide use. During the coming period, efforts should also be made to reduce the risks accompanying pesticide use, e.g. by proper handling of pesticides when refilling or cleaning spray pumps, and by establishing spray-free zones along watercourses and lakes.

11.4.5 Reducing the nutrient leaching

Pollution of lakes, watercourses and the sea affects water quality and impacts biodiversity. Soil erosion and leaching of nutrients – specifically nitrogen and phosphorus – from agricultural fields and other sources is a significant problem in the Nordic region.

International declarations and EU directives lay down clear guidelines for reducing water pollution in the Nordic region. The North Sea Declaration, the Baltic Sea Declaration and the EU Nitrate Directive all set reduction targets and lay down requirements with regard to measures, documentation and reporting. The EU Water Framework Directive, due to be implemented before the end of 2003, covers surface water (lakes, watercourses and coastal waters) and groundwater. Objectives include the achievement of ecological water quality and sustainable use of water resources by 2015. The directive also requires member states to apply a cross-sectoral approach to management planning and action planning. It is expected that compliance with the directive will be difficult in areas of significant agricultural activity.

The problems caused by loss of nitrogen into the atmosphere in the form of nitrous oxide, methane and ammonia are attracting increasing political attention in connection with atmospheric pollution and climate change. This loss is addressed by the Kyoto and Göteborg Protocols and will require a national follow-up in the next few years.

Efforts will be made to further develop Nordic cooperation in this area. The development of environmentally sound agronomic practices and technological solutions should be a priority in the context of Nordic cooperation on research and education. Relevant cooperation measures include skills development and exchanges of experience in connection with efficient management systems for implementation and partnership. The feasibility and potential benefits of a Nordic strategy for reducing pollution from agriculture should be assessed.

11.4.6 Recycling of organic waste for use in agriculture

Organic waste is a problem in many of the more highly developed societies. This form of waste can be a resource for agriculture, which uses large amounts of nutrients in crop and livestock production. The agricultural sector can contribute by using more organic waste, provided the necessary environmental and health requirements are met. If organic waste is used in agriculture, it must be subject to quality requirements aimed at preventing toxic substances and hazardous organisms from entering the soil and safeguarding the working environment.

Another condition is that the products involved should have genuine use value and that the use of organic waste is economically defensible. A key task in this area will be the application of know-how and experience acquired in recent years to the commercial use of recyclable products and organic waste.

The aim is to implement a coordinated Nordic strategy for the use of organic waste. Key tasks here will be to compile available knowledge and data, generate new knowledge through research and development, encourage product development, communicate knowledge and information and develop a better dialogue between producers and consumers.

11.4.7 Nordic strategy for the preservation of the cultural landscape

The cultural landscape created through agricultural activity, contains natural and cultural-historical values as well as values associated with the landscape as a whole. Regional variations in the Nordic agricultural landscape reflect natural conditions, culture and settlement, production processes and ownership and operational structures in agriculture. The landscape was managed primarily by people actively engaged in agriculture. The Nordic agricultural landscape confers important environmental benefits on rural inhabitants and local communities. The Nordic countries are focusing on improving opportunities for enterprise development based on the landscape, cultural heritage and the natural environment. A varied and exciting cultural landscape is vital to the travel industry, tourism and other forms of enterprise associated with agriculture and local communities.

It was concluded at a ministerial meeting of the Nordic Council of Ministers held in June 2003 that work on issues relating to the cultural landscape should continue. The ministers also decided that the need to draw up a strategy for preserving the cultural landscape – and the feasibility of doing so – should be looked into when the Swedish thematic project on the future of agriculture was concluded. The lesson learned from the Nordic Conference on the Cultural Landscape, held in Norway in June 2003, was that cooperation on this theme helped promote the exchange of experience and ideas and

networking activities between the Nordic countries. This form of cooperation complements Nordic work on the future role of agriculture.

The aim is to ensure that the richness and variety of agricultural landscapes in the Nordic countries, where natural and cultural-historical values are found, are preserved and maintained as a valuable resource for society. One objective is to strengthen Nordic cooperation and focus more closely on development in the cultural landscapes created by agriculture in the Nordic region. Work towards a possible Nordic cultural landscape strategy should be undertaken on the basis of ongoing Nordic projects, seminars and reports in this sphere.

Efforts in connection with the preservation of cultural landscapes in the Nordic countries should be closely linked to work on the implementation of the European Landscape Convention (see section 5.3.7).

11.4.8 Different roles for sustainable agriculture

There is growing political awareness and recognition in the Nordic region of the various roles played by agriculture, including the production of collective values. The versatility, or multi-functionality, of agriculture has been a subject of discussion in a number of international forums such as the WTO, the OECD and the EU.

Sweden and Iceland have focused on the multi-functionality of agriculture in the future and on the agricultural population's new roles in society. Work in this area has included a thematic project – carried out during the Swedish presidency in 2003 – on the future roles of agriculture and the rural environment. Issues covered included the management of natural and landscape resources and the further integration of agriculture into regional development programmes. Future work will be based to a large extent on these initiatives.

The aim will be to follow up – under Nordic auspices – the challenges arising in connection with the many future roles of agriculture in the Nordic region.

11.4.9 Organic farming

At the meeting of the Nordic Council of Ministers in Greenland in August of 2002 it was decided that efforts should be made to strengthen Nordic cooperation in the sphere of organic farming. The Nordic ministers declared that organic farming has an important contribution to make to sustainable agriculture, a sound, healthy environment and greater consumer choice. The declaration was subsequently followed up by a Nordic seminar in Hamar on Nordic cooperation in this sphere. In their report, the seminar leaders concluded that continued cooperation on organic farming should be network-based and that projects should be undertaken in specific areas such as market development, advice and guidance, regulatory and monitoring activities, and research and development.

At the Nordic-Baltic Ministerial Meeting in Tallinn in November 2003, the ministers declared that Nordic-Baltic cooperation on organic farming should be strengthened. It was emphasised that market development, advice and guidance, regulatory and monitoring activities, and research and development were special focus areas for cooperation. As development levels vary from country to country so does the focus. However, it is clear that many of the challenges relating to the further development of organic farming are common to the Nordic and Baltic countries.

The aim is to develop Nordic cooperation in the sphere of organic farming on the basis of a 'whole chain' approach where efforts are concentrated systematically on all the

links in the value chain, from primary production through processing to sale. Cooperation based on exchanges of information and experience and concrete project work will help promote continued development of organic farming in the region and benefit cooperation between the Nordic region and the Baltic countries.

11.4.10 Animal health, animal welfare and ethical aspects

The health and wellbeing of animals and ethical animal husbandry are important competitive factors for Nordic agriculture. Good animal health and good animal environments make for good production conditions. Healthy animals increase a country's export opportunities. When importing animals, measures to protect their health can be taken under international trade commitments. Increasing regard is being paid to the ethical aspects of animal husbandry. The general public is constantly concerned about standards of husbandry, supervision, foddering and animal treatment. Nature, the environment and animal welfare should be taken into account in every individual research and development programme and in the framing of agricultural policy. For reasons of food safety, agricultural enterprises are responsible for ensuring that the production process is not detrimental to the health and wellbeing of their animals.

The aim is to safeguard the health, wellbeing and normal functionality of livestock in the Nordic region, and ensure that they are able to live in accordance with their behavioural needs, through intensive cooperation on research into and the development of information and communication channels. This will enable the Nordic region to retain its leading international position in this sphere. It should also serve as a basis for the production of safe food (see Chapter 8, esp. sections 8.4.1 and 8.4.2).

11.4.11 Genetically modified organisms

The cultivation of genetically modified organisms (GMOs) for specific purposes requires exhaustive prior health and environmental risk assessments before their use for the said purposes can be approved. Only approved GM crops may be cultivated.

Fields accidentally contaminated by GM crops or organisms must be marked when the level of contamination exceeds stated limits. Steps should be taken to develop regulations or reach agreements that facilitate the co-existence of all approved forms of cultivation so that producers and consumers can choose freely.

The aim should be to conduct an exhaustive, comprehensive health and environmental risk assessment based on scientific facts and in line with the precautionary principle. Efforts should be made to coordinate research in this field. Products containing or consisting of GMOs, or containing ingredients produced from GMOs must be properly labelled so that consumers can make informed choices.

Continual development of health and environmental risk assessment methods at international (EU, OECD and WHO/FAO) level is essential. The Nordic countries should play a prominent role in this connection.

11.4.12 Cooperation on the development of sustainable reindeer herding

The main challenge to the establishment of sustainable reindeer herding is achieving balanced resource exploitation. In the Nordic region, reindeer herding is characterised in part by the over-exploitation of resources. The result is an enterprise in a state of ecological, financial, and social imbalance, one which can barely fulfil its function as an important cultural identifier for the Sami in the Nordic region.

The Nordic countries should seek to broaden the basis for Nordic cooperation on reindeer herding policies and on measures aimed at making this occupation more ecologi-

cal, animal friendly and socially sustainable, so that it can fulfil its function as a cultural identifier for the indigenous people of the Nordic region. It is important to build on the integrated cooperation and bodies already developed by the Sami inhabitants of the Nordic region.

12. Forestry

12.1 Development and challenges

Forests cover 78 per cent of Finland's total land area. The corresponding figures for the other Nordic countries are 57 per cent in Sweden, 37 per cent in Norway, 11 per cent in Denmark, and 1.2 per cent in Iceland. In this respect the Nordic countries differ from other industrialised nations whose forest resources are far less extensive. Among the autonomous areas only the Åland islands engage in commercial forestry. The role and function of forests and forest resources in the region vary considerably from country to country. A distinctive characteristic of forestry in the Nordic region is that it is often carried on alongside agriculture; private farm forestry is thus a prominent feature of Nordic forestry. At the same time, extensive tracts of forest land are owned by private enterprises and public authorities.

The forestry sector generates jobs and income, and provides a basis for value creation at local level. In Finland, Sweden and Norway, forestry and wood processing are also major industries, and forests products are among their chief exports. Although forests covers a proportionately smaller area of Denmark, the Danish forestry industry generates considerable value.

In addition to their immense commercial importance in the Nordic region, forests also play a vital role in open-air activities and recreation. In addition, they fulfil essential environmental functions, such as protecting and in certain cases enhancing biodiversity, protecting groundwater, preventing erosion and binding CO₂, a climate benefiting process.

Timber products are renewable resources that do not add new CO₂ to the atmosphere. Wood also requires less energy to produce than alternative materials. More extensive use of wood in buildings, furniture, etc. will thus help reduce CO₂ emissions and contribute to more efficient energy utilisation.

Bioenergy, based on forest products and other organic materials, has a significant energy supply role to play in the Nordic countries. Bioenergy generates for a total of 227 TWh (approx.) in the Nordic countries, compared to a total output of 205 TWh (approx.) from hydropower. It is estimated that the Nordic region has a potential bioenergy use capacity of over 400 TWh.

The figures in Table 12.1 show the relative economic importance of the Nordic region's forests.

Table 12.1 – Key figures for forests and forestry in the Nordic countries*.

	Finland	Sweden	Norway	Iceland	Denmark
Area (million hectares)					
Total area, including freshwater bodies	33.8	45.0	32.4	10.3	4.3
Total land area	30.5	41.2	30.7	8.9	
Total forested area	26.1	28.0	12.0	0.13	0.486
Forested area (hectares) per capita	4.5	3.17	2.75	0.46	0.09
Ownership structure (%)					
Private ownership	62	51	80	70	71
Commercial forestry	9	25	4	0	
State-owned forest	25	17	12	5	23
Other public forests	4	7	4	25	5
Felling per year (mill. m ³)	55	61(gross)	7.4	0	1.7
Value creation (gross production, bn. NOK)		1,2			
Primary forestry	19.	SEK 23 billion	5.2	0	
Forestry sector, total	62.2		44	0	DKK 1.1 billion
Export value	USD 10.4 billion	SEK 91.2 billion	16.6	0	
Employment (full year equivalents)					
Primary forestry	7.000	18.000 ³²	4.400	30	
Forestry sector, total	96.000	95.000	18.000 ³³	100	4.200

*Figures for Denmark and Norway from 2000. Figures for Finland, Iceland and Sweden from 2002.

As a consequence of increasing international competition, international agreements and guidelines, rising costs and changes in the expectations and needs of the inhabitants, profitability in the forestry sector has fallen sharply in the last 10–20 years. The biggest challenge to the sustainable development of the Nordic forests in the years to come will be to boost profitability both in traditional forestry and for new products and services derived from the forest, while helping to preserve the many social and environmental benefits that forests provide, in a balanced way.

Swedish forestry policy

1993 saw the introduction of a new Swedish forestry policy, which gave prominence to environmental issues. Forests and wooded areas were to be managed in a sustainable way with a view to meeting the social, economic, ecological, cultural, and spiritual needs of present and future generations.

Two policy goals were laid down:

- The production goal remains the efficient exploitation of forests and wooded areas with a view to ensuring regular yields. Forestry production should aim to facilitate freedom of action with regard to utilising what forests produce.

³² Number of employees

³³ Including primary forestry and the timber haulage and wood processing industries.

- The environmental goal is the preservation of the Nordic forests' natural production capacity and the preservation of their biodiversity and generic variation. Forests must be utilised in such a way that plant and animal species that belong there are able to live on in viable numbers and under natural conditions. Endangered species must be protected, and the cultural heritage and aesthetic and social values of forests must be preserved.

New Norwegian forestry policy

Following the Forestry report, Value Creation and the Environment in the Forestry Sector (*St.meld nr 17, 1998-99*), the Norwegian forestry policy has placed major emphasis on the need for further development of measures to promote value creation and environmental protection.

The value creation initiative is a response to the recent decline in profitability and value creation in the Norwegian forestry sector, and the need to develop new products, new production methods, better market adaptation and better communication all along the value chain, and greater know-how and expertise at every stage. The main initiative in this connection is the Value Creation Programme for the Promotion of Timber Processing (*Träprogrammet*). In 2003, this initiative was further strengthened by the new high-priority project launched by the Ministry of Agriculture, *Lantbruk Plus* (Agriculture Plus).

The initiative is based on clearly stated environmental provisions in existing legislation and regulations, more emphasis on the responsibility of forest owners in connection with environmental concerns, *inter alia* through the forestry industry project Living Forests (*Levende Skog*), and greater stress on knowledge and awareness of the forest's environmental values. Virtually all forestry operations in Norway have now been certified. The initiative also includes measures aimed at increasing the production and use of bio-energy, the use of outlying land resources and greater use of timber as a renewable resource, which requires far less energy to produce and transport than comparable materials (Cf the Value Creation Programme for the Promotion of Timber Processing (*Träprogrammet*)). Efforts to reform forestry policy instruments have been under way since 2003. The aim is to make forestry policy less vulnerable to changes in framework conditions by allowing tax deductions on investment in forestry. At the same time, it was decided to abolish the supplementary grant for forest planning and afforestation.

New Danish forestry policy

In June 2002, the Danish government launched Denmark's National Forestry programme. The programme reflects in its design the general trend in society towards greater and more effective citizen participation in decision-making processes. The need to draw up a coherent programme for the entire forestry sector became a priority concern following recommendations from international forestry policy processes and a change of government in 2001. The programme, which came into being following broad public debate on forest development and utilisation, replaced the 1994 Strategy for Sustainable Forestry. Theme meetings, conferences, excursions and discussions involving a broad spectrum of stakeholders helped set up goals and policy instruments for Danish forests. A set of operational guidelines for sustainable forestry has been drawn up by a broad range of stakeholders. The programme incorporates goals relating to environmental, ecological, economic and social conditions. The goal of doubling the area of woodland has been retained and new goals concerning the acquisition and dissemination of knowledge and information have been introduced.

Finally, the programme lays down goals relating to Denmark's participation in international forestry processes. The programme can be accessed on the internet at <http://www.skovognatur.dk/skov/dns/default.htm>.

The programme will be implemented partly through a new forestry act, which is expected to come into force in 2004. The legislation will allow forest owners greater flexibility in the management of their holdings and supports a long-term transition to more natural forestry. In addition, the draft act also contains provisions designed to ensure full implementation of the EU Habitats Directive and the EU Birds Directive in forest reserves, wooded areas, etc. It also includes provisions on the registration of naturally valuable forest in and outside habitat/biotope areas with a view to entering into agreements and producing information on the preservation of these areas.

Existing supplementary ordinances concerning forests, forest clearing, product development, advisory activities, and the ordinance on Christmas tree production charges and decorative greenery are being continually developed and brought into line with the act's purpose and intentions.

Finnish forestry policy

With the reform of Finnish forestry legislation in its final stages, the forestry minister initiated work on a national forestry programme for Finland in February 1998. The programme was designed to meet Finland's needs in the context of international forestry policy, while fulfilling important functions at home. The minister took a decision-in-principle to adopt the programme on 4 March 1999. The new forest policy's key principles, goals and means were incorporated into Finland's National Forestry Programme 2010. The minister chose to implement the programme in a balanced, unified way with regard to economic, ecological and social sustainability.

The work of drawing up Finland's national forestry programme was preceded by the establishment of the forestry sector's regional programme of objectives in all 13 forest board areas. The updating process, carried out in accordance with the principles embodied in Finland's National Forestry Programme 2010, was completed in early 2001. The programme was drafted in open cooperation with all the parties concerned. It is in the interests of the parties to ensure that the programme is implemented in a constructive spirit at both national and regional level. Cooperation safeguards employment and livelihoods in the sector, the diversity and vitality of forests and the opportunities for recreation which they provide.

The private sector, too, has participated in the implementation of the programme. It is particularly gratifying to note that investment by the Finnish forestry industry actually rose in 2001–2003, despite the poorer economic climate. The programme is important to Finnish forestry both materially and psychologically. It has served as a platform for cooperation for the entire forestry industry. It contains a framework for the activities of public authorities, channels increased funding to the industry and has set in motion and supported development work in many important sub-areas. It represents an attempt to cross sectoral boundaries and address 'non-traditional' forestry policy issues.

Iceland's regional afforestation project

1991 saw the launching of six regional afforestation projects across the country, in accordance with the government's afforestation appropriation plan. Section 4 of the Regional Forestry Projects Act states that: "Every regional project shall be accompanied by a special regional forestry plan. Each plan must run for a minimum period of 40 years, divided into 10-year periods. Every regional project must make provision for the afforestation of not less than 5 per cent of the country's low-lying areas."

As with all forestry operations, the nature of the project requires an emphasis on long-term financing measures in order to guarantee reliable, goal-oriented, effective implementation. In March 2003, the Icelandic parliament approved a forestry appropriation proposal extending over the next five years (2004–2008). This change from the previous annual appropriation system will help make the development of afforestation projects more effective than in the past.

Participants and others familiar with the project have frequently attested to its impact. Although the main objective is to establish a forest resource in an environmentally responsible way, there are other goals, e.g. to promote rural development, boost employment and increase CO₂ binding. The project has also opened up employment opportunities for people with university degrees, scientists and forestry experts, and helped support the tourist industry and the hotel and restaurant business.

It is difficult to find comparable projects that have done more to improve life in rural areas, which has become problematic in many areas. The afforestation project not only supports smallholders but also creates new opportunities in the countryside, particularly for city dwellers who find new homes in rural districts, where they register and pay their taxes. New ideas and approaches, better social services and a more varied life in rural areas have contributed to the enrichment of society as a whole.

The bodies responsible for administering Iceland's forests have had to adapt to the regional afforestation projects. This is mainly because research and the widening purview of research findings and other knowledge are the key to good results. In addition there is a continually growing need to monitor and collect information at national and international level, particularly in connection with the UN Convention on Climate Change and the UN Forum on Forests (UNFF). Meanwhile, Iceland's forestry administration is still required to manage state forests in a sustainable way and for the benefit of society.

Åland's forestry policy

Åland has some 61,700 hectares of productive forest land, of which just over 90 per cent is in private hands. Virtually all owners of forest land were awarded FFCC/PEFC certification in 2003.

A comprehensive review of Åland's forestry legislation in 1998 was accompanied by the introduction of an environmental goal corresponding to those adopted in the neighbouring regions. Forestry must be practised in such a way that the soil's timber-producing capacity is utilised sustainably, while biodiversity and the forest's multi-functional character is safeguarded. A parallel review of the Environment Protection Act was conducted at the same time. Both acts identify a number of biotopes crucial to the preservation of biological diversity in Åland. These were systematically inventoried in 2001–2003.

Forestry policy guidelines have been set out in the Regional Forest Programme for Åland for 2002–2006. The programme, drawn up in collaboration with 12 different stakeholders, is aimed at maintaining economically, ecologically and socially sustainable utilisation of forests and forest lands.

12.2 Implemented measures

In the international arena, forest products are free trade goods with little or no import protection. Nordic forestry competes in an international market, in open competition with other export countries.

In recent years, the framework conditions governing the Nordic forestry sector have increasingly been determined by international negotiations and processes. Agreement was reached at the 1992 UN Conference on Environment and Development in Rio de Janeiro on a number of principles for sustainable forestry through the adoption of the Statement of Forest Principles and of Article 11 of Agenda 21 on the need for international action to combat deforestation.

The follow-up of the Rio conference has largely been organised in the Intergovernmental Panel on Forests (IPF, 1995–98) and the Intergovernmental Forum on Forests (IFF, 1999–2000). The IPF and IFF processes resulted in a wide-ranging international agreement on a number of action areas relating to the sustainable management of forests around the world.

International forestry work has been carried forward in an intergovernmental policy forum, the United Nations Forum on Forests (UNFF). This is a high-level body (ministerial meetings) with broad participation, whose principal task is to ensure implementation of the action areas adopted in the IPF/IFF processes. The UNFF has a multi-year work programme due to run until the end of 2005. Ahead of the fifth session in 2005, the forum will examine the prospects for introducing a Forestry Convention, or for establishing other forms for future cooperation in the forestry sector.

In 1998, an independent work programme on forest biodiversity was launched under the CBD and was subsequently updated and expanded in 2002. Its main aim is to promote national and international action in matters relating to the conservation and sustainable use of biological diversity in forested areas.

MCPFE, a pan-European forestry policy process, was established to further develop and put into practice sustainable management strategies. Four ministerial sessions have been held so far, the latest in Vienna in 2003. During the process, 17 ministerial resolutions have been adopted, establishing *inter alia* the overall objectives of the process and appropriate criteria for sustainable forestry. In addition, the ministers have identified indi-

cators and adopted guidelines for measuring and monitoring the development of European forestry. MCPFE is in many respects a direct response to the challenges on the global agenda. Emphasis has been laid on further developing and adapting decisions coming out of the global, forest-related processes to European conditions, and on working for their implementation in the countries of Europe. Most MCPFE targets and decisions are followed up at national level through measures in each country. The countries also cooperate extensively with international organisations on missions deemed suitable for implementation at pan-European level. In October 2003, a new programme of work was adopted, emphasising joint action in following up the targets and decisions of the Ministerial Conference.

In 1998, the EU adopted a Common Forestry Strategy. Compared to the Common Agricultural Policy, it offers considerable scope for national policy measures. The strategy is to be evaluated in 2004, when the question of whether Community policy should be given greater weight in the forestry sector will be discussed.

Elsewhere, the EU is in the process of adopting an Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT), to combat illegal logging and the trade in illegally-harvested timber. It may be opportune for those Nordic countries that do not belong to the EU to join in implementing the measures proposed in the action plan. In addition, the EU recently introduced a regulation for monitoring forests and environmental interactions, known as Forest Focus. This initiative aims to extend Community monitoring activities to other areas besides forest fires and air pollution.

One of the aims of Baltic 21, the 1998 action programme for sustainable development throughout the Baltic Sea region, is to further implement international recommendations in the forestry sector. The current sustainable forestry programme is being revised, and a new one will apply for the period 2004–2006. The principal aim is to adjust policy instruments so as to ensure the fulfilment of objectives, and to adapt the programme to EU enlargement.

All the Nordic countries pursue active forestry policies. In recent years, forestry policies and laws in the region have been revised and updated. A much broader definition of forestry policy is applied than in the past. While previously concentrating almost exclusively on economic interests, policies now focus on sustainable management as well, and on the many different uses of forests in today's society. Nordic governments have also seen to fit to involve the general public in the policy renewal process.

Action in individual Nordic countries is based on criteria, indicators and guidelines, etc, drawn up by the Ministerial Conference on the Protection of Forests in Europe and adapted to national conditions. Denmark and Iceland, for example, are focusing in particular on afforestation, an important environmental policy instrument.

Work is also under way in the region to survey natural assets and environments of importance to biological diversity. All the Nordic countries apply certification systems. Arriving at a common certification system for the region has proved extremely difficult, but the work being undertaken in each individual country is based on expert Nordic co-operation, and it is hoped this will be intensified.

Emphasis in the task of developing sustainable forest management is on research and development. The Nordic countries have established a strong partnership in this area, organised mainly by the Nordic Forest Research Cooperation Committee and based on both national and Nordic funding. In general, emphasis should be placed on developing

channels of information and distribution between agencies, the general public, research institutions and enterprise. This should include compiling present knowledge and generating new knowledge and competence through research and development.

The implementation of Nordic and national forestry policies must be undertaken in co-operation with agencies, forest owners, environmental organisations and other relevant stakeholders (*cf* the Aarhus Convention from 1998).

On 23 August 2002, the Council of Ministers (fishing, agriculture, forestry and food) adopted an action plan for gender equality within the Council's agricultural and forestry sector (*ANP 2002:764*). This was the first sector-specific action plan to be approved by the council. It provides for the adoption of a general gender equality perspective and its integration into agricultural and forestry sector goals, structures, priority areas, decisions, processes, activities, projects, resource allocation and participation at all levels.

12.3 Long-term goals

Utilisation of the region's forest and wilderness resources is an important means of creating value and welfare for the inhabitants of the Nordic countries. The region's natural resources are also an important part of the region's historical and cultural heritage, and are best safeguarded through active use. Forests and forest products can contribute to sustainable development in society if these resources are actively managed and utilised.

Sustainable forest management is defined as the management and utilisation of forest and forested areas in a manner and at a rate that ensures the preservation of biological diversity, productivity, regeneration capacity, viability and the ability of forests to perform relevant ecological, economic and social tasks at local, regional and global level. In addition, forests must be managed in such a way that they do not damage other ecosystems.

In accordance with this interpretation of sustainable forest management, work is to proceed on the basis of the following general aims:

- Conserving forest resources and furthering their contribution to the global carbon cycle,
- Ensuring the viability and health of the forest ecosystem,
- Promoting productive utilisation of the forest (timber production and other uses),
- Preserving and promoting biodiversity in forest ecosystems,
- Preserving and promoting the protective capacity of forests (especially with regard to soil and water),
- Safeguarding economic functions and conditions.

12.4 Goals and initiatives for 2005–2008

The long-term goals of forest management in the Nordic region are many in number and general in character. The short-term action areas in this sector should be accorded priority. The emphasis should be on national measures pursuant to the various international agreements and framework conditions, and relating in particular to the decisions taken

at the Ministerial Conference on the Protection of Forests in Europe, and to previous MCPFE decisions.

The Nordic countries must define action areas that can boost value creation in the forestry sector, improve opportunities for outdoor activities and recreation, and reinforce the beneficial effects of forestry on the environment. The latter goal can be achieved by protecting and promoting biological diversity, protecting groundwater, preventing erosion and helping to reduce emissions of climate change gases.

A more detailed account of efforts by the forestry sector to reduce greenhouse gas emissions is included in the section in the climate chapter that describes how CO₂ binding can be used to lessen the impact of CO₂ emissions.

- Reference may also be made to Chapter 5 on the work of preserving and promoting biodiversity in forest ecosystems and of conserving forest genetic resources.
- The following action areas have been given priority:

12.4.1 Influencing European and international cooperation

Working together, the Nordic countries can play a key role in the further development of international efforts on behalf of sustainable forestry.

The various countries share common interests in a number of areas and operate to a great extent in the same markets. Nordic cooperation is important for the exchange of ideas and the formulation of common positions, and effective cooperation in the future will further the interests of regional forestry, especially in international contexts. The Nordic countries have established close cooperation on forestry policy matters, and this must continue.

A common aim of the Nordic countries is to influence European and international forestry policies at international negotiations and in international processes. Organised Nordic cooperation must proceed from a joint Nordic strategy based on national and international goals and guidelines for sustainable forestry.

12.4.2 Coordinating forestry research in the Nordic region

The Strategy for Joint Nordic Forestry Research 2004–2006 will continue to focus on the Nordic dimension, particularly on the resource base and how it is managed, not least in family forestry. The goal is further consolidation of joint Nordic forestry research emphasising the full range of forest uses. Priority themes will be sustainable forestry, including genetic resources and biodiversity, nature-friendly and environmentally sound forms of forest care, climate impact and bioenergy production, and the different purposes that forests serve, e.g. as a basis for policy decisions.

12.4.3 Greater use of environmentally sound forest products

Increasing value-added forest product processing and developing new wood products is an important goal. In many areas, environment-friendly wood products can replace cement, aluminium, plastic and other less environment-friendly materials. The goal here is to enhance the forestry sector's positive contribution to the environment and to secure more sustainable production and consumption patterns, and to boost competitiveness in the sector.

The Nordic countries will follow up this objective primarily by means of national programmes promoting wider use of wood materials and by actively supporting existing Nordic and other international networks and processes sharing the same goals. Important tasks in this respect will include compiling present knowledge in the field, generat-

ing new know-how, skills and expertise through research and development, and promoting both product development and the development of communication and information channels throughout the value chain.

12.4.4 Developing nature-friendly and environmentally sound forestry practices

Value-adding practices in forestry must be kept within environmentally responsible boundaries that have been established to safeguard biodiversity, ecological sustainability and opportunities for outdoor activities and recreation. Environmental friendliness is increasingly important as a competitive factor, and Nordic forestry must therefore be practised in an environmentally sound manner for competitive reasons. At the Göteborg summit in 2001, the European Council adopted the objective of halting loss of biodiversity in the Union by 2010. As the Nordic region is rich in woodland, the forestry sector here must assume a considerable share of the responsibility for realising the goal of preserving and improving forest biodiversity. The Nordic countries are anxious to ensure the preservation of a representative and sufficiently large proportion of Nordic forest types.

The aim is for Nordic forestry to be practised in accordance with the goals and guidelines established for sustainable forestry in such forums as the Ministerial Conference on the Protection of Forests in Europe. Good communication and exchanges of experience between the Nordic countries are crucial to the further development of environmentally sound practices in forestry. Organised scientific cooperation in this field is to continue and to be intensified where potential synergies exist.

12.4.5 Strengthening the social role of forests

In most of the Nordic countries, forests are rich in traces of human activity, and in many places are linked to important heritage assets. Forests are also of great importance for recreation and outdoor activities, and for people's wellbeing. Free access to woodland under the right of common access, an established custom in Iceland, Finland, Sweden and Norway, is essential to the pursuit of an active outdoor life. Forests also have many beneficial effects that can be put to use in education.

The challenge facing the forestry sector is to adjust its activities to the many different and often conflicting demands imposed upon it involving issues such as economic surplus, conditions in sparsely populated areas, rural districts and peri-urban areas, public access to recreation and outdoor activities, due consideration for human activity, traces of natural, cultural and historical interest, and the role of forests as biotopes for flora and fauna. Thus putting a value on the social dimension of the sustainable development of forests is also an important task.

The aim is to strengthen the social functions of the forest in community life. This is to be achieved in cooperation with organisations representing outdoor recreation, forest owner and environment protection interests. Initiatives are to be launched in the form of research, information gathering, pilot projects, courses, seminars and educational plans, etc.

12.4.6 Developing bioenergy

Energy production should preferably be derived from renewable energy sources to a greater extent than at present. Research and development programmes in this area are in progress in individual countries and under Nordic auspices.

The goal is the further pursuit of joint Nordic efforts aimed primarily at compiling existing knowledge, generating new knowledge through research and development, and stimulating product development by building on joint bioenergy programmes already under way. See also Chapter 9.4.4.

13. Fisheries and aquaculture

The living resources of the sea represent both a source of wealth and an important area of common responsibility for the Nordic countries. Fisheries and aquaculture are a vital means of support for coastal communities throughout the region – from the North Atlantic in the west to Arctic areas in the north and the Baltic Sea in the east. For many peoples and local communities in the Nordic area, marine living resources (MLRs) are essential to life itself.

The Nordic marine areas are among the most productive in the world. They underpin economies in the region and are of great importance for food production. A clean marine environment is a precondition for conserving the productivity of the sea as a basis for the sustainable utilisation of its living resources. The Nordic region must take the lead in emphasising global responsibility for this resource, and adopt measures of its own to protect the sea.

Exploitation of MLRs, whether through fishing, hunting marine mammals or birds, or through aquaculture, must be based on an integrated, inclusive approach –based in turn on knowledge and research, the precautionary principle and due consideration for marine ecosystems – and take into account the social and economic conditions surrounding the industry. The value of marine resources as a renewable, nutritious and healthy source of food and other products, confers a special responsibility on all sectors utilising and impacting on the sea, not just fisheries and aquaculture. Activities that have an adverse effect on the marine environment and thus on the supply, safety and quality of marine products must be avoided. The long-term goal is the sustainable management of all marine living resources in the Nordic region.

13.1 Development and challenges

International cooperation on the exploitation and preservation of marine resources is essential for ensuring sustainable development, and is considerably more extensive than in many other sectors. Several important commercial stocks in the Nordic region are shared by two or more countries. This requires close and active cooperation in such areas as research, management and supervision, not only between the Nordic countries but also involving all the countries linked to the region by the northern sea areas.

On the basis of the UN 1982 Convention on the Law of the Sea (UNCLOS), the Rio Declaration and the Agenda 21 document from 1992, the WSSD in Johannesburg 2002 refocused attention on the marine environment and sustainable utilisation of MLRs by establishing a number of important targets for the coming years.

The Johannesburg Plan of Implementation emphasises the following measures:

- Encourage the application by 2010 of the ecosystem approach, noting the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem and decision V/6 of the CBD.

- Maintain or restore stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015.
- Implement the FOA 1995 Code of Conduct for Responsible Fisheries, in particular the International Plan of Action for the Management of Fishing Capacity (2005) and the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing (2004).
- Eliminate subsidies that contribute to illegal, unreported and unregulated fishing and to over-capacity.
- Strengthen regional cooperation and coordination between the relevant regional organisations and programmes, the regional seas programmes of the UNEP, regional fisheries management organisations and other regional science, health and development organisations.

The Nordic region has long experience of constructive regional cooperation on marine resources. All marine areas in the region have a number of organisations and mechanisms for joint regional management and research on MLRs.

The Nordic countries cooperate actively via a network of regional management and research organisations concerned with common fishing stocks, including the North East Atlantic Fisheries Commission (NEAFC), the Northwest Atlantic Fisheries Organisation (NAFO), the North Atlantic Salmon Conservation Organisation (NASCO), the International Baltic Sea Fishery Commission (IBSFC), Baltic Fisheries Cooperation (BAFICO) and the International Council for the Exploration of the Sea (ICES). They also cooperate under multilateral coastal agreements on important stocks and bilateral fishing agreements, which provide a framework for joint efforts on conservation and economic development among fishing nations. BAFICO is part of Nordic cooperation in this area and supplements the work of the EU Regional Advisory Council.

Under the UNCLOS and Agenda 21, countries have undertaken to cooperate globally on the conservation and management of marine mammals, especially cetaceans, through the relevant international organisations.

In the North Atlantic, joint regional management and research on marine mammals via the North Atlantic Marine Mammal Commission (NAMMCO) has been extended to include discussion of ways in which fishermen's expertise in relation to these species might be better exploited in the management process. Research aimed at improving our understanding of the role of marine mammals in the marine ecosystem is an important action area for North Atlantic fishing nations in the NAMMCO, where Canada, Russia, Denmark and Japan participate as observers.

The social, economic and cultural importance of fishing in the North Atlantic is the theme of a travelling international exhibition, *Hunters of the North*, initiated by the Western Nordic Council in 2001 with funding from the Nordic Council of Ministers.

In the North Sea and the Baltic Sea, the Nordic countries cooperate on conservation and management of small cetaceans under the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) and of seals through HELCOM.

All the Nordic countries belong to the International Whaling Commission (IWC), the global organisation for the conservation and management of great whales. The IWC needs to reach agreement as soon as possible on a revised management procedure

(RMP) for whaling, so that it fulfils its role as an institution for the conservation and management of great whales and for research in this field.

In recent years, international cooperation on the conservation and management of wild salmon stocks in the North Atlantic via NASCO has focused on the need for greater action in the fish cultivation industry to minimise the threat of wild stocks being genetically modified and infected with disease through the escape of cultivated salmon into open water.

In the Nordic region, Denmark, Sweden, Finland and Åland are parties to the EU Common Fisheries Policy (CFP), while Iceland, Norway, the Faroe Islands and Greenland – none of which are EU members – each has a national management system for MLRs inside their 200-mile fishing limits. The EU states, the Nordic non-EU states and the autonomous territories cooperate in the fisheries sector, via bilateral fishing agreements and other arrangements. Nordic cooperation on MLRs has an important role to play in this respect. The Nordic countries are in a position to reach agreement on several important matters of principle, where experience gained in the region as a whole can help inspire and influence management processes in the enlarged EU and other forums.

In December 2002, the EU fisheries ministers adopted a reformed Common Fisheries Policy. The new regulatory framework, which entered into force on 1 January 2003, stresses that the CFP must be based *inter alia* on the precautionary principle and the ecosystem approach. One of the most important instruments for ensuring sustainable fisheries management is the formulation of long-term plans for as many stocks as possible. Priority is to be given to stocks that are currently outside biologically safe limits. In addition, the capacity of the Community fishing fleet will be subject to national capacity ceilings as of 1 January 2003. These will be gradually lowered on the basis of various criteria. Otherwise, the size of fishing fleets is to be regulated nationally, which will make it easier to adjust them to resource supply and regional considerations. Implementation of these management tools will pave the way for a more sustainable approach to fishing in the future. Matching capacity in the fisheries sector to the resource base is essential to the sustainable utilisation of MLRs.

The abolition of public subsidies that have a detrimental effect on resources in this sector is an important step towards capacity reduction; it also encourages economic efficiency and competitive neutrality.

Regionalisation of decision-making on sustainable utilisation of MLRs is now on the global and EU agendas as an important component of efficient management. Regionalisation is a response to the need to take decisions as close as possible to users (stakeholders) and local communities. The EU accordingly intends to establish Regional Advisory Councils under the reformed CFP.

The Nordic countries have made considerable progress in such areas as satellite surveillance of fishing, joint reporting and national and international observation. Illegal, unreported and unregulated (IUU) fishing still poses a challenge which will require close cooperation between all states, and the relevant authorities should take joint steps to help improve supervision and inspection.

The fishing industry has a vital role to play in the drive for sustainable development. It also has major responsibilities. It should be encouraged to take innovative steps to improve technology at the fishing and production stage that will benefit both the resource base and those who are dependent on it for their livelihood.

The industry has adopted a very defensive position compared to other sectors, both at sea and on land. As a result, it is having difficulty recruiting young people, as well as skilled labour. This is a problem that needs to be tackled. The training and recruitment of skilled labour to both public and private enterprises in the sector, is one of the biggest challenges facing the industry today, especially as the upgrading of boats and equipment and the need to adapt to the resource base will reduce labour needs in the future.

The aquaculture industry, meanwhile, presents substantial challenges as well as opportunities. Scope for development in fish breeding is considerable, particularly as regards marine species. One major task is to reduce the number of cultivated fish that escape into the environment and spread through the ecosystem. Another problem is disease among cultivated fish. An increasingly urgent problem is growing pollution at regional level caused by the expansion of the aquaculture industry. Research into technologies that can add value while reducing the environmental impact of aquaculture must be strengthened. The Nordic region must also take part in research on feed for cultivated fish. The emphasis here should be primarily on the sustainable utilisation of marine resources. In future, fish breeding must also be designed and located so as to avoid damaging the structure and function of local ecosystems. The aim is for the fish-breeding industry to assume responsibility for ensuring that cultivated fish do not escape from breeding facilities.

13.2 Long-term goals

The overall objective over the next 20 years is the development of Nordic fisheries policies that ensure that MLRs are exploited in a manner which is sustainable in the long term, under an ecosystem management system based on the principles embodied in the CBD on the conservation of biological diversity and the sustainable utilisation of its biological components.

The joint Nordic research programmes that provide the scientific basis for management and production will accordingly be expanded. This means developing the integrated monitoring and assessment of commercial stocks, species diversity and abiotic environments in marine ecosystems. Another important area is the development of by-products and new opportunities for adding product value to ensure that all fished resources are utilised to the full. The task of developing better methods for the slaughter of marine mammals must be carried forward, for animal welfare and safety reasons. As far as possible, the work should make use of data from the hunting of land-based mammals, as this activity is closely comparable to the hunting of marine mammals.

In the economic field, the Nordic countries as a region can strengthen their international role, for instance by focusing more closely on how economic factors affect sustainable utilisation of MLRs. Areas of particular importance in this respect include illegal and unregulated fishing, and the disposal of such catches, and liberalisation of the global trade in legally harvested fish and fish products, the adverse effects of subsidies on the fishing industry, and the transfer of overcapacity through the sale of surplus fishing vessels. Economic factors also impact on efficiency in the fisheries sector, and should be given greater emphasis in management guidance publications.

13.3 Goals and initiatives for 2005–2008

13.3.1 Cooperation on marine living resources (MLRs)

- The Nordic countries should lead the way, particularly in relation to the EU and other international forums, in adjusting capacity to the resource base, thereby demonstrating the benefits of such a move.
- The Nordic countries should unanimously stress the importance of regional solutions for the sustainable development of MLRs. Here, there is a need for closer regional cooperation in line with the Johannesburg targets and for improved coordination of the implementation of integrated, ecosystem-based management of marine resources. In particular, this calls for better coordination by the Nordic countries at national level.
- MLRs are of crucial importance to coastal peoples and communities in the Nordic region, emphasis should be placed on the need for European and Arctic marine strategies to proceed from an understanding of this.
- There will be continuing grounds for maintaining and strengthening agreements between coastal states on vital common stocks in the North Atlantic. There is an immediate need for binding agreements between coastal states on the management and distribution of blue whiting, Atlantic redfish and Greenland halibut. The EU Regional Advisory Councils must be active and effective in this area, and enjoy local support.

Regional cooperation in the Nordic Council of Ministers on the utilisation and conservation of MLRs is to continue and be intensified. Greater emphasis is to be placed on the sea as a basic common resource and as a link between the Nordic countries and their neighbours. Cross-sectoral cooperation with the food and environment sectors is essential, but other sectors are also relevant in this respect.

Emphasis is placed on active, regular dialogue between the ministers responsible on the countries' experience of ecosystem-based fisheries management, relations with and within the EU, sustainable utilisation of marine mammals in the Nordic region, research cooperation with enterprise, and the development of marine cooperation with the region's neighbours both to the east and to the west.

13.3.2 Research

Expert knowledge of the sea is crucial to sustainable conservation of the basic marine stocks on which Nordic fishing communities rely. Apart from further in-depth research into the biological and ecological aspects of MLRs, the following research areas should be given priority:

- Efforts to ensure maximal utilisation of all harvested resources, including by-catches, gutting residues and other matter presently thrown back into the sea.
- Development of (by-)products through utilisation of residual fractions, non-commercial target species and new opportunities to increase product value.
- Economic and social factors and the relationship between management systems and sustainability in the utilisation of MLRs.
- Research aimed at providing a basis for scientific, balanced dietary advice to consumers, with regard to ingredients that benefit consumer health and to environmental toxins that accumulate in the marine food chain and which may represent a health hazard.

- Research into technologies that can add value while reducing the environmental impact of such activities is to be given further resources.

13.3.3 Training and recruitment

The task of recruiting skilled labour to the sector as a whole should be accorded greater priority in the future.

There is a widespread need for sectoral players (enterprise, private and public organisations and institutions) to join forces with the education and research sector, with a view to coordinating the development of a joint Nordic training programme that offers skills at all levels of relevance for the future sustainable development and competitiveness of the sector.

13.3.4 Enterprise

Dialogue and active cooperation between administrative authorities and enterprise are essential to the task of introducing effective measures that benefit sustainable development based on MLRs. Cooperation in this area is to be given additional resources and improved.

- Nordic organisations in the fisheries sector are urged to become actively involved in the shaping of strategies and priorities in cooperation with public authorities and the research community.
- There is a need to survey and reduce energy consumption and waste disposal on the part of fishing fleets, in close cooperation with enterprise.
- There is a need to further develop fishing techniques that help reduce adverse effects on the natural environment, including the impact of deep trawling equipment on the seabed and the biodiversity there.

13.3.5 Working environment, health and safety

Consideration must be given to the working environment of professional fishermen and its effect on their health, in terms of safety, working conditions, diet and other factors of relevance to health and wellbeing on board fishing vessels of various types.

13.3.6 International cooperation on marine mammals

Efforts must be made to achieve broad international endorsement of the sustainable management of marine mammals. The International Whaling Commission (IWC) must be restored to its position as a conservation, research and management body.

13.3.7 Aquaculture

Attention must be focused on the economic, social and environmental sustainability of Nordic aquaculture. The Nordic region should focus particularly on:

- technological research aimed at reducing environmental stress while ensuring the competitive competence of aquaculture and a sound working environment for those employed in it,
- the health and wellbeing of fish and animals in aquaculture throughout their life cycle, including research into the immune systems of aquaculture animals,
- skills enhancement for all who work in aquaculture, focusing on the importance of health and wellbeing for fish and animals in this field, especially with regard to interaction with the environment,
- measures to prevent the escape of cultivated fish into open water

13.3.8 Indicators

Indicators are to be drawn up for measuring sustainable development in the utilisation of marine resources.

Examples from Norway

The Faroe Islands: Management through fishing days

The fishing days system launched in the Faroe Islands in 1996 controls fishing capacity and fishing activities inside the territory's 200-nautical mile fishing zone instead of allocating specific quotas for species and stocks. This facilitates mixed fishing, where the entire catch is of economic value. So far, the system has proved to be a flexible and easily modified managerial tool which has also brought stability to the industry. Fishing vessels are grouped according to size and type of equipment, and each group is allocated a set number of fishing days per year, which are then distributed among the boats. The system includes provisions governing equipment – to protect young fish – and provides for the closure of large areas of water to active equipment such as trawls, to protect stocks at the growth and spawning stage. This has reduced discarding rates and the number of incorrectly reported catches. Crews are able to choose from a wide range of fishing strategies where a ceiling is imposed on the total catch from any given stock. Public authorities and fishing organisations collaborated closely on the design of the system, and it has the full support of the industry. The basis for the allocation of fishing days in accordance with capacity levels and the stock size is subject to review via a consultative process in which the fishing industry takes an active part.

Fisheries management in Iceland

Fisheries management in Iceland is based mainly on individual transferable quotas (ITQs). This involves quotas being distributed every year according to each boat's share of individual stock. These quotas and shares are then transferable between boats. No individually-owned or co-owned enterprise, however, may hold more than a 12–35 per cent share of any given species or more than 12 per cent of the total quota of any species suitable for so-called cod equivalence. On the other hand, there are no restrictions on the ownership of fishing vessels or production enterprises. This approach is ideally suited for streamlining operations and for coordinating fleets and output. Most boats of less than 6 brutto registered tons have chosen to belong to a system that only allows fishing with hooks, i.e. longlining and handlining. This group is divided into two: boats with a quota of six transferable species and a group that is allocated a set number of fishing days but is allowed unlimited quantities. In addition, fishermen are required to comply with rules governing the use and design of fishing gear, access to fishing grounds (size and gear), and the closure of areas to protect young fish and spawning-grounds. Control is based on weighing at one of some 60 harbours run by the municipal authorities. A control body, the Directorate of Fisheries, collects electronic catch data from the harbours. It can also send out inspectors to check weighing on board. In addition, it handles the registration of ITQs and can revoke the licences of vessels that exceed their quota. Data on the status of individual quotas is now freely available on the Internet, a practice which has had a beneficial effect on public debate in this area.

Norway – Joint environmental goals for fisheries and aquaculture

All key enterprise organisations in Norway are united behind a common environmental policy. Environmental goals have been jointly established by the executive bodies of the organisations concerned: the Norwegian Seafood Federation, the Norwegian Fishermen's Association, the Norwegian Seafood Association, the Norwegian Raw Fish Organisation and the sales organisation *Norges Sildesalgslag* (www.fhl.no).

Greenland – 'Ecogreen – Imaq'

The Greenland Institute of Natural Resources acts as a scientific advisor to Greenland Home Rule on the sustainable development of renewable resources and other matters relating to the conservation of natural resources. It also conducts research in this and other areas. The Institute is planning a long-term research programme, Ecogreen–Imaq with a view to improving knowledge about the relationship between climate, ecosystems and man-made impact, and in response to the growing interest among local authorities in ecosystem-based management.

Sweden - International Secretariat for Sustainable Fishing

The newly established International Secretariat for Sustainable Fishing (FISH) is run by the Swedish Anglers' Association, the Swedish Society for Nature Conservation and WWF Sweden. In pursuit of the sustainable management of fish stocks, its activities include:

- disseminating information about the status of fish stocks,
- seeking to influence the direction of fisheries policy,
- encouraging the development of more sustainable fishing practices that take greater account of environmental concerns, internationally and in the EU, and
- publicising new research and taking an active part in public debate on sustainable fishing.

Fisheries policy in Åland

A sustainable fishing industry is one of the overall goals of fisheries management in Åland, based both on long-term EU goals and priorities and on those of the Executive Council.

Integrated common guidelines for industrial and environmental policy are currently being drafted, and will be implemented during 2005–2010. They will stress the importance of producing better assessment data on which to base economically sustainable long-term planning. Such data is deemed essential to the proper integration of environmental aspects and considerations into planning activities.

In the case of the fishing industry, the authorities have long sought – to the extent permitted by available resources – to provide support data enabling assessment of the state and development of stocks targeted by small-scale coastal fishing, which at present is neither subject to quotas nor regulated to any great extent in other ways.

Due to the limited resources available for research and other purposes, closer and more appropriate cooperation is needed across national and regional boundaries.

PART 3 – OTHER ACTION AREAS

14. Cooperation with the Adjacent Areas

This section, which deals with cooperation in countries and regions in the adjacent areas, is intended to provide an overview of these areas in relation to this strategy and sustainable development in the Nordic countries. A number of the initiatives mentioned below are also discussed in other sections of this document.

14.1 Development and challenges

The area covered by the Nordic Council of Ministers ‘adjacent area cooperation’ currently comprises Denmark, Finland, Iceland, Norway, Sweden, the autonomous areas of the Faroe Islands, Greenland and the Åland Islands, Estonia, Latvia, Lithuania and parts of Northwest Russia. Since 2003, Arctic cooperation has been carried out under a separate programme, and the account of the west Nordic contribution to Nordic cooperation describes relations with these neighbouring countries.

The overall goal of the initiatives undertaken by the Nordic countries in the adjacent areas is to contribute to long-term economic development within the framework set by environmental constraints, to help reduce differences in health and social conditions, and to support the mainstreaming of sustainable development in all sectors. The Arctic Council’s Inari Declaration of October 2002 notes an improvement in cooperation between, among other bodies, the Nordic Council of Ministers, the Barents Euro-Arctic Council (BEAC), the Council of Baltic Sea States (CBSS) and the EU Northern Dimension, and expresses a desire that this cooperation should continue in order to promote synergy and avoid unnecessary duplication of effort.

In light of EU enlargement, it is now more important to distinguish between cooperation with the new EU Member States and cooperation with Northwest Russia. It will be important for the Nordic countries to turn to account and further develop the good relations that have been established between the Nordic countries and the Baltic states. One of the goals of cooperation with Estonia, Latvia, and Lithuania is a greater degree of Nordic-Baltic cooperation (NB8) on projects and networks linking these countries more closely to the Nordic countries. At governmental level, NB8 meetings are held on most of the sectoral areas, and ministers discuss cooperation, based on joint funding and common initiatives, on an equal footing. At parliamentary level, cooperation takes place *inter alia* through joint meetings between the Nordic Council and the Baltic Assembly.

Now that Estonia, Latvia and Lithuania have joined the EU, future adjacent area cooperation, which will primarily involve cooperation with Northwest Russia, will be funded

with Nordic money. There will be a gradual intensification of this cooperation, in terms of activities and funding.

Responsible use of natural resources and due consideration for the unique environment are of crucial importance. Nordic environmental cooperation accords high priority to solving environmental problems in countries in the adjacent areas and the Arctic. Funding institutions such as the Nordic Environment Finance Corporation (NEFCO) have been specially established to support environmental projects. The Nordic Investment Bank (NIB) is nowadays focusing some of its operations in the adjacent areas on environmental issues, mainly in the form of environmental loans.

Sustainable development is reflected in the Framework Programme for the adjacent area activities of the Nordic Council of Ministers in 2003–2005, and in the action plan for Nordic environmental cooperation for 2005–2008. Implementation of the second EU action plan for the Northern Dimension (ND) for 2004–2006 is opening new avenues of cooperation between the EU and Russia.

It is important to ensure in this connection that joint Nordic initiatives do not duplicate, but supplement, existing bilateral initiatives. The strategy for cooperation with countries in the adjacent areas, Closer to the Nordic Region (*Närmare Norden*) involves measures aimed at closer coordination between the Nordic countries' bilateral efforts in the area and their joint initiatives through the Nordic Council of Ministers. The measures include the creation of an advisory group comprising representatives of the bodies responsible for support funding for eastern countries at the various Nordic foreign ministries.

The adjacent areas initiatives taken by the Council of Ministers include scholarship and exchange schemes, projects in an ongoing programme of cooperation, and a direct presence in the Baltic states and Northwest Russia in the form of official information offices under the Nordic Council of Ministers. These initiatives annually account for some 20 per cent of the council's total budget, i.e. almost €20 million.

The council's Information Office in St Petersburg is responsible for information points established in Murmansk and Archangelsk, and in Petrozavodsk in Karelia. These assist the Nordic Council of Ministers in the implementation of projects and exchange schemes, and play a decisive role in the setting up and sustainable development of networks with the authorities of the regions involved, particularly when it comes to identifying suitable cooperation partners.

The council's adjacent areas activities are both horizontal and sectoral. At the same time the Nordic countries take part in several regional forums and a number of processes, including the Arctic Council, the BEAC, the EU Northern Dimension, HELCOM, Baltic 21, the CBSS and the eastern enlargement of the EU, energy cooperation, Vision & Strategies Around the Baltic 2010 (VASAB 2010), and other sectoral cooperation.

Areas requiring additional emphasis include the promotion of sustainable production and consumption patterns, and the establishment of the Baltic Sea region as an trial area for the development of cooperation on a Testing Ground Facility to evaluate the Kyoto mechanisms. The adjacent areas themselves are currently prioritising work on the environment and health, water, chemicals, and transboundary projects.

In view of the poor state of public health and welfare in Northwest Russia, Finland used a Northern Dimension forum in the autumn of 2002 to initiate a Northern Dimension Partnership for Public Health and Social Wellbeing. A follow-up ministerial conference in Oslo adopted a declaration emphasising the need to "promote sustainable develop-

ment in the Northern Dimension area by improving human health and social wellbeing” (Art. 1), giving it a broader perspective than the traditional emphasis on contagious diseases and health regarded in isolation. The Nordic Council of Ministers plays an active part in the Northern Dimension Partnership for Public Health and Social Wellbeing, and has also emphasised the value of a gender equality and child-based perspective. The sustainability perspective has been given an important place in continuing efforts to implement the partnership programme.

The aim is for the partnership to improve coordination and cooperation between the various players in these areas in Northwest Russia. Cooperation can thus benefit from additional resources, including those generated by synergy.

The North Atlantic areas, including Scotland and the islands, Ireland, and Canada’s North Atlantic territories, are also covered by the decision taken on 5 September 2003 by the Ministers for Nordic Cooperation in connection with their report, *The International Nordic Region – Nordic Co-operation in a European Framework*. This means that the North Atlantic area is relevant to Nordic cooperation and Nordic strategies and goals for sustainable development in the same way as the countries around the Baltic.

Nordic cooperation in the western Nordic region provides a basis for cooperation with the region’s North Atlantic neighbours. This cooperation in the North Atlantic should be strengthened until it compares with levels of cooperation with other Nordic neighbours. Although areas of cooperation may be many and varied in principle, it is inevitable that the sea in particular – its resources and the life around it – is a matter of great, common interest to all the Nordic countries and their North Atlantic neighbours. In this sense, the sea is a strong binding force where problems and opportunities generate a direct need for transboundary, cross-sectoral cooperation for the benefit of sustainable development.

Since the Arctic Council was set up in 1996, its work, which originally centred on environmental issues, has been extended to cover sustainable development and its socio-economic aspect. The Barrow Declaration of 2000 identified the following six central areas with respect to sustainable development in the Arctic: health issues and welfare, sustainable economic development, education and cultural heritage, children and young people, use of natural resources (including living organisms), and infrastructural development. In addition, three horizontal themes have been defined in connection with the work of the Arctic Council: sustainable development, capacity building, and traditional knowledge. Efforts to promote sustainable development must also take account of gender equality issues, and in particular the status of women.

The Nordic Council of Ministers has observer status in the Arctic Council. Its project – the Nordic Council of Ministers Cooperation Programme for the Arctic – has its own programme and budget. Because of the special character of the Arctic region, it is an important indicator of global changes and has therefore acquired greater political significance.

At the WSSD in Johannesburg, attention was drawn to the Arctic region as an important early warning area. The effects of climatic changes show up here earlier than in other regions, as do the environmental impact on its inhabitants, fauna, flora and the natural environment. Under the Inari Declaration of 2002, an action plan for sustainable development is to be drafted for the Arctic Council in the autumn of 2004.

The Barents region was set up in 1993, and in the ensuing 10 years the (BEAC) and the Barents-Euro Arctic Regional Council (BEARC) have both developed a wide range of activities. Working groups are active in many fields. Work on sustainable development mainly involves working groups on energy, the environment, the economy, transport, health and social issues, youth and indigenous inhabitants, and subgroups for matters such as forestry and bioenergy. A network for the development of local aspects of Agenda 21 in the Barents Region has been active for a number of years within the Regional Council.

At the meeting of environmental ministers of the Barents region in August 2003, one of the proposals adopted was a programme for cleaner manufacturing and principles for sustainable forestry and preservation of biodiversity, along with a list of the most urgent measures and environmental pollution sources in Northwest Russia. In addition, a declaration was adopted confirming *inter alia* the commitments entered into in Johannesburg and at the UN Economic Commission for Europe (ECE) conference in Kiev in May 2003. The significance of climatic changes in the Barents region was given special emphasis, as was the need for cooperation with respect to measures.

The BEAC has recommended the implementation of the 'hot-spot' programme in Northwest Russia. The programme was recommended in a joint report drawn up by AMAP and NEFCO. It contains recommended environmental investment projects in Northwest Russia, which, in addition to sizeable environmental benefits, will also contribute to better health, social development and a more sustainable business sector.

The development of sustainable production and consumption in the adjacent areas is an important focus for Nordic initiatives. Nordic cooperation will achieve this through political dialogue and by involving adjacent areas in concrete programmes and projects with this aim. An important basis for sustainable consumption and production is the Programme for Cleaner Production, which has been under way in the areas adjacent to the Nordic region since 1990. In the Baltic states and Poland, the programme has progressed under its own steam, but Northwest Russia will receive continued financial support from the Nordic countries. The programme is an important focus for initiatives by the BEAC and the Arctic Council. A policy paper and an action plan for the development of clean production and sustainable production and consumption in Northwest Russia have been prepared and their recommendations will be followed.

NEFCO was set up in 1990 with the aim of promoting environmental investment in the adjacent areas with a view to reducing environmental impact in the countries in question while reducing environmental problems cost-effectively in the Nordic countries. The aim is also to make use of Nordic environmental technology and reduce the risks for Nordic businesses wishing to invest in the region.

The primary area has now been moved to Northwest Russia and project cooperation with Ukraine will also be developed in due course. Fourteen years' experience has confirmed that NEFCO contributes to cost-effective environmental initiatives in the adjacent regions. An equivalent environmental impact in the Nordic countries would have entailed an investment many times as large. The Nordic Investment Bank (NIB) finances investment projects and project exports both in and outside the Nordic region. One of the bank's main areas of activity lies in the adjacent areas. Here the NIB prioritises investment and environmental loans to the private sector and states or in return for state guarantees in the Baltic states, Poland and Northwest Russia. The Baltic states will become members of the NIB on 1 January 2005. Under the bank's environmental policy,

all projects funded by the NIB must have its environmental permits duly evaluated and be environmentally acceptable. An important side-effect is the dissemination of expertise in the environmental field which NEFCO and the NIB are contributing to with their investment projects and commitments. In addition to their environmental effects, the projects are also of major indirect significance for health, the improvement of social conditions, job preservation and possibly new employment opportunities.

14.2 Long-term goals

The overall goals for long-term Nordic investment in the adjacent areas, within the framework of the present strategy, are:

- to contribute to long-term economic development based on consideration for the natural environment, environmental requirements and traditional ecological knowledge,
- to contribute to the reduction of social and health disparities,
- to support the integration of sustainable development in relevant sectors,
- to promote sustainable development through Arctic cooperation and reduce the pollution of ice, sea, water and air in the adjacent areas, and reduce long-range air pollution in the Arctic,
- to initiate a strategy for a sustainable marine environment and justifiable use of marine resources in the North Atlantic,
- to preserve and protect biological diversity and develop the sustainable use of resources,
- to monitor and reduce the effects of climate change and changes in the ozone layer in the north,
- to increase nuclear security and security in the handling of nuclear waste,
- to support openness, transparency, democracy and public participation,
- to contribute to the creation of uniform legislation and efficient local administration,
- to help ensure that education in sustainable development is a fundamental principle in education,
- to support the development of environmentally sound technology and eco-efficiency, and to raise levels of technical expertise in environmental technology.

14.3 Goals and initiatives for 2005–2008

The areas below are dealt with in alphabetical order. No priority is thereby accorded to any of the initiative in the various areas.

The Nordic Council of Ministers will continue to develop cooperation with the Baltic states, Northwest Russia and the Arctic. As of 2005, however, cooperation will no longer be covered by a single, cohesive programme for the adjacent regions, but will be adapted to the special characteristics of each region and currently applicable political priorities.

The Arctic

The Nordic countries are to actively support the activities of the Arctic Council to promote sustainable development in the whole of the Arctic area with the aim of including both the environment and socio-economic aspects in the concept of sustainable development. Promoting development in the Arctic areas which is sustainable in every respect will require the development of existing instruments and efforts to achieve synergy gains. The aim is to ensure that common Nordic interests in the whole circumpolar region are served by this cooperation.

The Arctic – goals and initiatives for 2005–2008

In the short term, the Nordic countries will:

- extend special support for initiatives involving indigenous peoples, welfare projects including gender equality issues, sustainable use of natural resources, and development of education, training and research in the circumpolar region,
- contribute to the work of identifying indicators, report on sustainable development, and continue to support the Arctic Council's working group on sustainable development,
- follow up and evaluate the results and recommendations of the Arctic Climate Impact Assessment (ACIA) and the Arctic Human Development Report (AHDR),
- support continuing efforts to restrict the use and transport of POPs,
- help develop cooperation and a viable division of responsibilities between various players and regional processes in the region,
- encourage active and visible participation in the International Polar Year 2007–2008.

The Barents region

The Nordic countries are to continue to develop the BEAC to make the best use of and promote sustainable development across national borders in the Barents region in a way that respects the culture of the indigenous peoples and makes the most of opportunities for developing both new and traditional occupations. It is also important to promote measures and international funding aimed at environmental improvement projects that also contribute to the health of the population.

The Barents region – Goals and initiatives for 2005–2008

In the short term, the Nordic countries will:

- promote the implementation of concrete measures to increase nuclear safety,
- support implementation of the measures recommended in the updated NEFCO/-AMAP Hot Spot List in the Barents region and in the action plan for the Barents Region Cleaner Production Strategy,
- promote cooperation on climate issues including environmental monitoring and realisation of the Joint Implementation project in the Barents region,
- play an active part in Barents cooperation on the east-west extension of transport routes,
- play an active part in the BEAC Working Group on Health and Social Affairs,
- support ongoing efforts to promote sustainable forestry, the introduction of the model forest concept in the Barents region, and measures to protect biodiversity,
- support efforts to make the production, distribution and consumption of energy more efficient, and increase the use of bioenergy in the Barents region,

- support ongoing Agenda 21 projects and programmes.

Russia

Effective cooperation with the regions of Northwest Russia near the Nordic countries is important and will be stepped up in the coming years. Nordic cooperation in this area should also be seen as contributing to the achievement of goals and action plans elaborated within the Northern Dimension framework, particularly as Action Plan 2 is largely concerned with identifying opportunities for cooperation between the EU and Russia. Nordic cooperation features prominently in the action plan. Nordic cooperation with Northwest Russia can take place in collaboration with the Nordic Investment Bank (NIB), NEFCO and other financial players in the region. Cooperation is intended to cover all sectors.

The objectives of the EU Wider Europe – new Neighbourhood Initiative largely coincide with the goals of the Nordic Council of Ministers on cooperation with Northwest Russia: the promotion of sustainable economic and social development in border areas. These efforts are expected to contribute to overcoming challenges in environmental and health matters, and to promote people-to-people cooperation.

Russia – Goals and initiatives for 2005–2008

In the short term, the Nordic countries will:

- Further develop funding instruments for small and medium-size projects in EU and NEFCO cooperation in Northwest Russia,
- Continue to support and further develop the process of building up efficient authorities associated with sustainable development issues,
- Develop the Nordic Council of Ministers' action plan for cooperation with Northwest Russia,
- Extend the cooperation network between Nordic authorities and agencies in Northwest Russia at regional, local and federal level, with the help of the Nordic Council of Ministers' network of offices in Russia.

The Baltic Sea region

Cooperation in the Baltic Sea region is now in an exciting process of transformation. In this sphere of cooperation, the region comprises all the Nordic countries, Russia, Estonia, Latvia, Lithuania, Poland and Germany. Now that the three Baltic states have become full EU members, some of the work previously undertaken as part of Baltic Sea cooperation will now be carried out within the EU. An important task will be to identify projects and measures in which Nordic added value is clear,

The Nordic Council of Ministers has been active in the Baltic states since 1991, when its first information office was opened. An important goal was to establish a series of networks with the Baltic authorities. The services of the Nordic Investment Bank (NIB) are now available to the Baltic states.

There is close interaction in the energy sphere between the Nordic Council of Ministers and the CBSS. To a large extent, Nordic cooperation in the energy sector forms part of an ongoing joint energy initiative in the Baltic Sea region – Baltic Sea Region Energy Cooperation (BASREC). The IT sector provides an example of concrete, informal co-operation between the Nordic Council of Ministers and the CBSS. The CBSS Senior Officials' Committee for the Information Society has drawn up an action plan for im-

plementation by the Northern Dimension, in accordance with the wishes of the EU Commission and others. The most important areas of operation in the action plan have been taken from existing activities/projects within the Nordic Council of Ministers co-operation framework, and involve a broadening of activities with a “Baltic” dimension.

Work in connection with Agenda 21 for the Baltic Sea region, Baltic 21, is carried out in accordance with an action plan agreed by the foreign ministers in 1998, and covers the following areas: agriculture, energy, fishing, forestry, industry, tourism, transport, education, and spatial planning. A second progress report, presented in 2003, was considered in the following year as a possible basis for new guidelines for further action from the region’s prime ministers in the spring of 2004. With regard to future measures, environment ministers in the region have stated that it is important to strengthen cross-sectoral work, present demonstration projects, and encourage participation by many different groups.

The Baltic Sea region – Goals and initiatives for 2005–2008

In the short term, the Nordic countries will:

- promote the implementation of the IMO decision-in-principle to classify the Baltic Sea as a particularly sensitive sea area (PSSA), and actively seek to ensure that the experience gained from cooperation in the Baltic Sea region is reported to the UN Commission on Sustainable Development (CSD) in accordance with the two-year cycles for the follow-up of the WSSD.
- strengthen Transboundary cooperation between the Nordic countries, Russia and the Baltic states and between the Baltic states by:
 - identifying administrative, technical and other obstacles to more effective trans-boundary cooperation,
 - supporting efforts to boost know-how and expertise, and ensuring greater use of EU funding mechanisms,
 - adopting measures to tackling border problems using the experience gained by the Nordic countries from various types of bi- and multilateral cooperation committees and forms of cooperation.
- seek to improve water quality in the region, *inter alia* through the EU Water Framework Directive,
- support development of effective local, regional and national administrative bodies for sustainable development,
- build networks with a view to combating infectious diseases and improving the circumstances and opportunities of vulnerable children in the Baltic Sea region (CBSS Task Force),
- support science and technology transfer
- promote transparency in the timber trade in the Baltic Sea region in the interests of sustainable forestry and an efficient timber industry,
- transfer Nordic experience of implementation of EU legislation, and transfer experience acquired by the Baltic states to Russia,
- examine the possibility of setting up of special Environmental Impact Assessment (EIA) panels for the Baltic Sea region.

Denmark

Over the next four years, Denmark will implement a new neighbourhood programme with special focus on the Baltic Sea region and the western Balkans. The programme will focus on:

- Democracy and human rights, legal reforms and capacity building, civil society and free media,
- Security and stability, including conflict prevention, combating terrorism and crime, etc.,
- The environment and energy, and business and economic development in the Baltic Sea region,
- Initiatives may also be launched in other neighbouring countries and regions adjacent to the enlarged EU if this is important for stability in Europe, e.g. in the Caucasus, Ukraine and Moldova.

The initiative in the Baltic Sea region, is targeted particularly at Russia. The country is a key player with regard to development and stability in the region. There is a need for close cooperation with Russia on matters such as the environmental problems of the Baltic Sea. Environmental initiatives will focus on reducing emissions into the Baltic and maintaining Russia's interest in the environmental problems of the Baltic Sea region and in global and regional environmental issues.

15. Public participation and Local Agenda 21

15.1 Transparency and public participation

Experience shows that an environmentally aware population and public confidence in the political system and administration are predicated on right of access to information on environmental matters, early public participation in the preparation of decisions concerning the environment, and the right to appeal against decisions by the authorities. In this respect the 4th Conference of Environment Ministers held in Aarhus in 1998 was a major step forward. The Aarhus Convention guarantees access to information, public participation in the decision-making process and the right to appeal in environmental matters.

The convention provides for right of access to documentation in the environmental field and requires authorities and agencies to actively compile and disseminate environmental information. It also stipulates that members of the public be given the opportunity to participate in agency decisions affecting the environment, particularly decisions in connection with specific activities, and in the drafting of plans and programmes and administrative regulations relating to the environment. In addition, the convention gives citizens the right to call for a legal review of agency decisions, especially if these concern access to information and public participation.

The Aarhus Convention has been ratified by 40 European countries. It is also open to countries outside Europe. Since it came into force on 30 October 2001 its ratification has proceeded fairly quickly. Denmark ratified it in September 2000, and Norway did so in May 2003. Ratification by the remaining Nordic countries is expected to follow as soon as possible.

15.2 Local Agenda 21

The Agenda 21 document, adopted at the environment and development summit in Rio de Janeiro in 1992, notes that the solution to many of the world's environmental problems lies in sustainable development of society rooted in local activities. It is therefore proposed that local authorities should enter into dialogue with the general public with a view to reaching a consensus on the practical implications of genuine sustainable development – a consensus on a local Agenda 21.

The WSSD confirmed the governments' commitment to sustainable development and the effective implementation of Agenda 21. The political declaration and the implementation plan lay the ground for the adoption and implementation of practical measures to tackle the biggest challenges facing the world today. These include the need to

strengthen the institutional framework for sustainable development, including laws and institutions supporting sustainable development. Each country should promote public participation by making information accessible and encouraging its citizens to take part in the drafting and implementation of a policy for sustainable development. It is also anticipated that countries will emphasise the role and capacity of local authorities and other stakeholders with regard to the implementation of Agenda 21 and the practical realisation of the outcome of the summit. Ongoing support for local Agenda 21 programmes should be strengthened and partnerships between local authorities and agencies and stakeholders at other levels should be encouraged to promote sustainable development, as laid down in the Habitat Agenda, for example.

Local Dialogue 21 spotlighted concrete examples of bridge-building between local Nordic communities and East and South at the UN summit in Johannesburg. The programme, which was funded by the Nordic Council of Ministers, received a very favourable reception at the summit.

At the summit, the concept Local Action 21 was presented by the local authorities as the next step in Local Agenda 21. The centre of gravity of the agenda processes has been the integration of sustainable development with local planning processes based on municipal visions for the future, priorities and specific goals for local authority activities. In the first place, however, Local Action 21 assumes a move from agenda to action through efforts to focus on special factors that hinder sustainable development, such as poverty, injustice, conflicts, unhealthy environments and insecurity. In the second place it anticipates that efforts will be made to counter the worldwide depletion of natural resources and global environmental pollution. Thirdly, it expects the introduction and consolidation of instruments that will be used in local administrative contexts to ensure rapid implementation, effective monitoring and continuous improvement.

In the Nordic countries, local authorities have long enjoyed powers of decision in many areas connected with energy use, natural resources, the living environment, eco-efficiency in the private sector, public transport, social welfare and health. Local authorities play a vital role by bringing citizens, businesses and other stakeholders into cooperation on sustainable development. Since balanced economic development facilitates the integration of social and environmental considerations with sustainable development, this linkage at the local level must be strengthened as much as possible. The summit's implementation plan lays stress on efforts to change patterns of production and consumption. In this respect, too, local authorities in the Nordic countries already possess the mechanisms needed to switch development to a sustainable orientation (see also Chapter 2).

Work on Local Agenda 21 in the Nordic countries

Local government authorities play a specially prominent role in the Nordic countries, both politically and economically. The decision-making process is traditionally characterised by subsidiarity, administrative processes are open and transparent, and the general public is brought into planning and major local initiatives. Citizens are traditionally brought into the management of local institutions for education, social issues, culture and leisure activities. It was thus possible to incorporate the Local Agenda 21 concept directly into long-standing cooperative efforts in a range of areas.

Following the summit, a large number of Nordic local authorities and regions opened a dialogue and began concrete activities to implement Agenda 21. Agenda 21 programmes and projects in the Nordic countries are broadly based and enjoy widespread

public support. There are many good examples of successful attempts by local authorities and regions to involve the public and improve cooperation between the various players while integrating the different elements of sustainable development more effectively.

In the Nordic region, Local Agenda 21 has been instrumental in bringing elected representatives, local authorities, businesses, stakeholders and citizens together behind sustainable development in their own local authority areas. The processes under way have engaged a great number of people. Overall, Agenda 21 has brought communities closer to concrete action by generating the knowledge and skills needed to achieve sustainable development.

Over the years, local businesses have assumed greater significance in the transition to sustainable development. Although a great number of activities, partnerships and initiatives have taken shape, there is still room for more activity in this area.

Norway has sought to make use of the indigenous people's perspective, among other things by initiating a Sami LA21 project of its own. The project has helped to raise the Sameting's level of ambition in the field of environmental policy, partly by integrating the environment and sustainability as goals in the framework of its everyday activities, and partly in the form of concrete proposals for follow-up by launching an indigenous people's Agenda 21.

Cooperation on Local Agenda 21 with countries in the adjacent areas

Extending Agenda 21 activities to increasing numbers of local authorities requires the creation of regional networks for exchanges of experience and information within and among the Nordic countries and the adjacent areas. This will serve to strengthen local democratic processes and increase citizens' sense of responsibility. In this connection, the Nordic countries help promote and stabilise activities in citizens' organisations and institutions so that they become integrated parts of the work being done on sustainable development in the countries in the adjacent areas.

Many Nordic towns have begun various forms of bilateral cooperation with towns and cities in the adjacent areas with a view to framing Local Agenda 21 programmes. The Union of the Baltic Cities (UBC) and its environmental committee have been devising activities to be implemented throughout the Baltic Sea region, and a common forum was set up in conjunction with the Baltic 21 Action Programme: the Baltic Local Agenda 21 Forum (BLAF21F). With the support of the Finnish Ministry of the Environment a trial project was started in St Petersburg and Kingisepp, which inspired the city of St Petersburg and the regional authorities of the Leningrad Oblast to initiate an Agenda 21 project. Corresponding bilateral exchanges of experience have taken place between local authorities in Denmark and the Baltic States, and between Swedish local authorities and local authorities in Russia. In Norway work is under way to extend Local Agenda 21 to the Barents region, and there is a desire to strengthen the coordination of joint efforts involving local authorities and local communities.

The International Council for Local Environmental Initiatives (ICLEI), in which a number of Nordic local government authorities take part, is playing a crucial role in following up the millennial objectives of the CSD. The ICLEI encourages local authorities to link their local actions to international strategies, and supplies examples, tools and guidelines (www.iclei.org). In March 2004, the Norwegian Association of Local Authorities organised a conference – which the ICLEI also attended – to mark the start of efforts to build networks between Norwegian local authorities and local authorities in the east and the south. These efforts were followed up by a side event at CSD 12 in April 2004, organised in collaboration with the World Bank, UNDP and the ICLEI.

15.3 Goals and initiatives for 2005–2008

15.3.1 Increasing the involvement of citizens in the Nordic countries and the adjacent areas

All the Nordic countries are expected to have completed implementation of the Aarhus Convention by 2004–2005. The Nordic countries also intend to support its rapid implementation in the countries in the adjacent areas. The Nordic countries will continue to press for the application of the principles of the Aarhus Convention in other areas of importance for sustainable development.

15.3.2 Increasing citizen involvement in the activities of the Nordic Council of Ministers

The Nordic Council of Ministers is actively seeking to step up public involvement in its work in accordance with the provisions of the Aarhus Convention on access to, gathering and dissemination of environmental information, and on public participation in environmental planning, programmes and policies.

The Nordic Council of Ministers ensures that citizens' organisations are able in practice to take an active part in the preparation and drafting of agreements on sustainable development and in the follow-up of the Prime Ministers' Declaration on Sustainable Development.

Local authorities will be urged to develop networks and spread their experience and examples of good practice with regard to sustainable development. The inclusion of sustainable development initiatives at local authority level should be considered in the context of the Nordic Council's Nature and Environment Prize.

15.3.3 Strengthening and extending Local Agenda 21 activities in Nordic local authorities

An important challenge for all the Nordic countries is to promote the continued extension of Agenda 21 activities to all local authorities and ensure a transition to concrete action to promote sustainable development. Similarly, they should seek to obtain approval for local action programmes for sustainable development with a view to more effectively bringing together and integrating sustainable development in different thematic areas and in sectoral implementation.

Special efforts must be made to motivate local businesses to take part in this endeavour and to bring about exchanges of experience between companies. Improved cooperation between businesses and public authorities would be beneficial. Participation by businesses should also imply participation by their employees. The inclusion of representatives from businesses and NGOs in Local Agenda 21 committees should ensure local support and active involvement.

In urban local authority areas, activities could focus on the integration of health and social policies in this sphere, and special efforts should be made to encourage urban ecological initiatives, including the greening of buildings and residential areas. Sustainable urban development also presupposes additional measures to improve the efficiency of materials and energy use, and sustainable production and consumption. Towns can influence this both directly and indirectly. Large-scale problems in connection with transport and air pollution, heating and electrical systems, water, drainage and drainage flow – in which the goal is to reduce the generation of waste and increase recycling –

are examples of areas in which towns can bring influence to bear. Public involvement in planning work is an important concern in the Nordic region.

In rural local authority areas, special efforts are needed to mobilise local resources in the transition to more environmentally appropriate agriculture and forestry, create new jobs and develop new alternatives for cultural and other services. Other important concerns in rural areas are the development of sustainable tourism and alternative leisure activities. A good example of this is the Arctic Council initiative for developing a sustainable model for regional tourism in the Arctic.

Cultural environments are a source of knowledge about the lifestyle and resource use of previous generations, and they provide a basis for greater awareness and responsibility with regard to environmental challenges. Moreover, monuments, ancient remains and cultural environments represent major social investments. It is therefore absolutely essential from a sustainable development standpoint that these things are carefully safeguarded, a task that should form part of our efforts to achieve a sustainable society.

15.3.4 Helping to strengthen and broaden Agenda 21 activities in the adjacent areas

The Nordic countries will continue their efforts to strengthen and broaden Local Agenda 21 in the adjacent areas and thereby emphasise social development and the need to strengthen civil society. It is also important to encourage local authorities in the adjacent areas to contribute to cooperation efforts in the Baltic Sea region and the Barents region.

15.3.5 Strengthening partnership as a follow-up of the WSSD

The Nordic Council of Ministers will evaluate ways in which cooperation on activities, NGOs and other aspects of civil society can be strengthened in order to contribute to sustainable development.

15.3.6 Developing indicators for Local Agenda 21 and sustainable development

Funding is needed to support the development and application of local sustainable development indicators to enable local authorities to compare their work. The indicators are intended to provide information to the public and to stimulate public debate in relation to sustainable development.

16. Implementation and follow-up

The present strategy is a revision of the strategy for 2001–2004. It continues to be based on the goals for sustainable development set out in the Statement of Government Policy, and lays a foundation for cross-sectoral work on sustainable development in the Nordic countries and the adjacent areas in the 2005–2008 time frame, with 2020 as the target year for long-term goals.

If the goals in the Statement of Government Policy and the strategy's ambitious long-term, 20-year targets are to be achieved, major efforts will be needed at national and local level, and through Nordic cooperation, channelled through the Nordic Council of Ministers. Successful implementation of the strategy also presupposes that all active players in society are involved in its implementation and follow-up.

The strategy for sustainable development is revised every four years. Goals and initiatives are to be implemented at national level and through the work of the Nordic Council of Ministers. This assumes that each country in the Nordic region follows up the strategy economically, administratively and politically. If the strategic goals are to be achieved, sustainable development must be given high priority economically, administratively and politically in the context of Nordic cooperation, in the Nordic Council and in the Nordic Council of Ministers.

Sustainable development is given high priority in all the Nordic countries. The strategy's short and long-term goals and initiatives will enable the countries to implement a policy of sustainable development at a lower cost and with better results.

Nordic cooperation for sustainable development will continue to place major, new demands on cooperation between the Nordic countries. Effective follow-up of the strategy presupposes an ongoing political dialogue, solid backing at prime ministerial level, and follow-up at ministerial meetings and in the committees of senior officials responsible for the respective areas. A number of new areas have been integrated in the revised strategy for 2005–2008, and the economic and social dimensions have been strengthened. A set of indicators for sustainable development in the Nordic region was also developed in connection with the strategy. The system of indicators was completed in 2003 and will be revised in 2005 when the new goals and initiatives for 2005–2008 are set.

16.1 National implementation

Primary responsibility for strategy implementation rests with the Nordic countries and the autonomous regions.

The strategy constitutes an important element in the shaping of each country's national policy for sustainable development.

Sustainable development in the Nordic countries is predicated on the active participation of players at different levels and on interaction between players, including local authorities, the business sector, NGOs, employees, etc. The key instrument is sectoral implementation the action areas of the strategy.

The short and long-term goals and initiatives in the Nordic Strategy for Sustainable Development will continue to have significant consequences for national policies in all the Nordic countries. Proposed initiatives must be followed up at national level as regards budget and administration. It is essential to the follow-up of the Nordic strategy that the governments of all the countries and autonomous areas follow up their own measures. It also presupposes that the initiatives undertaken are binding with regard to ongoing national policy.

16.2 Implementation and follow-up in the sphere of Nordic cooperation

The Nordic Council

The strategy must be presented to the Nordic Council for comment – and endorsement – before its final approval.

Under the terms of the Helsinki Treaty, the Nordic Council of Ministers must submit an annual report on Nordic cooperation to the Nordic Council and an account of its plans for future cooperation. The Council of Ministers must also present its proposed budget to the Nordic Council for comment. This procedure gives the Nordic Council an opportunity to influence the way in which the Council of Ministers plans and budgets for the implementation of the strategy.

The adopted strategy is also used as an element in a dialogue with the Nordic Council on sustainable development in the Nordic countries and the adjacent areas:

- A status report on the implementation of the strategy is presented to the Nordic Council,
- This can be used as a basis for special thematic discussion at sessions of the Nordic Council or at special thematic conferences or similar initiatives,
- Work on the strategy may be the theme of special meetings between the Nordic Council of Ministers and the Nordic Council and its committees.

The Nordic Council of Ministers

The strategy for sustainable development in the Nordic countries and adjacent areas will form the basis of the budgetary process and long-term work of the Nordic Council of Ministers in the sphere of sustainable development until 2020, and for work on sustainable development initiatives until the end of 2008.

Nordic cooperation is based on the principle of ‘Nordic benefit’. In the view of the ministers responsible for cooperation, this means that if an activity is to be carried out under the auspices of the Nordic Council of Ministers, it should:

- comprise operations which would otherwise take place under national management, but where demonstrably beneficial effects may be achieved by way of joint Nordic solutions,
- manifest and develop Nordic affinities,
- enhance Nordic expertise and competitiveness.

The Nordic Council of Ministers is responsible for financing the implementation of strategy measures in areas where countries are not individually responsible for follow-

up. The council is also responsible for providing information on, reporting on, assessing and reviewing the strategy.

The strategy is to be implemented and followed up within the framework of the Nordic Council of Ministers as follows:

The Prime Ministers

The strategy remains based on the Prime Ministers' Declaration on a Sustainable Nordic Region. It is important that efforts to achieve sustainable development in the Nordic countries and the adjacent areas are continually dealt with at the prime ministerial meetings during sessions of the Nordic Council.

The present strategy has been adopted by the Prime Ministers. A report on implementation and follow-up, evaluation and review of the strategy is submitted to the Prime Ministers and the political leaders of the autonomous areas every four years, which means the next submission will be in 2008.

Ministers for Cooperation

By virtue of their coordinating function and their role in assisting the Prime Ministers in accordance with the Helsinki Treaty, the Ministers for Cooperation (*MR-Sam*) have overall responsibility for the Nordic Council of Ministers' cross-sectoral coordination of strategy implementation. The Nordic Cooperation Committee assists the CM-Coop in its work, which includes:

- planning,
- budgeting,
- reporting,
- dealing with cross-sectoral issues of relevance to the strategy,
- evaluating the strategy,
- reviewing the strategy,
- sustainable application of Nordic Council of Ministers' own budget.

Councils of ministers responsible for special fields of policy

Sustainable development is cross-sectoral by nature. Successful implementation of the strategy presupposes that the appropriate specialised councils of ministers/sectors are responsible for and play a full part in the implementation of the strategy and its goals and initiatives, and that the work of sustainable development is integrated into the Nordic Council of Ministers' normal areas of activity.

The strategy for sustainable development will function as the primary cross-sectoral framework for sustainable development work by the Nordic Council of Ministers and its relevant sectors.

Primary responsibility under the Nordic Council of Ministers for implementation and follow-up of the content of the strategy will lie with the councils of specialist ministers. Working within their respective fields, these will ensure that the goals and initiatives of the strategy are implemented in an appropriate way. They are responsible for organising implementation and the necessary follow-up mechanisms, in coordination with other relevant sectors. They are also required to study the progress strategy implementation and contribute to reports on and assessments of implementation.

In relevant areas, the strategy is to be implemented and followed up in the strategies of the sectors in question, in their action plans and programmes or other policy levers. The sectoral strategies must be devised and designed to follow up, supplement and make

concrete areas within the strategy relevant to the sectors in question, with the emphasis on goals and initiatives. This is to ensure that the sectors integrate their work on sustainable development into their regular areas of activity. The sectoral strategies will be adapted so their timescales fit in with the strategy for sustainable development.

Budget and resources

Primary funding for strategy implementation is part of each country's follow-up responsibility.

Implementation of the strategy by the Nordic Council of Ministers will be financed out of the council's own budget. The appropriate councils of specialist ministers will be responsible for funding implementation from their sectoral budgets, with the main emphasis being placed on the strategy's goals and initiatives. The requisite budgetary funds for this will be an appropriation on the budget of the Nordic Council of Ministers. Funds will also be appropriated as a stimulus for the financing of joint Nordic initiatives in the sectoral areas in question. Subject to a specific assessment, it will also be possible to use these funds for activities related to sustainable development that meet the goals of the strategy but are not in receipt of sectoral funding.

The Secretariat of the Nordic Council of Ministers will also act as a secretariat for the implementation and follow-up of the strategy.

Reporting, assessment and review

Towards the end of the strategy period, the results and experience gained during the implementation of the strategy will be assessed. A proposal for reviewing the strategy will accordingly be drafted in 2007, and submitted to CM-Coop, the prime ministers and the political leaders of the autonomous areas. The review should contain specific proposals on goals and initiatives for 2009–2012 and an assessment of which action areas are politically relevant. This assessment and review of the strategy should serve as the basis for the work of the sectors on new and revised strategies and other policy levers.

The development of indicators within the various action areas is a precondition of progress reports, and will itself remain an action area in the strategy. The indicators presently in use will be updated to relate to the goals and initiatives for 2005–2008. The indicators will continue to be harmonised with national and relevant international indicators, such as those used by the EU, the OECD and Baltic 21.

Reports on implementation of the strategy will be sent to the Nordic Council for information purposes, and will serve as an instrument for dialogue with the Nordic Council on sustainable development efforts in the Nordic countries and adjacent areas. Reports will be available to the public, and will be used in appropriate forums and in dialogue and discussions with other players such as the EU, Baltic 21, the Arctic Council and the Barents Council.

Information

Strategies should be supported by extensive, broad-based information. The choice of dissemination channels and procedures play a crucial role. The present strategy's specific short and long-term goals should be widely disseminated at national level in the Nordic countries, within Nordic cooperation structures and internationally. This will help the countries and the region as a whole to influence and interact with national and international sustainable development processes.

Thus the purpose of the information is to ensure that the relevant players know that the strategy exists, to arouse interest among those working on sustainable development in implementing the strategy in their own work, and to enable players to learn about the outcome of the implementation. The language and design of the information provided should be adapted to the various target groups so that it will appear more credible, create trust in the message and facilitate cooperation.

In some cases the information itself is an important part of the implementation of the strategy. The indicators used to measure the results may serve as an example. Conveying information about indicators has two aspects: the choice of indicators brings key problems into focus, and their use yields concrete data on whether an area of development is actually sustainable.

In 2003 an information plan for the strategy was approved. The plan is available on the Nordic Council of Ministers website. It must be updated regularly and efforts must be made to ensure that information concerning strategy implementation and results is reaching the people and organisations involved. Sustainable development should occupy a prominent place in the Nordic Council of Ministers' general information strategy.

As regards sustainable development, the Nordic Council of Ministers website must be actively and regularly used and developed with a view to presenting relevant information and other material to the general public. The strategy, indicator reports and other relevant reports, information about projects, reports and other relevant decisions and activities should be published on the website. The address is: www.norden.org/baeredygtig_udvikling/sk

To save on resources and increase the effectiveness of information work, the latter should be coordinated with corresponding efforts to follow-up other Nordic strategies and action plans important to sustainable development. This can be done by ensuring that national websites on sustainable development always include links to the Nordic strategy.

Disseminating information about the strategy and related matters could also help make Nordic cooperation as such, and the results it achieves, more widely known. Information can be disseminated through regular seminars and conferences about the strategy and its implementation, as was done both nationally and internationally during the 2001–2004 period.

The adjacent areas

The strategy embraces both the Nordic countries and the Nordic countries' cooperation with the adjacent areas on sustainable development.

The Nordic countries and the autonomous areas should seek to ensure that relevant parts of the strategy can serve as a basis for bilateral cooperation between them and the adjacent areas. The Nordic countries should also seek to implement, or further develop – as part of relevant multilateral cooperation – those aspects of the strategy that affect the adjacent areas, and which include Baltic 21, the Arctic Council, the Barents Council, Baltic Sea cooperation, North Atlantic cooperation, international financial institutions and the EU, including the action plan for the Northern Dimension. The strategy can also serve as a best practice example of work on sustainable development in the adjacent areas.

On 5 September 2003, the Nordic ministers for cooperation approved a set of guidelines for future external cooperation: The International Nordic Region – Nordic Co-operation

in a European Framework. Their purpose is to direct the gradual development of the activities of the Nordic Council of Ministers. They are included in the publication, Nordic Cooperation in the EU, which may be obtained at: www.norden.org/eur/sk.

Implementation of those parts of the strategy relevant to the adjacent areas will also form part of Nordic cooperation with these areas.

Other international processes

The strategy is an instrument designed to enable the Nordic countries to maintain a high level of achievement in their pursuit of sustainable development. For this reason it should continue to be used proactively in connection with international processes, such as the Lisbon process in the EU and the EU Northern Dimension, and with strategies and action plans within the OECD, the CSD and UNECE. Readers are referred to the introductory chapter for further remarks in this connection.

Non-governmental organisations (NGOs)

Increased contact with and the growing involvement of NGOs is expected to result in greater visibility and wider popular understanding of and support for the cooperative work of the Nordic Council of Ministers on sustainable development both nationally and internationally. The Nordic Council of Ministers' guidelines for cooperation with the voluntary sector and non-governmental organisations are aimed at establishing open, transparent, structured contacts with NGOs, opening a dialogue with these bodies and ensuring that their views, know-how and expertise are taken into account before decisions are taken.

The draft of the revised strategy was sent out for comment to some 120 Nordic NGOs. The most important views elicited in the referral process have been published on the Nordic Council of Ministers website: www.norden.org/baeredygtig_udvikling/sk. A number of NGOs have shown an interest in taking part in the implementation and follow-up of the strategy's goals and initiatives.

NGOs may be given a broader role in connection with the implementation of the strategy. A number of national, regional and international NGOs active in the Nordic countries and adjacent areas are already making significant efforts to promote sustainable development in a number of contexts, and should therefore be given the chance to take part in initiatives forming part of the strategy. This applies to environmental NGOs, professional organisations, and other stakeholder organisations. NGOs should therefore be mobilised wherever possible to take part in strategy implementation at local, national and international level.

NGOs active in all the Nordic countries and adjacent areas will accordingly be invited to take part in the work of implementing the strategy. It is primarily the task of the various sectors to establish such a dialogue and to cooperate with NGOs in implementing the strategy.

Adoption

The present strategy will be submitted to the Prime Ministers and political leaders of the autonomous areas. It will also be submitted to the Nordic Council.

The strategy will enter into force on 1 January 2005.

Appendix 1- Abbreviations

ACIA	Arctic Climate Impact Assessment
AEPS	Arctic Environmental Protection Strategy (now Arctic Council)
AHDR	Arctic Human Development Report
AMAP	Arctic Monitoring and Assessment Programme
ASCOBANS	Agreement on the Conservation of Small Cetaceans in the Baltic and North Seas
BAFICO	Baltic Fisheries Commission
BASREC	Baltic Sea Region Energy Co-operation
BEAC	Barents Euro-Arctic Council
BEARC	Barents Euro-Arctic Regional Council
BLA21F	Baltic Local Agenda 21 Forum
GNP	Gross national product
BSP	Baltic Sea Project
CAFE	Clean Air for Europe
CAFF	Conservation of Arctic Flora and Fauna
CBD	International Convention on Biodiversity
CBSS	Council of the Baltic Sea States
CHM	Clearing house mechanism
CLRTAP	Convention on Long-Range Transboundary Air Pollution (UN)
CSD	Commission on Sustainable Development (UN)
CSR	Corporate social responsibility
DDT	Dichloro-diphenyl-trichloroethane
ECB	European Chemical Bureau
ECE	Economic Commission for Europe
ECE-LRTAP	Economic Commission for Europe – Convention on Long-Range Transboundary Air Pollution
ECMT	European Conference of Ministers of Transport
EEA	European Environment Agency
EES	European economic cooperation agreement
EIA	Environmental impact assessment
EMAS	Eco-management and audit scheme
EU	European Union
FAO	Food and Agriculture Organisation (UN)
FLEGT	Forest Law Enforcement Governance and Trade
GAP	Good agricultural practice
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GHS	Globally harmonised system

GMO	Genetically modified organisms
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (UN)
GRID	Global Resource Information Database (UN)
GRIP	Norwegian foundation for sustainable production and consumption
HACCP	Hazard analysis and critical control point
HELCOM	Helsinki Commission
HFC	Hydrofluorocarbon
IBSFC	International Baltic Sea Fishery Commission
ICAO	International Civil Aviation Organisation
ICZM	Integrated Coastal Zone Management
ICLEI	International Council for Local Environmental Initiatives
IEA	International Energy Agency
IFF	Intergovernmental Forum on Forests
IGO	Intergovernmental organisation
IMO	International Maritime Organization
IPF	Intergovernmental Panel on Forests
IPP	Integrated product policy
IPCC	The Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
ITQ	Individual transferable quota
IUCN	World Conservation Union
IUU	Illegal, unreported and unregulated (fishing)
IWC	International Whaling Commission
JI	Joint implementation
JREC	The Johannesburg Renewable Energy Coalition
KIMO	Kommunernas Internationella miljöorganisation (International environmental association of local government authorities)
LA21	Local Agenda 21
LRTAP	Long-range transboundary pollutants
MARPOL	International Convention for the Prevention of Pollution from Ships
MCPFE	Ministerial Conference on the Protection of Forests in Europe
MR-M	Nordic Council of Ministers – Environment Ministers
MR-Sam	Nordic Council of Ministers – Cooperation Ministers
Mt	Million tonnes
MUVIN	Miljöundervisning i Norden (Environmental Education in the Nordic Region)
NAFO	Northwest Atlantic Fisheries Organization

NAMMCO	The North Atlantic Marine Mammal Commission
NASCO	North Atlantic Salmon Conservation Organization
ND	Northern Dimension
NEAFC	North-East Atlantic Fisheries Commission
NEFCO	Nordic Environment Finance Corporation
NGB	Nordisk Genbank (Nordic Gene Bank)
NGH	Nordisk Genbank Husdyr (Nordic Gene Bank, Farm Animals)
NGO	Non-governmental organisation
NIB	Nordiska Investeringsbanken (Nordic Investment Bank)
NJF	Nordiska Lantbruksforskarens Förening (Nordic Association of Agricultural Researchers)
NKJ	Nordisk Kontaktorgan för Lantbruksforskning (Nordic Joint Committee for Agricultural Research)
NOVA	Nordic Forestry, Veterinary and Agricultural University
NOVABA	Samarbete mellan Nordiska och Baltiska Lantbruksuniversitetet (Programme of cooperation between the Nordic and Baltic Universities)
NPP	Northern Periphery Program
NSFP	Nordic forestry seed and plant advisory association
NUTEK	Swedish Business Development Agency
OECD	Organisation for Economic Co-operation and Development
OIE	Office International des Epizooties (WTO)
OSPAR	Oslo-Paris Convention
PAH	Polynuclear aromatic hydrocarbons
PCB	Polychloride biphenyls
PFC	Perfluorocarbon
PIC	Prior informed consent
POMS	Produktorienteret Miljöstrategi (Product-oriented environmental strategy)
POP	Persistent organic pollutants
PPP	Polluter-pays principle
PROFORSAFE	Processing for food safety
PSSA	Particularly sensitive sea area
QSAR	Quantitative structure activity relationships
REACH	Registration, Evaluation and Authorisation of Chemicals
RMS	Revised management system
SAFEFOODERA	Research programme on food safety
SEA	Strategic Environmental Assessment
SF6	Sulphur hexafluoride
SNS	Samnordisk Skogsforskning (Nordic Forest Research Co-operation Committee)
SPS	WTO Agreement on the Application of Sanitary and Phytosanitary Measures

TERM	Transport and Environment Reporting Mechanism
TBT	Tributyl tin
TEN-T	Trans-European Network for Transport
TGA	Testing Ground Agreement
TGF	Testing Ground Facility
THE PEP	Transport Health and Environment Pan-European Programme
TPES	Total Primary Energy Supply
UBC	Union of the Baltic Cities
UNCLOS	United Nations Convention on the Law of the Sea
EU/ECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Program
UNFCCC	United Nations Framework Convention on Climate Change
UNGASS	United Nations General Assembly Special Session
UPOV	International Union for the Protection of New Varieties of Plants
VASAB2010	Vision & Strategies around the Baltic 2010
WEHAB	Water, Energy, Health, Agriculture and Biodiversity
WFS	World Food Summit
WHO	World Health Organisation
WSSD	World Summit for Sustainable Development
WTO	World Trade Organisation

Appendix 2 - Comments on the strategy from NGOs

The comments have been posted on the Nordic Council of Ministers' website at www.norden.org/baeredygtig_udvikling

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Appendix 3 - Members of the negotiation group

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Thomas Børner, Head of Department

Finland:

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Iceland:

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Sweden:

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Christer Eriksson, Senior Adviser, Ministry of Health and Social Affairs
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Greenland:

Jørgen S. Søndergaard, Senior Advisor, Greenland Home Rule

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Åland:

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