



DENMARK'S NATIONAL STRATEGY FOR SUSTAINABLE DEVELOPMENT

A SHARED FUTURE

- balanced development

THE DANISH GOVERNMENT

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A shared future — balanced development

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Miljøbutikken
Information and book
Læderstræde 1-3
DK-1201 Copenhagen K
Tel. +45 33 95 40 00
Fax + 45 33 92 76 90
E-mail: butik@mem.dk

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Any inquiries concerning this publication may
be directed to:

Danish Environmental Protection Agency
Development and Data Division
Strandgade 29
DK-1401 Copenhagen K
Tel. + 45 32 66 01 00
Fax. 32 66 04 79
E-mail: mst@mst.dk



Foreword

”A shared future – balanced development” is Denmark’s national strategy for sustainable development.

Denmark must be among the best countries in the world in which to work, reside and live. More welfare and expansion of the welfare society must provide all people with good opportunities for development. Denmark must be among the best at protecting the environment. Future generations should have at least as favourable opportunities for living in clean and healthy surroundings as we have at present.

Denmark is a society that meets economic, environmental and social challenges. We must ensure sound economic growth, socially balanced development and protection of nature and the environment and human health.

The Danish strategy for sustainable development is founded on eight objectives and principles:

1. The welfare society must be developed and economic growth decoupled from environmental impacts
2. There must be a safe and healthy environment for everyone, and we must maintain a high level of protection
3. We must secure a high degree of bio-diversity and protect ecosystems
4. Resources must be used more efficiently
5. We must take action at an international level
6. Environmental concerns must be taken into account in all sectors
7. The market must support sustainable development
8. Sustainable development is a shared responsibility, and we must measure progress

Sustainable development presents national and global challenges. The strategy will form part of Denmark’s contribution to the World Summit on Sustainable

Development to be held in South Africa in August-September 2002. The summit will take place during the Danish EU Presidency, presenting us with a unique opportunity to place sustainable development at the top of the international agenda. Denmark will work for the creation of a new global deal on sustainable development. This deal should combine the goals of better access to markets and increased development assistance globally to developing countries with the requirements of good governance and an improved environment. Elements of such a deal could be that industrialised countries undertake to decouple economic growth from environmental impact and support developing countries in realising growth and reducing poverty.

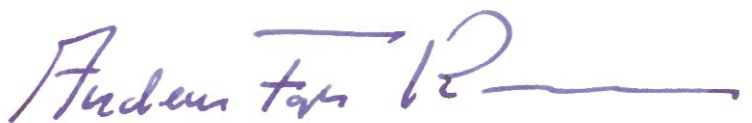
Sustainable development is a long-term process. Therefore the strategy has a 20-year time frame in which objectives and visions are presented for each area of activity.

Challenges, objectives and initiatives for the coming years are presented in this strategy. Our decisions must be based on the best possible knowledge base, so that objectives are reached in the most cost-effective way. Furthermore, we must use indicators to help us to follow continuously progress made in achieving sustainable development in Denmark.

The visions and objectives of the strategy will be followed up by concrete initiatives within the sectors and areas concerned.

We all have a shared responsibility to ensure sustainable development. It is important that everyone – the Danish Government, enterprises, local and regional authorities, voluntary organisations and the public – participate in the implementation of the strategy.

Together we must create a shared future – balanced development.



*Anders Fogh Rasmussen,
Prime Minister of Denmark*

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1

Visions and objectives



This is Denmark's National Strategy for Sustainable Development. The Strategy starts with a description of how Denmark contributes to promoting global and national sustainable development that focuses on the interests of future generations and on nature protection.

The World Commission on Environment and Development (better known as the Brundtland Commission) defined sustainable development as: *“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”*

It further reads: *“In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.”*

The definition set out in the Brundtland Report (Our Common Future) sums up a number of thoughts and visions relevant to us all. The definition still underpins Denmark's view of sustainable development.

Sustainable development incorporates three interdependent and mutually reinforcing dimensions:

- The economic dimension (economic resources, development and growth).
- The environmental dimension (natural resources, protecting and exploiting nature sustainably, and preventing and combating pollution).
- The social dimension (social resources, solidarity, and combating poverty).

Sustainable development is an ongoing process that involves improving the integration of environmental, economic and social considerations.

Denmark is to be a society where economic progress can go hand in hand with an improved

environment. Necessary incentives and opportunities must exist that enable individuals to contribute with their own initiatives. The population should enjoy a good framework for employment, living conditions, social conditions, and quality of life. Sustainable development implies that we must face up to economic, environmental and social challenges simultaneously. Future generations should have at least as favourable opportunities for a good life as we have at present. We must ensure sound economic development which is socially balanced. This development must provide for greater individual freedom of action, display respect for the limits of nature and the environment, and have no negative impact on people's health.

Sustainable development cannot be achieved in one country alone. Global sustainable development envisions a world of economic progress, increased welfare, and better environmental protection. This development is for the benefit of all, including the less powerful and less developed parts of the world. Therefore, sustainable development also presupposes openness, democracy and respect for human rights. As an affluent country, Denmark has a special responsibility to assume a leadership role in developing a global, sustainable community. Hence, Denmark will continue to be actively involved in international cooperation on the environment and development.

Sustainable development requires global cooperation and international solutions. At the same time, Denmark must not relax its efforts on the home front. In Denmark's National Strategy for Sustainable Development, the Government presents what Denmark will do to ensure a society in balance. The strategy represents Denmark's response to the challenge presented at the 1992 Rio Conference and contributes to meeting international obligations towards the promotion of sustainable development. Sustainable development is an overall objective for European cooperation in the EU, cf. Article 2 in the Treaty on European Union, stipulat-

ing that, the objective of the Union is to *promote economic and social progress and a high level of employment and to achieve balanced and sustainable development.*

The Danish vision of sustainable development is based on eight objectives and principles:

- 1 The welfare society must be developed and economic growth must be decoupled from environmental impacts.
- 2 There must be a safe and healthy environment for everyone, and we must maintain a high level of protection.
- 3 We must secure a high degree of biodiversity and protect ecosystems.
- 4 Resources must be used more efficiently.
- 5 We must take action at an international level.
- 6 Environmental considerations must be taken into account in all sectors.
- 7 The market must support sustainable development.
- 8 Sustainable development is a shared responsibility, and we must measure progress.

These eight objectives and principles reflect the areas where there is a special need for Denmark to work at achieving sustainable development.

1. The welfare society must be developed and economic growth must be decoupled from environmental impacts.

Welfare must be protected, strengthened and extended. On the other hand, the welfare society is under pressure. Over the next 30 years, we will see a rapid increase in the number of elderly, while economically active persons will account for a steadily diminishing proportion of the population. If we maintain the government budget surplus, we can repay a large amount of our national debt in the years ahead. The money we are currently pay-

ing as interest can be redirected towards meeting the rising costs of pensions, home-help schemes, old-age care, hospitals, etc. In May 2002 the Danish Government submitted a broad strategy for growth, "Determined Growth". "Determined Growth" aims to create more jobs and greater productivity. Reforms and structural improvements will be initiated by the Government in order to create a good framework for growth. Growth should, though, also be environmentally sustainable.

The development of the welfare society demands that greater focus is placed on individual opportunity and free initiative. By strengthening the impetus for new initiatives and the desire for success, Denmark can achieve the necessary economic foundation for a welfare society. Having a job must be regarded as worthwhile, so that everyone capable of working finds employment. This will be to the benefit of all. It will also provide more resources for supporting disadvantaged groups who are unable to support themselves. Change and development must go hand in hand with a feeling of security and social stability.

All Danes must be guaranteed a dignified and safe old age irrespective of whether they have had an opportunity to save. The state retirement pension will continue to play a pivotal role in the pensions system of tomorrow, which will be financed by the interest expenses saved and by labour market reforms which increase the workforce. In addition, Danish labour market pensions will expand as the ratio of the elderly to the population grows. Labour market pensions and private pensions will thus supplement the state retirement pension.

We must create a more inclusive labour market where more people join the workforce and where there is room for those who do not fully meet the high demands for efficiency. Conditions for members of the workforce aged 50 or over need to be improved to reduce the number of people claiming early-retirement pensions, disability pensions, etc. Flexible working arrangements for the disabled (flex jobs) should also be facilitated.

We must become better at using the workforce resource represented by immigrants, at ensuring that

fewer claimants require cash benefits, and at preventing sickness absenteeism.

In order to ensure that as many people of working age as possible are given the opportunity of being an active member of the workforce, central and local government must provide daycare for children and care for the elderly.

Long-term sustainable development is only possible in a society that solves fundamental social problems in relation to disadvantaged groups. The Danish Government's reform programme "The Common Responsibility" aims to strengthen initiatives for helping disadvantaged groups in society. The programme consists of both an expansion of public initiatives and increased inclusion of the voluntary sector in work in the social field. The objective is to improve the quality of life for disadvantaged groups. At the same time, preventative measures in situations which can typically end in social exclusion must be strengthened. By doing so, we counteract the tendency for social problems to become chronic and a burden on society in the future. This will contribute to strengthening social sustainable development.

The welfare society must continue to develop. In future, the common responsibility for addressing a range of welfare tasks must be combined with individual freedom to choose between different solutions. People should have the opportunity of choosing between various private and public solutions within a number of service areas.

An active policy must be pursued to promote sustainable development, and active environment policy must be pursued to ensure that future generations can live in a clean environment. There is international agreement on the fact that decoupling is the overall challenge in relation to ensuring sustainable development. This is stated in the EU's Sixth Environment Action Programme, which sets the framework for initiatives in the next decade in the EU. The European Council in Gothenburg underlined the importance of decoupling economic growth from use of resources. As a result of the work of the OECD on sustainable development, which was discussed at the OECD Ministerial Council Meeting in May 2001, decoupling was

highlighted once more as one of the main challenges in relation to sustainable development.

Initiatives need to be taken in environmental policy in order to meet these ambitious environmental goals, even though much has already been achieved. In a number of crucial areas, it has been possible to decouple the connection between economic growth and increased pollution. This applies to the energy area, for example. However, other areas of significance to our health, environment and nature still present sweeping challenges. It is crucial that we ensure "the most cost-effective approach for society when achieving environmental objectives", and that the effort is made where the greatest environmental benefit can be achieved - that the most efficient means are applied.

Some impacts on our health, environment, nature or resource utilisation are so critical as to demand new solutions. For example, the impact on the climate system is crucial because changes in the balance of the system are expected to have serious implications for life on Earth.

Sustainable development implies a balance between generations. Future generations should be offered at least as favourable opportunities for a good life as we have at present. Therefore, we must safeguard our economic, social and environmental resources. We must avoid critical impacts on the environment, nature and health, and we must protect and preserve special and unique natural values, which cannot be restored if they disappear.

These challenges must be met through a range of measures, according to which is the most efficient. Sustainable development may be promoted through an increased use of market-oriented measures, for example taxes, subsidies and tradeable quotas, as well as through information and dialogue with citizens and enterprises. Research into causal relationships and into new environmental and societal problems influences society's ability to take the proper, preventive decisions at an early point, and thereby to achieve sustainable development.

Indicators can tell us whether society is heading for sustainable development. These may include

indicators measuring impacts on critical nature and environment factors and indicators showing whether economic growth is being decoupled from pressures on the environment and nature. The “Genuine Savings” concept is an economic indicator for developments in the total wealth of society. This concept is used to determine the value of economic, social and environmental resources. The “Genuine Savings” concept is being developed and must be supplemented by analyses of critical impacts on health, the environment and nature. Combined with the other indicators, “Genuine Savings” can provide a picture of whether or not developments can be described as sustainable. The first analysis from 1998 seems to indicate that “Genuine Savings” are positive in Denmark.

2. There must be a safe and healthy environment for everyone, and we must maintain a high level of protection.

The environmental quality in Denmark must not be harmful to humans, animals and plant life. Steps must be taken to ensure that soil, air and water are sufficiently clean and free from harmful compounds and micro-organisms so as not to impact the health of humans, plants and animals. The Danish Government’s objective is that Denmark must be one of the most efficient OECD countries at reducing pollution.

Climate changes are among the greatest global challenges of this century. Therefore, we should stabilise the concentration of greenhouse gases at a level that prevents harmful, man-made effects on the climate system. To live up to the Kyoto Protocol, Denmark has undertaken to reduce total emissions of greenhouse gases by 21 per cent from the 1990 level in the years 2008 to 2012.

The manufacture, use and disposal of products and goods must not be harmful to the environment and human health. The Government will formulate a comprehensive strategy, focusing on the measures that can be taken in relation to the health impact of environmental factors. Consumption of hazardous chemicals must be reduced to a minimum. Industry must assume responsibility for ex-

amining the hazards of chemicals and ensure that they can be used without jeopardising health and the environment. We are taking active steps against hazardous chemicals, and in 2020 it will not be allowed to market or use any products containing chemicals that entail particularly undesirable effects on health or the environment

Maintenance of a high level of protection for humans and the environment is important. The European environment policy is based upon the precautionary principle, the principle on preventative measures, the principle that interventions with regard to environmental damage should take place primarily at the source, and the polluter pays principle.

The precautionary principle will be instrumental in securing this protection and is a principle recognised by treaty in the EU as well as Danish policy. We must take action at the smallest hint of any unacceptable risk or hazard.

3. We must secure a high degree of biodiversity and protect ecosystems

Nature and the ecosystems are vital to all life on Earth. The development potential of both present and future generations depends on viable and varied natural resources. This is why we must enhance the quality of nature and increase the forest area.

International projections show that global economic development over the next 20 years will endanger the world’s biodiversity. This means that a range of ecosystem functions such as the water cycle and decomposition of waste products are also threatened. That is why we must reduce physical impacts on nature and in particular the discharge to nature of nutrients and environmentally harmful compounds. In the interests of our descendants, industries that are detrimental to nature must adjust their use of natural resources and contribute to the development of technological solutions so that environmental impacts can be curtailed.

Certain values inherent in cultural and natural landscapes, special landscape types and the diversity of species and genetic pools are irreplaceable. We must prioritise and target the initiatives to protect biodiversity by enhancing the quality of existing natural areas, increasing the size of natural areas and developing better cohesion between natural areas. We must ensure that the population has easy access to outdoor recreation and enjoyment of nature in forests and in the open country. Finally, we must - also out of consideration for tourism - safeguard our historic environment, including historic traces in the landscape and the historic heritage that lives on in rural districts and coastal regions.

4. Resources must be used more efficiently

Over the coming years, we can expect a growing global population and increasing economic wealth - also in developing countries. We must therefore use the available natural resources in a sustainable way. Danish enterprises must produce their products efficiently so that still fewer resources are used per unit produced. This will contribute to ensuring the competitiveness of Danish enterprises in the global market, where scarcity of resources must be anticipated.

We must adjust our patterns of consumption and methods of production so that the production and consumption of goods and services are less detrimental to the environment and offer improved resource utilisation. During the years ahead, resources must be used more efficiently to limit waste volumes and cut down the spread of pollutants. Resource efficiency can contribute to improving competitiveness, for example due to cost savings.

In Gothenburg, the European Council underlined that clear and stable objectives for sustainable development will create significant economic opportunities. This bears the potential of starting a new wave of technological innovation and investment, thus creating growth and employment. The European Council encouraged the commercial sector to participate in the development and to use more

new, environmentally friendly technology, for example in the energy and transport sectors.

The UN Secretary General has pointed to changes in production and consumption patterns as a significant challenge towards sustainable development. In connection with this, decoupling and targets for resource efficiency improvement in the order of a factor 4 and a factor 10 have been identified. As part of the Danish Government's efforts to achieve sustainable development and sustainable production and consumption patterns, a long-term target has been set to limit resource consumption to about 25 per cent of the current level. There is a need for further specification of initiatives concerning the use of resources in the future. This should be seen against the backdrop of international discussions on the formulation of targets for resource efficiency improvement in the order of a factor of 4 over the next two or three decades and a factor of 10 in the longer term. This process was initiated at the UN General Assembly Special Session (UNGASS), held five years after the Rio Conference. Factor 4 means that resource efficiency is increased by a factor of four compared with the present level - i.e. a 100 per cent increase in utility value combined with a 50 per cent reduction in resource consumption. The factor 10 concept implies a 50 per cent cut in global material flows and an equal distribution of resource consumption among the global population. This means that the industrialised countries will have to achieve resource efficiency improvements in the order of factor 10.

Technological breakthroughs and innovation are necessary. We must continue to develop new technology, new materials and new solutions to redirect society towards sustainable development. The wider use of existing technologies and new technological breakthroughs present an opportunity to develop more sustainable methods of production. By changing the technological bases of production we can in the long-term significantly reduce the dependence of society on certain resources. New sources of energy, for instance fuel cells, will be capable of reducing CO₂ emissions significantly. The use of new types of materials can lower resource consumption and open up more recycling possibilities. Information technology and biotechnology

may also pave the way for new environmentally friendly production methods and products. Therefore, it is important to provide the right framework and a strong platform for the development and dissemination of new environmental technologies and for the removal of any barriers to the market access of such technologies.

5. We must take action at an international level

Denmark will work actively to promote global sustainable development. We have a share in the responsibility for improving the world around us. In the areas where we possess special knowledge or that are high on the political agenda, Denmark may need to take the lead.

Denmark will contribute to creating a world of peace and stability building on democracy and respect for human rights. Denmark must sustain its efforts to combat poverty and achieve growth and social development in the poor countries of the world. Economic and social development in the poor regions of the world must contribute to global sustainable use of resources and conservation of nature and the environment. Denmark's development assistance currently accounts for significantly more than the UN target of 0.7 per cent of gross national income, and Denmark is one of the countries in the world that contributes most in relative terms. Denmark will give priority to multilateral and bilateral assistance to developing countries and Central and Eastern European countries in partnership with governments, civil societies and business communities in these countries, so that we achieve the most efficient measures. This long-standing contribution has been instrumental in strengthening Denmark's international credibility and goodwill.

In connection with international activities, the use of the so-called flexible mechanisms, such as "joint implementation", allow for CO₂ reductions to be achieved in the most efficient way in relation to the measures employed.

Many of the environmental problems we are facing are global or regional. Thus, they can only be

solved through international cooperation. Denmark is working actively to improve European and international environmental protection through EU cooperation. Denmark will continue contributing to the ongoing follow-up and implementation of the EU's Sixth Environment Action Programme. Denmark will help integrate environmental considerations into EU sector policies, and attaches importance to ensuring that the EU Heads of State and Government follow these endeavours. Denmark will hold the EU presidency in the second half of 2002. This will afford a special opportunity to set high-priority objectives on the agenda. Not only in an EU context, but also in the broader contexts where the EU plays a role. Denmark will work for an active follow-up to the OECD's sustainable development strategy along the lines of the OECD Ministerial Council Meeting on sustainable development held under Danish chairmanship in May 2001.

The World Summit on Sustainable Development will be held in South Africa in August-September, 2002. Denmark, holding the presidency of the EU, will work for the creation of a new global deal on sustainable development and global partnership. Elements of such a deal could be that the industrialised countries undertake to decouple economic growth from environmental impacts and support developing countries in realising growth and reducing poverty. Elements could be improved market access, debt relief, investments and technology transfer. At the same time, developing countries must live up to their international commitments and integrate environmental considerations into their production and administration.

6. Environmental considerations must be taken into account in all sectors

The integration of environmental considerations into policies and decision-making processes is a prerequisite for achieving sustainable development where economic growth is decoupled from increasing environmental impacts and growing resource consumption. This makes all sectors and authorities responsible for integrating considerations for the environment, health and sustainable

development into all decision-making processes within their respective areas. This applies at central level, as well as for enterprises and citizens at local level.

An important model is the work within the EU to integrate environmental considerations into sectoral development, the so-called “Cardiff Process”. The Cardiff Process is one of the most important new tools in the EU’s sustainable development policy. This process means that all sectors are responsible for developing strategies and indicators for the integration of environmental considerations within their policy areas, with a view to achieving sustainable development. The Cardiff Process was initiated by the European Council as a follow-up to Article 6 of the Treaty establishing the European Community where it is laid down that requirements for the protection of the environment must be integrated into the definition and implementation of Community policy and activities with a view to promoting sustainable development. The Council has so far asked nine bodies to develop strategies for integration on the background of environmental considerations.

In Denmark we have worked at integrating environmental considerations in various ways and at different levels. Bills and other Government proposals presented to the Danish Parliament are required to undergo a strategic environmental impact assessment to ensure that environmental consequences form part of the decision-making basis. Similarly, the environmental impacts of large-scale, central-government engineering works have to be assessed. For many years, environmental action plans have been drawn up in a variety of policy areas.

Today, only 10 to 20 per cent of Danish companies regard environmental aspects as a competitive parameter. There is a vision that the vast majority of Danish companies will turn the way they undertake their social responsibility into a strategic advantage in the market. This goal will mainly be accomplished by ensuring that companies integrate environmental considerations into their decision-making processes.

However, there is still a need for strengthening the comprehensive and cross-sectoral approach. The integration of environmental considerations into sectors, policies and decisions will remain a crucial element in Denmark’s commitment to sustainable development.

7. The market must support sustainable development

Sustainable development and economic progress are not mutually incompatible. Businesses engaged in significant environmental initiatives generally do well in competition. Forward-looking commitment to the environment and sustainable development may stimulate competitiveness and the transition to the knowledge economy. The development and dissemination of sustainable technologies are important instruments in preparing enterprises for the demands of the markets of the future.

It should pay to show environmental concern. One of the ways of achieving this is to ensure that those who produce, supply, dispose of or consume products and services pay the environmental costs. Prices that reflect the actual costs to society encourage consumers and producers to make sustainable choices. The polluter-pays principle must be followed. Market-oriented means such as environmental taxes, subsidies and tradeable quotas can be used for this purpose. The Government wishes to explore how the use of market-oriented instruments can help solve environmental problems in the most cost-effective manner for society. The Government will therefore examine whether changes in environmental taxes, amongst other things, allow for the possibility of achieving a more cost-effective solution for society in terms of environmental improvements.

Denmark will work towards obtaining international agreement on environmental taxes. As a first step in this process, common minimum tax rates should be set for environmental taxes in the EU. The choice between different measures depends on the challenge to be addressed. It will often be necessary to choose a combination of measures that together generate the right changes in

behaviour. The OECD report on policies that promote sustainable development contains specifically a number of recommendations to OECD countries with a view to encouraging the market to support sustainable development.

Therefore, the Danish Government will prepare a report on green market economy, which is to analyse the practical possibilities of increased use of market-oriented measures to promote a better environment.

Achieving a market that supports sustainable development calls for consumers and, therefore, the market to make more demands on environmental initiatives by enterprises. Reliable information about how products affect the environment is important in order to increase supply and demand for environmentally friendly products. Incentives and framework conditions that make it attractive for both manufacturers and consumers to supply and demand sustainable products are to be created. This will help ensure that market forces succeed in achieving environmental objectives in an efficient manner. The Government also has the objective that Danish enterprises and investors are able to document easily their environmental activities and that consumers have clear access to information on how products are produced.

The public sector itself is an important consumer and therefore has the potential to influence the market.

8. Sustainable development is a shared responsibility, and we must measure progress.

Sustainable development is only achievable if all parties make a contribution and assume responsibility for integrating and promoting considerations for the environment and sustainable development in their decisions. Consumers and producers, employees, society's institutions, children and young people are all key players in the achievement of sustainable development. They must be involved and share in the responsibility. Information, education and teaching can disseminate knowledge about sustainable development and thereby change attitudes and behaviour. Public participa-

tion in decisions on and the implementation of the sustainable development strategy is essential.

Therefore it is important that there is broad public support and confidence in the policy for sustainable development pursued. The Aarhus Convention, specifying principles about the environmental rights of citizens, has now been introduced in Denmark.

Research and development must ensure that we always have a good knowledge base. At the EU summit in Barcelona in the spring of 2002 it was decided that the total expenditure on research and development in the EU should be increased to a level of about three per cent of the gross national product (GDP) by 2010. This includes research into fundamental causal relationships and into how activities in society have a bearing on people and nature. This will enable us to make the right decisions, prioritise activities and choose the right measures. Environmental economics, environmental behaviour, forecasts and scenarios for the anticipated development are core areas. Environment policy must be knowledge-based.

The Government has established an Environmental Assessment Institute. Through research at a high international level, the Institute must ensure that environment targets are reached in the most cost-effective way. The Institute must achieve a general view of the current and long-term environment situation, both in Denmark and globally. In relation to this, the institute must call upon and utilise all the knowledge and competencies that have been built up by other national and international research institutions. Furthermore, this knowledge and insight must be disseminated to the public and to political decision makers.

The Government will continuously monitor and report on the progress made in implementing Denmark's national sustainable development strategy. In association with the strategy there is a set of indicators that describe the objectives and activities of the strategy. The indicators will be updated each year and made accessible to the public via a website on the Internet about sustainable development. The indicators will be updated every year making it possible to keep abreast of progress in meeting the objectives.



Photo: Preben Kirkehoj

2 Results and challenges

The Agenda 21 document from the Rio Conference invites governments to formulate national strategies for sustainable development. This national strategy has been drawn up in response to that invitation and will be an integral part of Denmark's contribution to the UN World Summit on Sustainable Development in Johannesburg.

This Denmark's Strategy for Sustainable Development should be seen in the context of the international strategies for sustainable development in which Denmark participates. The EU is discussing its Sixth Environment Action Programme, which sets the framework for EU environment policy and for the integration of environmental considerations into all policy areas. The Sixth Environment Action Programme points to five main areas of activity for the next decade: climate; nature and biodiversity; environment, health and quality of life; sustainable exploitation and management of natural resources and waste; and international activities. At the European Council in Gothenburg in June 2001, the European Council adopted a long-term strategy for sustainable development, setting up specific objectives for health and the environment. The strategy advocates that environmental sustainable development be discussed at the EU spring summits under the Lisbon process on a par with socially and economically sustainable development.

Under the auspices of the OECD, Denmark has worked actively for sustainable development and the integration of environmental considerations. In May 2001, Denmark chaired the OECD Ministerial Council Meeting on sustainable development, where ministers for the environment, economy and finance all participated. At the meeting, the OECD countries adopted a strategy for sustainable development, which sets up a framework for integrating economic, social and environmental objectives and for decoupling economic development from environmental pressure. On Denmark's initiative, the outcome of the meeting was that the OECD will develop sustainable development indicators to measure progress. These indicators will be incorporated into the OECD's evaluation of individual member countries. Denmark will strive to ensure that member countries follow up the OECD's work on sustainable development.

During the Danish presidency, the Nordic Council of Ministers completed a cross-sectoral strategy for sustainable development, targeted at integrating environmental considerations into sectors. This came into effect on 1 January 2001, and in the coming years objectives and initiatives will be continuously followed up. The countries and the individual sectors within the Nordic Council of Ministers are responsible for the integration of environmental considerations within their areas. At the

Nordic Council session in autumn 2002 the Nordic Council of Ministers will give a status report on the implementation of the strategy in each Nordic country.

Results

In the last two decades Denmark has successfully achieved a clear stabilisation in economic development. Denmark has managed to achieve higher levels of employment and income, mainly through reforms of the labour market, the tax system and educational programmes. There are surpluses on the government budgets and the balance of payments, whilst inflation is low and stable. The big problems Denmark had with the balance of payments in the early 1980s have all been solved. This has been achieved without the widening of social inequality. Although much still remains to be done, we have a strong basis for preserving and improving a welfare society of a high standard and with a higher degree of individual freedom, which is to the benefit of all.

Denmark has followed up on the recommendations from the 1992 Rio Conference. Denmark must continue its international initiatives for sustainable development. Total assistance for sustainable development, including the development assistance framework and Danish environmental assistance, accounts for well above the UN target of 0.7 per cent of gross national income. Denmark has been, and will remain, an active co-player in global negotiations on ensuring development and trade, global conventions and EU rules in the environmental area that have a high level of protection. Denmark is the first country in the western world to ratify and implement the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters.

For many years, Denmark has emphasised the importance of integrating environmental considerations into other policy areas and of combating and preventing pollution and its impact on nature. Various targeted action plans have strengthened the concrete initiatives to decouple economic growth from adverse effects on nature and the environment.

While the economy has showed a strong upswing, Denmark also managed to reduce emissions of various pollutants - especially SO₂, NO_x, but also CO₂ - and total energy consumption has stabilised. The objective of limiting the discharge of nutrients to the aquatic environment from municipal wastewater treatment plants and industry has been met, and significant progress has also been recorded in the agricultural sector. More than 200 of the most harmful pesticide products have been removed from the market. Over the past ten years, more than 8,000 ha of lakes, streams, meadows and moors have been restored, and about 18,000 ha have been planted with trees.

Challenges

Growing international trade and the increased pressure on the Earth's natural resources have increased the interdependence among countries. Globalisation of economies means that many problems, including environmental ones, can only be solved through international cooperation. Projections on the state of the global environment indicate that growth in the world economy, global population growth and significantly higher consumption levels will intensify the pressure on natural resources. According to international forecasts, the world population is expected to grow to some 7.5 billion over the next twenty years, and per capita consumption is expected to increase by one third over the same period.

The new global market involves fiercer competition. Moreover, the enlarged European market opens up new business opportunities. Environmental aspects are becoming a competitive parameter, and Danish companies already enjoy a very strong position. New technology, information and communication technology, and the Internet will increasingly change the day-to-day lives of companies and people. This facilitates the exchange of knowledge, but also entails steadily higher expectations for openness and transparency in companies and the public sector and for transparency in the decision-making process.

The global knowledge economy is riding a new industrial wave where scientific and industrial breakthroughs in fields such as biotechnology, micro-electronics, energy technology, telecommunica-

tions and new materials will change the world. Several of these technologies can potentially contribute to decoupling economic development from environmental impacts and resource consumption. At the same time, technological advances may involve risks and uncertainty, for example in conjunction with the release of genetically modified organisms into the environment.

Denmark must take active steps to meet the challenges and ensure that growth in the economy and in living standards does not step up pollution and cause more damage to the natural environment. Within the past two decades, Denmark has managed to implement targeted initiatives that limit and reduce the environmental impact per unit produced. Denmark is responsible for ensuring that its reduction in environmental impacts does not result from transferring polluting production to other countries. Nevertheless, at the same time we must ensure that environmental improvements are achieved where they are most efficient.

One of the greatest challenges at global level is to meet the threat from climate change. Climate change will alter the basis of the natural environment and, in particular, threaten the already poor countries and small archipelagic states. The world's biodiversity is under pressure from various human activities. Poverty, hunger and scarcity of basic natural resources such as drinking water are the causes of conflicts, which give rise to severe refugee problems in some regions.

In Denmark one environmental challenge in the years ahead will be the large number of chemicals from products, emissions, discharges and waste, which disperse to the environment through many routes and can affect health, the environment and nature. Other challenges will be to decouple economic growth from the impact on the environment and human health in the areas where this has not yet been accomplished. The growing demand for transport contributes to global climate change and to local air pollution in cities despite vehicles' increased energy efficiency. Improved resource utilisation and reduced waste volumes are other challenges for the coming years. Danish nature is exploited intensively, both in rural areas and at sea. In spite of the measures taken, species and land-

scape types are still decreasing in number. The challenge lies in developing and introducing more environmentally friendly production methods that prevent any deterioration in biodiversity.



Bilofoto: Steen Ager

3

Contents of the strategy

Denmark's National Strategy for Sustainable Development describes the objectives and activities required to enable Denmark to contribute to sustainable development. Sustainable development affects all activities in society, and in the Strategy it has been necessary to focus on the most important key sectors and policy areas. The Strategy focuses on the work to integrate environmental considerations into seven selected sectors. The sectors are agriculture and fisheries (under the heading of "food production"), forestry, industry, trade and services, transport, energy, and urban and housing development.

The strategy also deals with important social challenges such as the threat from man-made climate changes, the correlation between the environment and health, more efficient resource consumption and the protection of biodiversity. The international initiatives, measures and knowledge base and public participation are important to all sectors and areas and are therefore necessary elements.

The strategy covers a period of twenty years. For each area of activity, Denmark presents its long-term objectives and benchmarks towards 2020. Development perspectives and challenges as well as objectives and activities in the years to come are described.

The strategy is a combined framework for Denmark's national initiatives for sustainable development. The visions and objectives of the strategy will be followed up by action plans, programmes and concrete initiatives within the sectors and areas concerned. In its present form, the strategy does not specify expenditure for the individual areas since this serves no purpose in a perspective of twenty years. A decision about expenditure in an area requires the preparation of a concrete decision-making basis to assess the relationship between the benefits and costs of a given initiative. Measures to ensure sustainable development in the form of specific initiatives, action plans, etc. will be included in the ongoing macroeconomic prioritisation.

Indicators for sustainable development enable us to monitor how far we have come in meeting the objectives. The Government will develop indicators that can follow Denmark's progress in fulfilling essential objectives and activities in the strategy. The strategy will be adjusted as required.

CROSS-CUTTING ACTIVITIES



Polfoto: Jens Dresling



4

Climate change

In the long term, the atmospheric content of greenhouse gases must be stabilised at a level sufficiently low to prevent anthropogenic hazardous impacts on the climate. Unavoidable climate change must take place at a pace that allows ecosystems to adapt and ensures that food production is not threatened. At the same time, economic development must be maintained on a sustainable basis.

In an international context, Denmark has a high emission of CO₂ per capita, which gives us a special responsibility. Via the agreement to reduce emissions of six greenhouse gases by 21 per cent between 1990 and 2008-12, Denmark will make a serious contribution to the Kyoto Protocol and thus to the prevention of global climate change. Because of the scale of the problem, there is a great need to further reduce emissions after 2012. The UN's Intergovernmental Panel on Climate Change has indicated that a stabilisation of climate-gas concentrations at levels which avoid anthropogenic climate changes may require emissions to be reduced by 50–70 per cent.

On the background of the IPCC's recommendations, the objective in the EU is that the concentration of greenhouse gases in the atmosphere be stabilised at a level equal to just under double the concentrations before industrialisation. This implies a long-term target whereby, before the turn of the next century, discharges by industrial countries are to be reduced by 10-15 per cent of discharges today. Denmark, along with the other countries participating in the Climate Convention, is expected to undertake further, significant emission reduction commitments in the budget periods after 2012. An indicative aim of a halving of CO₂ emissions in Denmark within one generation could be the result of continued stricter reduction targets in coming budgetary periods.

The latest analysis from the UN Panel on Climate Change highlights climate problems as a major global environment problem, and as maybe one of the greatest global challenges this century. The CO₂ concentration in the atmosphere today is about 30 per cent higher than it was before industrialisation. Within the next few decades, levels are expected to double compared to pre-industrial levels. Mean global temperature has risen by 0,6°C in the same period, accompanied by changes in snow and ice cover, heavy precipitation and other climate events.

In its latest report, the Intergovernmental Panel on Climate Change concluded that we may expect further increases in global temperatures of between 1,4°C and 5,8°C during the next century. Climate change, a rise in sea levels of between 9 and 88 centimetres, changes in the level of precipitation and, probably, more extreme weather conditions, droughts and floods will be the consequences. The greatest negative impacts of climate change are expected in developing countries, not least in the light of threatening floods and reduced scope for food production. In Denmark, climate change may result in warmer winters, increased precipitation and more storms in the long term. This may impact biodiversity and sectors such as agriculture, forestry and fisheries. Low-level areas may be flooded as a result of the rise in sea levels.

Since 1990, Denmark's national objective to reduce CO₂ emissions by 20 per cent by 2005 compared to 1988 has formed the basis of Danish policy. The Energy 21 action plan from 1996 strengthened Denmark's position as a frontrunner in the energy field. In other sectors, such as transportation, agriculture, forestry and waste, the strategies and action plans adopted also play a key role in limiting greenhouse gas emissions.

Under the Kyoto Protocol of 1997, the participants agreed that total greenhouse gas emissions from the developed countries must be cut by at least 5 per cent in 2008-12 compared to 1990. At the same time, there were some issues left pending on the details of the Kyoto Protocol which were finalised in Bonn in July 2001 and in Marrakech in 2001. The Kyoto Protocol is the first important step towards implementation of the 1992 UN Framework Convention on Climate Change. The

Kyoto Protocol is expected to enter into force in 2002.

Based on the conclusions of the UN Panel on Climate Change, the EU ministers for the environment recommend stabilisation of greenhouse gas concentrations in the atmosphere at a level slightly under twice that of pre-industrialisation concentrations and that the global temperature increase should not exceed 2°C compared with pre-industrialisation levels. If this recommendation is to be met, by the end of this century the developed countries will probably have to reduce their emissions of greenhouse gases to a level corresponding to 10-15 per cent of today's emissions. This calls for considerable cuts in greenhouse gas emissions - between 2 and 2.5 per cent per year.

This presupposes a drastic reduction in resource consumption. Considerable technological progress is needed, as is a change in consumption and production patterns in the developed countries. At the same time, significant restraints in the long term must clearly be implemented in the developing countries, which can expect continued population growth and major economic development.

Despite such reductions, it is a fact that climate change cannot be averted completely; it can only be lessened. The effects of climate change may also be mitigated through provident adjustment. To achieve sustainable development, research and knowledge are needed, not only on reduction potentials, but also on future climate change and its effects, as well as the options for adjustment. This is paramount in being able to meet national and international challenges, especially in the long term.

Objectives and activities in the future

In 2005, the aim is to cut Danish CO₂ emissions from energy consumption by 20 per cent compared to the 1988 level. Pursuant to EU agreements on distribution of EU emission reductions under the Kyoto Protocol, Denmark must reduce total greenhouse gas emissions by 21 per cent in 2008-12 compared to 1990. In March 2002, Denmark agreed to reduce emissions by 21 per cent compared to the unadjusted base year 1990, when Danish emissions of CO₂ were extraordinarily low due to large imports of electricity from Norway

and Sweden. In addition, the target is to halve the greenhouse gas emissions of the industrialised countries by 2030. If, in the long term, greenhouse gas concentrations in the atmosphere are to be reduced further, international goals must be set for much bigger reductions after the expiry of the first budget period of the Kyoto Protocol in 2008-12.

The Government regularly *monitors progress* and whether we are ensuring “the most cost-effective approach for society when achieving environmental objectives”. In order to live up to the objectives of the Kyoto Protocol all sectors of society must contribute to the reduction of emissions, for example, as described in the EU’s Sixth Environment Action Programme. For example, this applies to energy production, transport, agriculture, forestry, industry and households.

In terms of *energy production*, a possible extension of the CO₂ quota scheme within the field of electricity generation will probably result in increased use of renewable energy and natural gas.

The transport sector must contribute to achieving Denmark’s commitment of reducing CO₂ emissions by 21 per cent in 2008-12 compared to 1990. The Danish Government will consider possible measures for reducing CO₂ emissions as a background for the setting of targets for the transport sector’s CO₂ emissions up to the first budget period of 2008-12 and in the long-term.

Agriculture will also contribute considerably to the reduction of climate gases such as methane and nitrous oxide (laughing gas). The action plan for ammonia provides an initiative which contributes to a reduction in agriculture’s climate-gas emissions. But initiatives such as expanded biogas plants can also contribute to limiting emissions.

With respect to *forestry*, the increase in woodland areas will lead to absorption of CO₂ during the generation of new forests, increasing the scope for biomass use. This is one reason why the Government aims at increasing woodland areas within one tree generation (80 to 100 years).

It is necessary to reduce emissions of strong *industrial greenhouse gases* such as HFCs, PFCs and SF₆.

The *Danish Energy Savings Act* of 2000 provides for enhanced planning, coordination and prioritisation of overall energy-savings initiatives.

Further initiatives will be required of all sectors of society in the coming years in order to achieve objectives for the reduction of emissions by 21 per cent in 2008-12 compared to 1990.

At *international level*, Denmark is working actively to make the Convention on Climate Change and the Kyoto Protocol efficient instruments in the fight against climate change. The Danish Government will use the flexible mechanisms in the Kyoto Protocol by initiating projects that contribute to the reduction of CO₂ emissions abroad, so that CO₂ reductions in other countries financed with Danish money are included in Denmark’s CO₂ budget and meeting international CO₂ obligations. This initiative may also contribute to transferring environmentally friendly technologies and to enabling the partner countries to better evaluate the sustainability of various projects.

Denmark also supports the *Global Environment Facility* (GEF), which since 1991 has donated more than USD 1.2 billion to developing countries and countries in Central and Eastern Europe for climate issues. Denmark also supports the UNEP’s Collaboration Centre on Energy and the Environment at the Risø National Laboratory in Denmark.

Denmark reports to the *Convention on Climate Change* regarding emissions and uptake of greenhouse gases, the prevention of climate change, expected results of climate change, compliance measures, research and monitoring initiatives and Denmark’s activities with regard to technology transfer and capacity building in developing countries.

It is an undeniable fact that climate change cannot be averted completely, only lessened. Based on the most recent report of the Intergovernmental Panel on Climate Change, the Government will conduct an analysis of *possible climate effects* in Denmark and draw up potential scenarios to establish a foundation for the necessary emergency measures. We must therefore also carry out research on the consequences of climate change. Increased focus on knowledge will aid important political decisions.



5 Biodiversity

- Nature protection and public access to nature

Denmark is a beautiful country with many lovely natural areas and a good environment, and this must remain so. Sustainable development means that we must safeguard nature's scope for development. Therefore, it is important to have prioritised and targeted preservation of species, habitat types, ecosystems and genetic diversity. Relative to other countries, Denmark has a small natural area compared to total land area. Amongst other factors, this is because the natural characteristics of the Danish landscape are well-suited to agriculture, and because society has encouraged this development. At the same time, we must increase areas with nature and forest and limit discharges of nutrients and compounds dangerous for the environment. Finally, biodiversity considerations must be integrated into the activities of the sectors involved.

Public awareness must be increased for people to understand that certain natural assets associated with natural and cultural landscapes, habitats and the diversity of species and gene pools are unique and irreplaceable. Denmark must utilise nature in a way that allows future generations access to natural resources to at least the same extent as today.

Outdoor recreation and nature experiences are important to people's well being and quality of life. It is important that there is general public support for a sustainable nature and environment policy. Therefore the public must have good access to nature, forests and the open countryside. Since the 1992 Rio Conference, Denmark has increased its efforts to prevent the decline in nature and to strengthen biodiversity. The biodiversity strategy of 1995 forms the basis of this intensified activity. The objective of the EU's Sixth Environment Action Programme is to stop the loss of biodiversity by the year 2010 at the latest.

Under the Danish Nature Protection Act, vulnerable habitats corresponding to 9 per cent of Denmark's area are protected and 4.5 per cent of this area is preserved. During the last 10 years, more than 14,000 hectares of new natural areas, forests and outdoor recreational areas have been created in the agroenvironment sector. 194 international nature reserves have been established as part of the implementation of the EEC directive on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). Furthermore, proposals have been submitted for a further 56 habitat areas and 35 expansions of existing areas. Since 1994, nature and wildlife reserves have been doubled and they now cover 330,000 hectares. The combination of such efforts has halted the decrease in the size of Denmark's natural areas.

The state of the environment has most recently been elucidated by the so-called Wilhjelm Committee, which has laid down a knowledge-and-research-based foundation for future efforts towards biodiversity. Despite the great efforts of, amongst others, the agricultural sector to reduce impacts on the environment and nature, the quality of nature in agricultural areas, in the sea and in nature preservation areas is still continuously deteriorating. The 1997 Red List of extinct, endangered, vulnerable and rare plants and animals states that in Denmark, about 30 per cent of species are "acutely endangered and vulnerable". 1,500 species are experiencing such a decline that their continued existence in Denmark is under threat. Denmark has also registered a negative development

in the case of several ordinary species and natural habitats given priority in the EEC Habitats Directive. Nevertheless, improvements have occurred for some species which Denmark has an international obligation to protect, for example waterfowl.

Habitats and biodiversity are exposed to harmful impacts from, for example, nutrients and other environmentally harmful compounds or physical impacts. A major challenge is to ensure that these impacts are considerably reduced. To achieve this aim, all sectors affecting nature - agriculture, forestry, fisheries, households, transport and energy - must be responsible for integrating nature considerations into their sectoral activities. Strategies and production methods, including new technology, taking increased account of nature must be developed, particularly in agriculture and fisheries.

Still, nature has too little space and many areas of nature and forest are too small. To avoid the loss of more species and habitats, we must therefore restore semi-cultural areas and support many

ECOSYSTEM RESTORATION HAS LED TO THE RETURN OF RARE GALLINACEOUS BIRDS

In 1998, an ecosystem restoration project in the Varde river valley and the water-meadows of the bay of Ho in Jutland commenced on the private initiative of the farming community in the hope that the rare land-rail would return. Today, the call of the land-rail can once again be heard in the Varde river valley.

The project has established a green network of water-meadows in the river valley. Extensive grazing increases the dynamics and variation of the area while safeguarding a high degree of biodiversity. Today, large parts of the river valley form a mosaic of open, wet, non-fertilised meadows and areas with increased vegetation. The Danish Forest and Nature Agency together with the EU (LIFE-nature) has contributed almost DKK 9.5 million to this ecosystem restoration. Great efforts have also been made locally, and the Ministry of Food, Agriculture and Fisheries has contributed with the implementation of land allocation and by the entering into agreements with farmers on land consolidation and environmentally sound agricultural measures in order to achieve this objective.

species and nature types, including those in connected nature areas through nature administration and increased protection in green networks. A growing challenge is the existence of genetically modified organisms and the introduction of non-native species on land, in lakes, watercourses and at sea. Furthermore, man-made climate change will have a growing impact on the development of flora and fauna in the years to come.

Authentic nature and culture experiences are an important part of welfare in modern society. To maintain a large degree of awareness of historic environments, local culture and identity must become more visible. Villages, burial grounds and churches from the Middle Ages are examples of important elements of identity in local and national history. Historic environments may be the foundation of uniting local communities and tourist needs, and may also contribute to maintaining and developing viable local communities. The balance between conservation and utilisation must be maintained.

Objectives and activities in the future

Efforts must be made to protect and restore habitats for indigenous animals and plants in order to have large viable populations on land and in freshwater and marine environments. The efforts will include areas where nature is allowed to develop freely with no significant degree of human influence.

In 2003 the Danish Government will present a *collated action plan for the preservation of biodiversity*, so that Denmark can live up to the requirements and expectations of the UN climate convention on biodiversity and within the EU on the nature area. The conclusion from the European Council summit in Gothenburg in June 2001 states specifically that the deterioration of biodiversity must be halted by 2010.

The action plan will lay the framework for future initiatives to secure and target activities to safeguard biodiversity and protection of nature. One way of achieving this objective is to ensure that activities in agriculture, forestry, fisheries and other sectors are carried out on a sustainable basis in accordance with this Strategy's eight objectives and

principles, and thus that full integration with regard to biodiversity is included in the relevant sectors. The action plan will work with different opportunities to make the current initiatives more targeted. This will include ensuring that *existing areas with a high quality of nature* are protected against deterioration, and by developing a cohesive network of protected natural areas. At the same time the plan will continue to protect species and genetic diversity, and support preventive initiatives against imports of foreign species into nature. Furthermore, the plan will ensure that objectives for nature are achieved as economically as possible. Voluntary agreements with landowners, targeted subsidy schemes and local initiatives are important tools.

Research and monitoring nature will be developed with knowledge about how we preserve and utilise nature sustainably. Overall *nature and environment monitoring* will provide information regarding the extent to which we achieve the objectives agreed. Collection of knowledge by nature organisations and voluntary help is an important contribution to nature monitoring and nature administration. This should be promoted. The knowledge base regarding economic analysis will be enhanced. Further targeting of initiatives for nature can be brought about through nature-quality planning.

An important element in future initiatives for nature will be to enhance *local participation* and involvement. Municipalities will be more involved and dialogue between the public and the authorities will be a vital prerequisite for future initiatives. The Ministry of the Environment will contribute to welfare and health policy as part of the administration of national forest and nature areas.

The Danish Government will promote sustainable development in the *Wadden Sea region* in cooperation with the regional and local authorities, as well as the local people. This will take place through work in the Wadden Sea Forum which will examine the possibilities for promoting sustainable utilisation of the trilateral Wadden Sea area without compromising protection of nature in the area. Teaching and other transfers of *knowledge* about biodiversity and nature will be promoted as the basis for increased popular commitment to nature

protection and to restore confidence between the public and the central environmental authorities.

Outdoor recreation provides better health, quality of life, experiences of nature and a greater awareness of natural and cultural environments. The public should have good opportunities for enjoying nature. The aim is to create good opportunities for enjoying the countryside and the forests. The rules for access to nature have been discussed in the so-called Access Committee which indicated a number of changes in the rules. The Danish Government considers that the existing rules for public access to nature are generally satisfactory, and it welcomes voluntary implementation of the proposals from the Access Committee. Coherent networks of paths and the establishment of new forests near old country towns and major cities have special value. Rangers and nature schools, etc., are to contribute to increasing children's knowledge about nature. Information on the www.naturnet.dk website is to include easily accessible information about options for outdoor recreation.

Denmark played an important role in the preparation of the Convention on Biodiversity, and Denmark will continue its active role in international cooperation on biodiversity through contributing to binding decision-making in the implementation of the Convention. Denmark considers it extremely important that work within the very wide-reaching Convention becomes more targeted and strategic, and that better synergy is created between work within the various international agreements concerned with administration of natural resources. Denmark also considers it important that the Cartagena Protocol on biosafety that regulates transfers of gene-modified organisms between countries enters into force as soon as possible.

At EU level, Denmark will contribute actively to fulfilment of the objectives from the Gothenburg meeting in 2001 on curbing reductions in biodiversity before 2010. This is to take place through implementation of the Habitat Directive, the Sixth Environment Action Programme, and the four sector action plans for biodiversity regarding agriculture, fisheries, development cooperation and conservation of natural resources. There will also

be work on a Danish contribution to creating an overall EU strategy for protection of the marine environment.



Foto: André Butman

6 Environment and health

Chemicals, environmental pollution, food, physical working environment and physical indoor conditions

Denmark should be a country where pollution from products, food, working environment, traffic and physical indoor conditions affecting the population's quality of life and health is constantly falling. Harm to animals and plants from pollution should also be limited. The protection level must take account of especially sensitive groups of people - such as children, pregnant women, people who suffer from allergies or from chronic illness - and of particularly vulnerable ecosystems.

Today, the mean life expectancy of Danes is among the lowest in the European Union, and during the last 30 years it has only risen by two years. The primary reason for our low life expectancy is our lifestyle. In order to reverse this trend and improve public health, a number of health policy objectives for prevention and health promotion were presented in 1999, and these are to be taken further in the forthcoming health programme for 2002-2010. The quality of the environment also affects health. Chemicals, micro-organisms and physical environmental factors may be harmful to the health of people and animals, and to the environment. The quality of the environment is important in a sustainable society.

Objectives and activities in the future

Denmark must reduce harmful impacts on human health and on the environment to the greatest possible extent, no matter what the source. The Government plans to formulate a strategy for the connection between environmental factors and health, which is to clarify and prioritise measures against harmful impacts on health from, for example, environmental factors, chemicals in products and goods, food, working environment, physical indoor conditions and traffic.

6.1. Chemicals

Chemicals used in society must not have any undesirable impact, such as carcinogenic effects, reproduction

toxicity, mutagenicity or effects on vulnerable ecosystems. By 2020, no products or goods on the market may contain chemicals or have highly problematic effects on health and the environment.

While chemicals provide many advantages in a modern society, they also entail a number of disadvantages. We do not know enough about the effects on health and the environment of most chemicals today. While needing to expand our knowledge, we must also meet the objective of carrying out fewer animal tests. Computer models and other alternative test methods accommodate both aims.

International, active and future-oriented initiatives in the chemicals field are imperative, because chemicals disperse across borders - primarily through trade in goods but also via the environment. Denmark must be active in the European Union and contribute to ensuring that binding international agreements and conventions address major global environmental problems.

One objective of the Nordic strategy on sustainable development is that dispersions of chemicals that pose a threat to the environment and health are to cease within a generation.

The precautionary principle is an important political instrument, and the Government will endeavour to ensure that this principle contributes to a sufficient and high protection level for approval of pesticides and for the use of other chemicals. Pesticides are approved on the basis of a risk assessment. Pesticides must be prohibited if their use has unacceptable effects on the environment or human health.

Another important instrument to protect people and the environment against the harmful effects of chemicals is the substitution principle. Substitution means that harmful compounds, products or processes are substituted by other less harmful compounds, products or processes with the same function. Compounds and products with the least impact on the environment and health must be used as substitutes. The substitution principle is highlighted in the EU's Sixth Environment Action Programme as a vital element in initiatives to pro-

tect people and the environment against harmful impacts from chemicals.

We must focus particularly on the protection of specially sensitive and vulnerable groups of people, especially children and pregnant women. Special attention is being paid to endocrine disrupters.

Objectives and activities in the future

Manufacturers, importers and authorities alike must make sure that chemicals, pesticides and biocides can be used in a way that is safe for human health and the environment.

Denmark must take active measures with respect to chemicals by phasing out hazardous chemicals by 2020 that, on the basis of new knowledge, prove to have harmful effects on human health and the environment. This is also a target in the EU's Sixth Environment Action Programme.

In the next few years we must focus on the most hazardous chemicals. In the EU, Denmark will work for the implementation of the EU chemicals strategy. Highest priority for Denmark in the strategy is registration of all chemicals as soon as possible, and increased knowledge about the effects of all chemicals, at least in a set of basic data. Screening using alternative assessment methods such as computer models could be applied. In the EU, Denmark will work for a ban on marketing compounds where no industrial data are available within fixed deadlines.

The use of chemicals must be limited, and whenever relevant any chemicals with harmful effects on human and animal health and on nature must be prohibited. We must avoid unnecessary tests and experiments on animals, including repetition of experiments that have already been carried out. At the same time, we must ensure that the tests carried out entail as little suffering as possible to the animals.

Chemicals manufacturers must be responsible for examining all chemicals before they are marketed and for providing easily comprehensible information on how to handle products without risk to the user or the environment.

It is important to retain a high level of protection in assessments of the effects of pesticides and biocides on health and the environment. Biocide consumption must be reduced as much as possible or substituted by less harmful compounds. The Government will endeavour to use the substitution principle in pesticide assessments. With a view to reducing consumption, pesticide taxes have been introduced, and a number of initiatives have been taken as a follow-up to the Action Plan on Pesticides II to reduce the over-consumption of pesticides in Danish agricultural production. In the long term, the use of pesticides must be reduced to the greatest possible extent. Pesticides must be prohibited if their use has unacceptable effects on the environment or human health.

Nationally and internationally, the Government will endeavour to ensure that children, pregnant women and other vulnerable groups of people are not exposed to hazardous amounts of endocrine disrupters. Dioxin is suspected of being an endocrine disrupter. Dioxin emissions from known sources must be minimised, and knowledge concerning previously unknown sources must be increased.

6.2. Environmental quality and other environmental factors

The environment must be of high quality in Denmark to avoid the impact of pollution on human health, animals or plants. Contaminated soil must not threaten drinking water or human health. By 2020, there must be no emissions to air, soil, or water which are harmful to human health or the environment. By 2020, pathogenic micro-organisms must be reduced to a level that does not pose a threat to human health. The Government's objective is for Denmark to be one of the most effective OECD countries in reducing pollution.

The quality of the Danish environment has improved over the last two decades. However, a number of areas remain where the environment is so polluted that it may affect human health or have negative consequences for nature and animals.

One cause of air pollution is suspended particles from diesel vehicles. Recent surveys indicate that

suspended particles have an impact on health. The scope of this impact is uncertain. The existing particle level is considered to aggravate conditions, particularly for people with respiratory diseases, and to increase mortality rates. The particle level is considered to have a negative impact on the population's mean life expectancy, but it is uncertain by how much. Much can be achieved through cleaner technology, diesel and petrol quality requirements, filters on diesel-driven vehicles and trains, and requirements concerning cleaning the smoke from incineration plants. At the same time there is a need for more knowledge about the health impact of the various particle sizes and the population's exposure to suspended particles.

Ground-level ozone may cause respiratory problems and damage trees and crops. The yield loss due to ozone is estimated at approximately 10 per cent. The greater part of ozone in the air above Denmark is transported here from the south. Ground-level ozone must be limited by reducing NO_x and VOC emissions in the countries south of Denmark.

Many people are exposed to noise nuisance. Traffic is the most important source of noise with road traffic being the largest contributor. According to recent estimates, more than 500,000 dwellings are exposed to noise of more than 55 dB from road traffic, the recommended limit value for new housing areas. For approximately 145,000 of these, exposure exceeds 65 dB. The vast majority of dwellings exposed to road traffic noise are in big towns, and more than half are in the greater Copenhagen area. Thanks to the ongoing initiatives of the Danish National Railway Agency, for example setting up sound barriers, the number of dwellings exposed to more than 65 dB from train traffic has fallen to about 7,000. Due to the phasing out of the noisiest aircraft, the number of dwellings exposed to more than 65 dB from air traffic has dropped to about 1,500. In addition, an estimated 75,000 to 100,000 dwellings are exposed to noise exceeding the recommended limit values from companies and noisy leisure activities, such as shooting ranges and racetracks.

The ozone layer, high up in the atmosphere, must be preserved. It protects the Earth from hazardous

ultra-violet radiation from the sun, which in excessive doses increases the risk of skin cancer in humans and impedes plant growth. The greenhouse effect accelerates ozone depletion. In coming years, the thin ozone layer will aggravate the damage.

Industrial waste and air pollution have led to soil contamination - especially in old urban areas. Lead and tarry compounds in the soil are a health problem in particular to children living or playing in these areas. Other compounds cause problems because they disperse to the groundwater. Pesticide residues, chlorinated solvents, the MTBE petrol additive and oil and petrol may pose a threat to clean groundwater.

Denmark is one of the few countries in Europe to extract almost all drinking water from groundwater that requires very little treatment at water treatment plants. Clean drinking water has always been a high priority as it is a vital resource, and its quality is of great importance for human health and for industry. Groundwater and drinking water monitoring shows, however, that in some areas groundwater quality is under threat. In rural areas, groundwater is threatened because of the use of pesticides in agriculture, and nitrogen handling in some parts of Denmark constitutes a major problem. Pesticide use in urban areas also causes pollution of the groundwater. Contaminated soil threatens the groundwater because of the inappropriate handling of chemicals in the past.

Discharges to the aquatic environment of metals and xenobiotic compounds may affect animals and plants in the short as well as the long term. Many compounds accumulate in the food chains and are thus transferred to humans through the food we catch at sea.

Micro-organisms are everywhere. Some are vital, others may be pathogenic. We have knowledge of some micro-organisms from, for example, beach water, but risks may also come from waste, sludge and sewage.

Objectives and activities in the future

The content of suspended particles in the air must be so low as to have no negative impact on the

quality of the life and health of the Danish population or the environment. Denmark must focus on reducing the content of suspended particles in the air. First, we must get a precise overview of the extent of the problem in Denmark. At the same time we must increase our knowledge about the effects of various measures and technological solutions as a basis for future measures. In the EU, limit values have been established for emissions of particles from new lorries and buses.

Denmark must reduce acidification, eutrophication and ground-level ozone. Effective implementation of international regulations on the emission of SO₂, NO_x, VOC and NH₃ in Denmark by 2010 has top priority. In the long term, it will be necessary to set new goals and launch new initiatives to ensure that these environmental problems are solved completely.

In 2003, the Government will present a strategy for reduced noise from road traffic. This strategy will include information regarding the feasibility of achieving a significant reduction in the number of dwellings severely affected by road noise. In addition, the strategy will assess the macro-economic costs. All dwellings exposed to train traffic noise exceeding 65 dB are expected to be offered noise protection by 2010. Noise is an important parameter for environmental approval of heavily polluting enterprises. Companies requiring environmental authorisation often draw up action plans for noise reduction.

Ozone depletion must be halted to reduce the number of skin cancer cases in humans and improve the growing conditions of plants. Denmark will continue its international efforts to phase out ozone-depleting compounds.

It is important to continue our measures against soil contamination. We must make sure that soil contamination in urban areas and pollution that may threaten the current or future supply of drinking water does not give rise to health problems.

Clean drinking water remains a high priority. The ban on pesticides endangering the groundwater must remain in force. Work has commenced on as-

sessing whether areas especially sensitive to leaching of pesticides can be designated. On this basis, assessments of the need to regulate application of pesticides in these areas will be carried out. Regional and local authorities and water utility companies must now implement the groundwater mapping framework and groundwater protecting measures to secure clean groundwater in the long term. Denmark must continue its efforts to minimise the threat to groundwater posed by the MTBE petrol additive, preferably by permanently phasing out this compound. Groundwater monitoring must continue to evaluate whether the measures taken to protect the groundwater are effective and to track new problems. Standards must be set for the approval of materials used to distribute drinking water.

Finally, the Water Framework Directive must be implemented in Danish legislation. The Water Framework Directive implies further protection of the aquatic environment. A new system must be established to define specific environmental objectives for ecological conditions in water districts. Concrete initiatives must be implemented based on the nature of and the human impact on individual aquatic areas. Finally, a water plan must be drawn up which has regard to planning and monitoring results.

It is important to limit emissions to the aquatic environment of metals and xenobiotic compounds accumulating in the food chain. By 2020, emissions of environmentally harmful compounds must be stopped (the generation objective). Wastewater treatment in the open country must be improved. This will also further improve beach-water quality. Finally, the risk of known pathogenic micro-organisms must be assessed. Pathogenic micro-organisms must not be dispersed in the environment to a damaging extent.

6.3. Food

Food must be safe and healthy and of high quality. Food safety must be absolute and the presence of chemical pollutants must be minimised. Denmark must be able to assess risks and effectively control the presence of hazardous compounds.

The variety of food has increased and changed over the last decades, for example because of trade and food technology developments. There is increased focus on food quality and safety. The environmental effects on food include inadvertent occurrences of hazardous compounds. Recent years have witnessed increased focus on pollutants in food, for example dioxins, hazardous metallic compounds, TBT (tributyltin) and residues from packaging and pesticides.

Residues of pesticides in food products must be minimised. Food must not contain unacceptable pesticide or pharmaceuticals residues.

To safeguard the population against unacceptable residues of xenobiotic compounds and pathogenic micro-organisms, the authorities lay down rules in this field and implement monitoring programmes.

The common EU limit value for dioxin, in both animal feed and food must secure people against food with high levels of dioxin.

For the subject of food safety, please see chapter 9.

Objectives and activities in the future

An absolutely high level of food safety continues. Food-borne illnesses must be combated. The use of additives must be limited as much as possible, and limit values must be established for concentrations of undesirable residues in food.

Limit values for environmental pollution must be established having regard to the precautionary principle. They must be as low as possible. Limit values must be adapted in parallel with new knowledge, and safety assessments, risk analyses and control of chemical pollutants and chemicals in production will be continued.

EU efforts to establish common limit values for pesticides should be given a higher priority, as there are still several hundred compounds without common limit values. In this connection, the Government will emphasise restrictive regulation of chemical pest control in agricultural production.

Levels exceeding the new EU limit values for dioxin must be followed up so that the sources of pollution are located and restricted.

Food labelling must be improved and misleading information avoided.

6.4. Health and safety

All Danish workplaces should form a safe and healthy basis for creativity, quality and productivity. In 2020 no one will be exposed to harmful impacts from chemical substances at work, especially carcinogenic compounds, organic solvents, and heavy metals.

The Action Programme for a Clean Working Environment 2005 focuses on intensified preventive health and safety measures. The objective is to provide health and safety conditions to avoid completely or minimise fatal accidents, impacts of carcinogenic chemicals and brain injury due to organic solvents or heavy metals. At the same time, we must avoid injury to children and young people from heavy lifting and monotonous repetitive work, health injury caused by psycho-social risk factors and diseases or serious nuisances due to poor physical working conditions.

Chemical substances are often used in high concentrations in workplaces and may affect the health of employees. Employees therefore run the risk of serious health problems, such as carcinogenic effects, reproduction toxicity, brain damage or development of allergies. The hazardous compounds may also develop during the work process.

Measures of individual companies must contribute to creating safe, healthy and developing workplaces. An important element of sustainable development in companies is collaboration between management and employees on the environment and health and safety. This cooperation should be strengthened further.

Objectives and activities in the future

In coming years, health and safety measures must also concentrate on implementing the seven visions of the Action Programme for a Clean Working Environment 2005. Within the Action Programme there will be renewed priorities so that the most serious health and safety problems are solved first. Health and safety must be improved through dialogue and cooperation between employees, enterprises, the social partners, and the Government. The use of chemicals at workplaces must be min-

imised. Work-related injuries caused by exposure to carcinogenic compounds and organic solvents or heavy metals must be avoided by using the least hazardous compounds or materials (the substitution principle).

Companies must receive clear directions for use from manufacturers. Health and safety conditions must be included at the planning stage. Suppliers must be motivated to develop products that take health and safety into account. The social partners must support initiatives to phase out problematic compounds.

6.5. Physical indoor conditions

Physical indoor conditions in dwellings must not constitute a nuisance to residents. Construction and housing materials should be of a quality that neither emits nor develops harmful compounds.

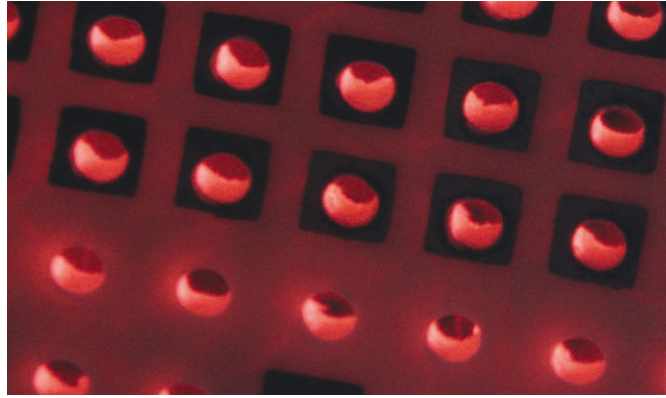
We spend a great deal of time in our homes. We must therefore focus on good daylight conditions, suitable temperature levels, good air quality and good acoustic conditions in our buildings. Building products and materials must be healthy and must not emit compounds or vapours that may be harmful to health. Possible health effects are headaches, respiratory difficulties and allergies.

In recent years, Denmark has developed a scheme for physical indoor conditions with respect to construction products. Extensive measures have been introduced against problems of mould fungus and increasing numbers of people who are allergic to house dust mites. Requirements concerning indoor climate and ventilation in building regulations have been tightened significantly and information has been provided on suitable measures regarding humidity and ventilation in housing.

Objectives and activities in the future

Further development and increased demand for the Danish indoor climate labelling scheme is to be encouraged.

Instruments to document the effects of building products on the environment and indoor climate must be developed.



7 Resources and resource efficiency

It is necessary to utilise the resources of nature. They are used as production and consumption input. Resources form the basis of increased welfare. Sustainable development implies that increased welfare takes account of the Earth's ecosystems and the amount of renewable and non-renewable natural resources.

A long-term aim is to increase resource efficiency significantly during the course of one generation. First of all, we must limit the use of natural resources that are particularly scarce or vulnerable, or particularly harmful to the environment when used. The UN Secretary General has pointed to changes in production and consumption patterns as a significant challenge towards sustainable development. In this connection, he indicated decoupling and more efficient use of resources by a factor of 4 and 10 as goals. As part of the Danish Government's efforts to achieve sustainable development and sustainable production and consumption patterns, a long-term target has been set to limit resource consumption to about 25 per cent of the current level. There is a need for further specification of initiatives concerning the use of resources in the future.

The use of natural resources affects the environment. It is important that resource consumption and environmental impacts are seen in an international perspective. It is important to take account of both national and international resource consumption, as well as the associated environmental impacts. It is imperative to give high priority to natural resources and to use them prudently. Consumption must increasingly be based on renewable resources and recyclable materials. But renewable resources must be used at a pace that allows for regeneration. The use of non-renewable resources must take into account total volumes and possibilities of replacing the resources with other materials.

In areas where use of resources presents special problems for people and the environment there must be determined efforts to change the technological basis for production and consumption in order to reduce significantly society's dependency on these resources.

Natural resources are utilised for many activities in society. Energy is used in industry and households, for transport and heating. Raw materials are used to manufacture products. Soil is a natural resource on which houses and roads are built and crops and forests grown. Water is also a resource used for people and animals as drinking water, production input or as habitat for fish, animals, plants, etc. The sea represents a great food resource.

Denmark has already made much progress through targeted initiatives. For example, total Danish energy consumption remained fairly constant during the 1990s despite economic growth. Many companies have introduced environmental management, cleaner technology and work with cleaner products, thus reducing total resource consumption and environmental impact. Because of measures taken in the chemicals field, more compounds harmful to the environment will be removed from waste in the future. Finally, water consumption has dropped considerably over the last decade. However, more drastic steps are needed to ensure sustainable use of natural resources.

In Denmark, land is a scarce resource, to be used with care. Intensification of agriculture and consideration for the environment and recreational in-

DESPITE INCREASED ACTIVITY, A DANISH COMPANY HAS REDUCED WASTE AMOUNTS.

The company is an international market leader. The company's environmental management includes mapping and sorting waste and scrap to achieve the greatest possible degree of recycling and reuse. 80 per cent of the company's waste is scrap metal and 20 per cent is other waste. The amount of scrap has been reduced; partly by reducing production waste to under 1 per cent through "operator self-control", and partly by utilising steel rolls 10 per cent better in a new advanced machine. The scrap metal is sorted and sold for recycling purposes outside the company.

Other waste, one-third of which is chemical waste, has been significantly reduced. This has been achieved primarily through reducing the number of chemicals used from 1,365 to just under 600 different chemicals. The amount of chemical waste dropped by 37 per cent from 1997 to 1999, resulting in waste disposal savings of DKK 340,000 per year.

These results were achieved thanks mainly to strong management support and through staff involvement in the environmental work in autonomous production groups.

All the company's production units around the world are ISO 14001 certified, and the European companies are also EMAS registered.

terests have increased competition for land. The most acute needs must therefore be given priority. Raw materials must be extracted in a careful manner to allow subsequent use of the area for other purposes.

Resource consumption in the construction sector is vital to society's total resource consumption and environmental impact. Construction and operation of buildings account for half of Denmark's energy consumption, while consumption of construction materials constitutes the major part of raw materials consumption in Denmark. Construction generates large amounts of waste, but the greater part is recycled. In 1999, 90 per cent of waste was recycled.

Over a ten-year period the total amount of waste in Denmark has increased. After a stabilisation in 1996-99, mainly due to a reduction in waste from energy production, total waste amounts in Denmark have risen again in 2000. Waste amounts from a number of sectors have risen continuously. We must all contribute to minimising waste generation and to increasing recycling, but we must prioritise individual material flows. Not all materials are equally attractive ingredients in waste and, first of all, measures must be targeted at materials that cause the most serious environmental impact or the largest resource consumption.

Unavoidable waste must be recycled to the greatest possible extent to retain resources in the cycle. Denmark has a long tradition of recycling a large part of all waste. In 2000, recycling amounted to 65 per cent of total waste amounts. But we must do even better. New treatment technologies will be needed to ensure the efficient utilisation of resources and the elimination of problems of environmentally harmful compounds. However, when we decide on the form of treatment, we must balance environmental, energy and resource considerations against economic considerations.

Objectives and activities in the future

Resource consumption must be reduced. Today, Danish environmental policy aims primarily at promoting a balanced use of resources. In the future, measures will, for example, focus on finding data and developing methods to assess the overall re-

source consumption and environmental impact of products and materials, including hidden material streams. Specifically, it is a question of finding the best combination of measures. The Government will investigate whether the goals of more resource efficiency and waste minimisation are best achieved using targeted market-based measures. Investigations will include whether revision of the existing economic measures, including taxes on raw materials, etc. could be appropriate. Product prices should fully reflect the resource consumption and environmental impact of products. Taxes on resources should be agreed at international level, for example through joint minimum rates for environmental taxes in the EU.

Product-oriented environmental initiatives are important. Companies are therefore encouraged to develop and market more clean and environmentally friendly products. We must focus on cleaner products to replace products with high resource consumption or high environmental impact. New technology will undoubtedly play an increasingly important role in the development of cleaner products.

It should also be easy and attractive for consumers to choose *green products*. Consumers must have sufficient and relevant information on the impact of products and goods on the environment.

All stakeholders must enter into binding cooperation on preventing waste. In 2003 the Government will present a strategy aimed at preventing this loss of resources and the environmental pressure associated with waste. Production, marketing and consumption of environmentally friendly and less resource-intensive products and services are priorities in this strategy.

By recycling waste we save virgin resources. The objective of the waste plan, *Waste 21*, is to recycle 64 per cent of waste amounts by 2004 and to reduce landfilled waste amounts to 12 per cent. The plan focuses on quality in waste treatment by utilising waste resources and limiting problems of environmentally harmful compounds.

In Denmark, *sustainable use of raw materials* must be achieved by developing new technologies,

increased coordination of the extraction of raw materials, and increased knowledge concerning total remaining raw material reserves. Recycling and use of substitution materials for non-renewable raw materials remain priorities.

Oil and gas production must take maximum account of health, the environment as well as flora and fauna. This should be achieved in collaboration with the North Sea countries through targeted management of compounds discharged into the sea. This applies not only to local discharges into the marine environment, but also to transboundary pollution through the air or via the food chain. In its effort to substitute scarce oil and gas resources, the Government aims at developing renewable energy sources, etc.

Increased competition for the scarce *Danish land resources* makes heavy demands on planning. Various considerations must be combined to minimise conflicts between different uses of the same piece of land. Outside urban areas, diversified land use must be promoted.



8

Denmark's international activities

Denmark's vision for regional and global sustainable development foresees a Europe and a world enjoying economic progress, increased welfare and better environmental protection. It encompasses a world market with free trade, based on high environmental and social standards coupled with respect for human rights, democratisation, openness and administrative accountability.

Through both its foreign and environment policy, Denmark will work actively to promote international endeavours. Danish international assistance is well in excess of the UN target of 0.7 per cent of GNI. Denmark considers it important to maintain coherence between development, environment, and trade policy.

Denmark favours a strong global structure aimed at promoting all the elements of global sustainable development, including a structure that furthers international environmental cooperation and regulation. Denmark will work towards a global deal on sustainable development and global partnership.

Activities aimed at promoting sustainable development nationally are closely linked to the global challenges for sustainable development - and vice versa. Growing trade and international capital flows, conflicts and refugee flows together with the increasing pressure on natural resources have made individual countries progressively more dependent on the surrounding world. Consequently, Denmark has a major interest in contributing to sustainable development through national activities, through the EU, the OECD, the UN, the WTO and the international financial institutions including the World Bank and the International Monetary Fund.

We are facing a multiplicity of regional and global challenges. Half the population of the world live at or below the subsistence minimum. For example, one fifth of the world's population live without access to clean water and sanitation, a state of affairs particularly affecting women, children, indigenous peoples and other particularly vulnerable population groups. The struggle for scarce natural resources has frequently given rise to violent conflicts which cause severe refugee problems, particularly in developing countries. Analyses from the UN Intergovernmental Panel on Climate Change show that climate changes are very likely already a reality. The greatest negative consequences of climate change are expected in developing countries. Biodiversity is under mounting pressure, and natural resources are often exploited on a non-sustainable basis. The use of hazardous chemicals is a growing problem for human health as well as flora and fauna.

Poverty and environmental problems are often interlinked. The poorest people are generally hardest hit by environmental degradation. At the same time, poverty limits the possibilities of exploiting natural resources in a sustainable manner because the resources available for investment in environmental protection are limited. Poverty contributes, for instance, to impoverishment of the soil and desertification in Africa. In contrast, uncontrolled economic growth in developing countries, and more developed countries in the East and South often leads to increased use of natural resources and pressure on the environment.

In all its international activities for global sustainable development, Denmark emphasises the need for integrating and balancing the economic dimension (poverty-oriented growth), the social dimension (development of social sectors such as education and health) and the environmental dimension (environmental protection).

Through EU cooperation Denmark has participated actively in improving European environmental protection. In a number of areas, EU environmental control measures have made Europe a world leader in the field of environment, and examples abound to demonstrate how EU regulations have reinforced Denmark's environmental protection. With the adoption of the Amsterdam Treaty, sustainable development became an overall objective for the EU, and it became mandatory to integrate environmental considerations into EU sector policies. EU economic-political guidelines contain a special section on sustainable development.

Denmark has - primarily through the EU - advocated binding and effective controls of international environmental problems through regional and global environmental conventions. This applies to the conventions concerning biodiversity, climate and desertification, as well as to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and to conventions on chemicals, for instance the Stockholm Convention on Persistent Organic Pollutants and the IMO Convention on anti-fouling paint. Denmark has campaigned in favour of coordinating and enforcing the conventions efficiently and of giving the precautionary principle a pivotal role in the regulations.

Denmark has led the way to making means available for environmental initiatives in developing countries and Central and Eastern Europe. Denmark has achieved this partly by raising its official development assistance, with the primary objective of combating poverty in developing countries, and partly through the establishment of the Environment, Peace and Stability Fund (MIFRESTA) as a response to the 1992 Rio conference. Since 1993, MIFRESTA has spent considerable funds on environmental efforts in developing countries, Eastern Europe, and the Arctic. MIFRESTA also includes

activities for refugees and conflict prevention. Denmark is working actively to encourage the many countries - also EU countries - that provide less development assistance than the UN goal of 0.7 percent of GNI, to increase their contributions.

In Central and Eastern Europe, environmental assistance is targeted at solving urgent environmental problems and implementing the EU's environmental regulations in the candidate countries. Since the fall of the Berlin Wall, a wide range of concrete environmental projects have been realised that in many ways improve the environment in Denmark's neighbouring areas. In the developing countries, assistance to the poorest countries is targeted at alleviating poverty-associated pressure on nature and the environment. In the richer developing countries with increasing economic activity, assistance is aimed at helping countries to pro-

tect nature and the environment, primarily by strengthening the capacity of the countries themselves to solve the problems and by raising environmental awareness. In the Arctic regions, transboundary pollution is monitored as an indicator of regional and global pollution because the polar area is extremely environmentally fragile. Finally, a range of environmental projects is being implemented in Greenland.

Environmental assistance is primarily granted bilaterally - from Denmark directly to another country. However, Denmark also provides multilateral support through, for instance, the Global Environment Facility (GEF), the UN Environment Programme (UNEP) and the Multilateral Fund under the Montreal Protocol aimed at financing phasing-out ozone-depleting compounds by developing countries. Bilateral assistance under MIFRESTA has so far been provided to Central and Eastern Europe, the Arctic, and to a number of developing countries through separate schemes.

THE GLOBAL ENVIRONMENT FACILITY

At the Rio Conference on Environment and Development in 1992 agreement was reached to establish the Global Environment Facility (GEF). The GEF is the global financing mechanism particularly geared towards helping developing countries and Central and Eastern Europe to promote the global environment. The GEF supports:

- capacity building in developing countries and Central and Eastern Europe to provide greater capacity for implementing international environment agreements and contribute to meeting the global objectives in the agreements,
- projects in developing countries and Central and Eastern Europe by financing the extra costs necessary to ensure that national projects also advance global environment objectives. For instance in order to consider the preservation of an especially vulnerable ecosystem or by utilising more climate-friendly but more costly technology for electricity generation.

Since its launch, the GEF has channelled more than DKK 50 billion in financing towards protecting the global environment and attaining global sustainable development in projects totalling more than DKK 100 billion. GEF resources must increase in the coming years to help solve the significant environmental problems facing the world.

Denmark also supports the use of sustainable energy through trust-fund contributions to the World Bank and the Asian Development Bank. Through private sector development programmes involving Danish companies and companies in developing countries, Denmark contributes to promoting environmental improvement in companies. Denmark has granted significant support to building up effective environmental management in a range of countries. Danish development cooperation is primarily funded through official development assistance (DKK 12.6 billion in 2002). The overall ob-

jective is to promote sustainable development through poverty-oriented growth. Equal participation by women and men in the development process and consideration for the environment and democratisation are crucial in combating poverty and are therefore incorporated in all aspects of assistance. Denmark has thus designed its development policy to contribute to global sustainable development. As a result, Denmark has been awarded top marks in the OECD's periodic reviews of assistance, most recently in 1999.

In close and binding cooperation with the recipient countries, Denmark is contributing with significant support in areas relevant to sustainable development. Specifically, Denmark's activities address the issue of water, helping to secure millions of poor people access to water and working to protect water sources - for example by planting trees and by accumulating capacity for sustainable management. In the area of energy, Denmark supports sustainable energy supply in rural districts, where, for example, poor women receive help to plant firewood, providing them with an income while also protecting the environment. In the field of natural resources, Denmark is working to reinforce sustainable management and production to prevent the impoverishment of soil and desertification.

Denmark's contribution to sustainable development also includes considerable assistance to international organisations, not least the UN system; where all the countries of the world participate on an equal footing. In this context, Denmark is working actively for rationalisation of the UN to improve the distribution of work

between the organisations and avoid overlapping. In the field of the environment, Denmark is working to reinforce the Global Environment Facility financially and organisationally. Similarly, Denmark will continue its significant support to the UN Environment Programme, UNEP. Denmark is also striving to strengthen the UN Commission on Sustainable Development, the CSD.

Objectives and activities in the future

Denmark supports the overall objective of global sustainable development by:

- ensuring decoupling, i.e. breaking the link between economic growth, resource consumption and degradation of nature,
- integrating environmental considerations into policies and decisions,
- ensuring continuous progress in the global environmental agenda,

USER-ADMINISTERED FORESTRY IN CAMBODIA

A large part of the rural population in Cambodia supplement their incomes by using forest products in and around villages. Exploitation of forest products will continue and is expected to grow in step with population growth and fiercer competition for natural resources. At the moment there is limited access to using the forests, and local communities have no legal claim to forest products.

Denmark is supporting local user groups to get access to forest products and helping establish a legal framework to benefit local communities. Support includes developing procedures for user participation in monitoring sustainable administration of the resources. Members of the local communities are being trained in sustainable village-based forestry, including knowledge-building regarding regulations and legal conditions with regard to administration of forests. Danish support also includes research and collection of forest data which will be used in the preparation of new legislation.

- promoting economic cooperation and partnership for development, including combating global poverty and regulating trade and investment,
- contributing to international peace and stability and working to promote democracy and human rights,
- working towards continuous development and democratisation of international cooperation with the emphasis on openness and participation, including participation of the weakest groups,
- developing an environment policy that promotes realistic international cooperation on reducing pollution in the most cost-effective manner,
- promoting mutually binding partnerships with the private sector.

In the EU, Denmark will continue efforts to foster integration of environmental considerations into all policy areas with a view to achieving sustainable development. Denmark will strive to ensure that the EU Heads of State and Government assess the outcome of this work regularly.

At with the European Council in Gothenburg in June 2001, the Heads of State and Government adopted a long-term *Strategy for Sustainable Development*, setting up specific objectives for health and the environment. The Strategy recommends that the spring summits of the European Council address environmental sustainable development and social and economic sustainable development as an integrated part of the Lisbon process on employment, economic reform and social cohesion. The strategy primarily deals with policies within the EU. However, it is to be followed by a second phase dealing with the EU's global relations. The strategy will closely correspond to the targets in the EU Sixth Environment Action Programme. The Environment Action Programme sets the framework for EU environment policy and for the integration of environmental considerations into all policy areas for the next ten years. Denmark is striving to make environmental teaching about the environment and the development of greater environmental awareness - not least among the young - an aspect of EU work on sustainable development.

The EU will remain a pivot for Denmark's international environmental activities and work for sustainable development. In this connection, Denmark seeks to strengthen EU environmental regulation, one reason being that only a unified EU can achieve satisfactory results in negotiations with the other regions of the world. Therefore, EU cooperation will remain an integral part of Denmark's regional and global activities. *The Danish EU Presidency* in the autumn of 2002 will offer Denmark special opportunities for including high-priority goals on the agenda - not only within the EU but also in the broader international context in which the EU plays a part.

An important goal for Denmark is for *candidate countries* to be admitted to the EU without long transition periods. In addition to enabling considerable progress in health and the environment in the candidate countries, speedy and full accession will pave the way for economic progress and political stability in the region. By lifting the candidate countries to the environmental level of the current EU Member States, we will also strengthen the EU in international environmental negotiations.

Under the auspices of the OECD, Denmark has worked for sustainable development and the integration of environmental considerations. In May 2001, an OECD Ministerial Council Meeting on sustainable development was held in Paris, where ministers for the environment, economy and finance all participated. At the Meeting, the OECD countries adopted a strategy for sustainable development which establishes a framework for integration of economic, social and environmental objectives and for decoupling economic development from environmental impacts. The outcome of the Ministerial Council Meeting was that the OECD will develop sustainable development indicators to measure progress, and the indicators will be incorporated in the OECD's evaluation of member countries. Denmark will work actively to ensure that the OECD's work on sustainable development and the integration of environmental considerations is followed up.

Through its development cooperation and long-term binding partnerships with selected developing countries, Denmark helps combat poverty in

the world. The partnerships are aimed at enhancing the possibilities of the developing countries to create economically, socially and environmentally sustainable development processes that favour the poor. *Development assistance* also aids the environmental dimension of sustainable development by integrating environmental considerations into all aspects of development activities. Denmark supports the efforts of developing countries to consider the environment in their development processes by building up capacity among the authorities, among local associations, in civil society, and in the private sector. The activities must take into account the situation of developing countries, their needs and priorities, their abilities and capacity, and their economic and social development. Similarly any environment initiatives by other donors should be included.

In the *multilateral context*, Denmark will also continue calling on international associations to integrate environmental considerations into their development work. Finally, Denmark will ensure effective exploitation of opportunities for interaction between bilateral and multilateral initiatives. Environment assistance for the developing countries is explicitly targeted at ensuring environmentally sustainable use of natural resources and conservation of nature; at preventing and limiting air and water pollution and soil contamination; and at promoting sustainable energy use. Denmark shares an interest with the partnership countries in limiting global environmental problems and in supporting developing countries in their efforts to achieve greater wealth and welfare while also protecting the environment.

The Danish Government has prepared a new strategy that includes environmental assistance to Central and Eastern Europe in 2002-2003. The strategy implies that Danish efforts until the expected enlargement of the EU in 2004 are to concentrate on preparing candidate countries for accession to the EU, including assisting with developing the required administrative capacity and implementing the necessary environmental investments. Countries outside the group of applicants, primarily Russia, will also receive support. Following the expected EU enlargement, bilateral assistance to the new Member States will be replaced

by assistance through the European Structural Funds, etc. The main areas for environmental assistance up to 2004 will be water, waste, and the nuclear area, as well as institutional development. In future, as far as possible, Danish environmental support will be through "joint implementation" in close cooperation with the Central and Eastern European countries.

Denmark's environmental support for the *Arctic region* will allow us to continue monitoring the environmental impact on the area to provide documentation of developments in regional and global environmental impacts. In addition, Denmark supports the implementation of a range of concrete solutions to unresolved problems in the fields of nature and the environment in cooperation with the Greenland Home Rule. The overall objective is to limit pollution of the environment and ensure conservation of nature in the Arctic, including support for implementation of the international Arctic Environmental Protection Strategy, and help to ensure environmental sustainable development with special emphasis on sustainable utilisation of natural resources in the Arctic.

In Denmark's environmental assistance, attention will focus on a range of areas that promote sustainable development. One such area is the introduction of *cleaner technology* in energy production. This also applies to agricultural technology that improves the yield of agricultural land and reduces the utilisation of pesticides and inappropriate fertilisers, thus also reducing the need for agricultural land and protecting the biodiversity of vulnerable ecosystems. The assistance will also go towards bolstering activities aimed at persuading recipient countries to comply with international environmental agreements.

Denmark will continue working actively to ensure that regional and global environment conventions provide for an increasingly effective regulation of a range of international environmental problems. Denmark will speak in favour of employing effective mechanisms for negotiating, enforcing and financing international environmental agreements, so that developing and Central and Eastern European countries are in a better position to comply with the agreements. The flexible mechanisms un-

der the Kyoto Protocol form an essential part of the efforts targeted at ensuring that the goals for sustainable development are achieved more efficiently. A major challenge lies ahead in translating the Kyoto Protocol into effective provisions and ensuring its ratification and entry into force internationally. Together with the other EU countries, Denmark has ratified the Kyoto Protocol, before the World Summit on Sustainable Development in August-September 2002. Another Danish key issue calls for encouraging the international process towards sustainable production and use of chemicals by adopting a new initiative on mercury and other heavy metals.

In November 2001 the WTO Conference of Ministers in Doha ended with the adoption of a declaration whereby *a new round of negotiations* was to commence that, for the first time, will be based on a "Development Agenda". The Agenda covers commencement of negotiations on clarification of the relationship between WTO rules and the trade regulations in multilateral environment agreements as well as liberalisation of trade in environmental goods and services. Moreover there are to be negotiations on improving the background for WTO disciplines on fisheries subsidies so that their environmental effects are better taken into account.

In addition, agreement was reached in Doha to prepare for the next WTO Conference of Ministers in 2003 to decide on whether to enter into substantive negotiations; on the effects of environmental provisions on developing countries' access to markets in industrialised countries; on liberalisation of trade for simultaneous benefit to trade, environment and development; on environmental provisions in the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights; and on eco-labelling provisions.

In all the above environmental areas, ministers decided that particular consideration should be given to the needs of developing countries. Similarly, ministers committed themselves to aiming at granting the least developed countries duty and quota free access to markets. The EU decision from February 2001 on granting duty and quota free access to EU markets for all products, with the exception of weapons and ammunition, from

the least developed countries represents a significant step in this direction.

In the ongoing WTO negotiations we should make sure that trade plays a full and efficient role in fostering sustainable development. The negotiations should ensure that developing countries - especially the least developed countries - will be able to take full advantage of the liberalisation of trade, and that international trade policy and international environment policy are mutually supportive.

During the round of negotiations due to end in early 2005, Denmark will work for effective global efforts to promote sustainable development for the benefit of all parties, not least developing countries.

Special allowance should be made for trade-related problems shared by indigenous peoples/populations that depend on the sustainable exploitation of marine or other natural resources.

The World Summit on Sustainable Development in South Africa in 2002 offers another opportunity for placing sustainable development high on the international political agenda. Denmark will play a central role and hold a major responsibility at the World Summit which is to be held in August-September 2002 during the Danish EU Presidency.

Denmark will work actively to involve business and *the civil society* in the preparations for the World Summit through close cooperation with NGOs and trade and industry in Denmark, and by supporting involvement of NGOs from developing countries. It is also hoped that the Summit will bring about the launch of initiatives to strengthen public access to environmental information and participation in accordance with Principle 10 of the Rio Declaration from 1992.

The Government is striving, in accordance with the resolution of the Folketing (Danish Parliament), to ensure that the World Summit results in a *global deal* on sustainable development and a global partnership. The agreement should be based on common, but differentiated responsibilities and must:

- contain specific concessions by the rich part of the world in the form of *decoupling* economic growth from environmental impact and increased resource consumption - not least in the areas of energy, waste, use of chemicals, and biodiversity;
- accommodate the *need of developing countries for growth* and poverty reduction, maintain objectives on development assistance, increase market access for the products of the poorest countries in particular, include debt relief, and lead to increased investments in and the transfer of sustainable technology,
- lead to a strengthening of the *global organisation* of sustainable development and of public access to information and participation in environmental matters
- involve implementation by all countries of multilateral *environmental agreements*; and
- ensure that *trade policy* as a result of the WTO's ongoing round of negotiations to a higher extent involves and respects considerations concerning the environment and sustainable development.

These objectives will also be incorporated in preparations for the next meeting of the "Environment for Europe process" in Kiev in 2003, and in this connection, in efforts to achieve a "Regional Deal". The Government places priority on the agreement ensuring that poor countries are assisted in their endeavours to embark on sustainable development, and that they are committed to introducing society models built on freedom, democracy, and respect for human rights.

9

Food production

– food safety, agriculture
and fisheries



Foto: Ole Steen

Denmark's objective for food production is to ensure that the food produced and sold to consumers is healthy and of high quality and that the level of information on food is high. Production methods that preserve the resource basis of the agricultural and fisheries sectors and secure the environment, nature, animal welfare and good working conditions must be promoted. Simultaneously, cost-effective production and marketing should be promoted in the food-producing sectors.

Sustainable development of food production requires the right legislative framework, visionary utilisation and development of technological possibilities, and constructive interplay between the authorities, industry, and the public.

The development of Denmark's food production is characterised by fewer, bigger and more efficient producers. This development has greatly improved efficiency, bringing prices down to levels that have cut the proportion of total private consumption spent on food from about 35 per cent to about 10 per cent over the last fifty years. Within the field of food, Denmark does significant volumes of trade with other countries. Imports are on the rise while Denmark is - per capita - the largest net exporter of food in the world. Food production is very important to the Danish economy in relation to jobs and export earnings.

The production methods in the food industry are of great significance for food safety and impacts on the environment and nature. Healthy and safe food is important for improving people's health and preventing illness. Healthy food and sustainable management of our natural and environmental resources requires that legislation provides a framework for production methods, that technological possibilities are used and developed, and that constructive cooperation is established between the authorities, the industry, and consumers. This is the only viable method for avoiding food that contains, for example, salmonella, dioxin or pesticide residues. The legislative framework also covers requirements limiting the impact of food production on the environment and nature. For example, runoffs of pesticides and nutri-

ents from agriculture to the aquatic environment and unintentional by-catches and discards from the fisheries sector.

Finally, international conditions are crucial for food production. Within the EU, the provisions in the Cardiff Process on integrating environmental considerations in all sector policies, and the provisions in the Amsterdam Treaty on sustainable development are highly significant for the Common Agricultural Policy and the Common Fisheries Policy. Denmark participates actively in this work. In general, there should be more integration of environmental and nature considerations in agriculture and horticulture in order to promote the environmental and nature effects of agricultural schemes. At the same time, the level of subsidies to agriculture should be reduced.

There are several examples of the fact that problems with the environment and food safety are trans-national. BSE and dioxin are examples of this. International commitment is needed if solutions are to be found. The EU controls many aspects of production by harmonising regulation, and goals within environmental and nature policy are set up within the EU and globally. The EU must be better at solving cross-border problems. In the EU, the accession of new Central and Eastern European countries will influence food, agricultural and fisheries policies in the future. The

forthcoming WTO negotiations will lead to needs for further reforms of the Common Agricultural Policy in order to ensure uninhibited global trade on food.

Objectives and activities in the future

Sustainable food production requires balanced interaction between producers, processors, retailers, consumers, and the authorities. The Danish Government will ensure sustainable development by regularly updating environmental initiatives so that future generations can also live in a clean environment. As a starting point, impacts should never exceed the level critical to nature and the environment.

Healthy, high quality food must be ensured, for example through a long-term strategy for the improvement of animal welfare, clear guidelines on control of food, and clearer and comprehensible labelling of products.

These goals will be achieved through prioritised initiatives and using in the most cost-effective methods.

9.1. Food safety

Consumers have the right to safe food. In situations where science finds cause for suspicion, but where a scientific basis for validating or invalidating that suspicion is insufficient, the Government considers it important to base assessments on safety and risks related to foods on the precautionary principle.

Food safety is an important parameter in competition between producers in the market, both nationally and internationally. Confidence in the regulations and control benefits the industry and is a prerequisite for further development. Internationally, there is great focus on food safety. In January 2000, the Commission presented a white paper on future policy to promote food safety in the EU. The Danish Government agrees with the Commission that an important goal is to reestablish and maintain consumer confidence in legislation and control of food.

Clear and unambiguous rules, understandable by producers, control authorities, and consumers are required for a high degree of food safety. Working

towards a high degree of food safety has a high priority, and work to simplify and modernise the regulations will continue over the next few years.

Simple rules provide clarity about requirements and responsibilities for producers and the authorities. Clear responsibilities provide a basis for introduction by producers of their own control and check procedures, and organisation by the authorities of effective and targeted inspection and control initiatives.

Self inspection and control must ensure that an enterprise's procedures regarding control of production, etc. work properly. Similarly, public control and inspection, and guidance for enterprises include prevention as an important element in self inspection and control. There is an increasing need for documentation and traceability of the individual raw materials, partly to assist in clarification work when defective goods are distributed, and partly because a number of parameters cannot be measured through analyses, but must be checked by, for example inspecting paperwork. As a result of this, there are increasing requirements for these measures to be included in enterprises' own control procedures.

Full openness on the regulations and control are also required to maintain consumer confidence that both food producers and the authorities are meeting their responsibilities.

The Government attaches great emphasis to the debate on food policy. This is the only way of making politically lasting decisions that benefit the population and the food-producing sectors.

Objectives and activities in the future

A crucial objective is to achieve an *unconditional high level of food safety* by continuing the fight against diseases caused by food. Denmark needs very efficient controls of chemical pollution and undesirable residues, and food manufacturers must assume unequivocal responsibility for the safety of their food products.

In the EU, Denmark will advocate that the control of pesticide residues in food be based on the *precautionary principle*, so that any doubts about unacceptable environmental and health risks will

yield to the consumers' advantage.

The Government's aim is to reduce *the use of additives* as much as possible. In the EU, the Danish Government is recommending that additives be allowed only if they pose no health hazard, if their use does not mislead consumers, and if additives constitute a technological need.

Furthermore, Denmark is still working to amend EU regulations on the additives nitrites, nitrates and sulphites. This effort focuses on Denmark's case at the European Court of Justice against the EU Commission and on the negotiations on an amendment to the directive on food additives other than colours and sweeteners.

Denmark must launch a conscious consumer policy for the food industry through the implementation of clear regulations, targeted control, and openness and transparency in relation to regulations and control. Results from control activities must be made available to consumers in a comprehensive and accessible form.

In addition, the conscious *consumer policy* for the food industry should comprise improved labelling regulations, protection against deception and better general information.

Consumers need comprehensive information so that they can make qualified and fair choices between different products, as well as reject food that has been subject to a specific treatment or process, or select food on the basis of organic, ethical, nutritional, quality, or animal-welfare principles.

Rules regarding labelling of food are laid down within the framework of the EU cooperation, and the Danish Government will work for:

- requirements for full labelling of ingredients,
- revision of the rules on quantitative labelling as the Government believes that consumers want more detailed quantitative labelling than required by the EU rules,
- enhancement of labelling rules regarding the origin of food in the same way as currently required for beef and fish,
- compulsory labelling on goods of the production and packaging date,
- compulsory labelling of nutrition information so

that consumers can see fat, protein and carbohydrate contents,

- a list of allergenic compounds to be included on labels if they are contained in a product,
- better labelling of aromatics in food so that consumers are not misled regarding the nature of an additive and the reason for an additive.

Information in labelling is particularly important with regard to food which has been subject to a specific treatment or process. This may include genetically modified food (GM) and other new foods, as well as products for special and often exposed groups of people. Problems related to health labelling, misinformation, and the dangers of exploitation of anxieties are particularly relevant.

An efficient effort in the *nutrition field* is the goal to improve the population's health and prevent illnesses. Some illnesses arise because of better living conditions. The health costs of obesity, smoking and lack of exercise are clear. For example, the incidences of cardiovascular disease, allergies, type 2 diabetes, and osteoporosis are increasing. Common for all these illnesses is that a large proportion of the Danish population can be affected. This is why the Government is launching special strategy plans for these illnesses.

Food safety for animal products begins with safe animal feed. The *animal feed area* is to be controlled more efficiently, and openness concerning the content of animal feed mixtures must be a requirement. The Danish Government supports the current EU initiatives for animal feeds and want to see tighter rules for additives in feed. The Government will advocate a faster adoption of stricter EU regulations on animal feed control and requirements for labelling of animal feed containing genetically modified organisms.

The position of the food sector must be consolidated by further *innovation, research, dissemination of knowledge, product development and corporate flexibility*. As a consequence, Denmark must provide optimal opportunities for exploiting research results in the area. As part of the Government's overall growth strategy, "Determined Growth", it will initiate an analysis of innovative possibilities to promote growth in all parts of the food sector.

In the spring of 2001, the *Danish Innovation Act for the food sector* came into force. The Act prioritises a range of specific areas that have gained greater importance in society in recent years. Safeguarding the environment and the resource base will join food safety, traceability, organic farming and animal welfare as significant key fields of action. One objective of the act is to subsidise and thus promote enterprising projects in the prioritised areas. Thus, the Act will constitute a major tool in efforts targeted at ensuring environmentally sustainable and competitive food production.

In an international context, Denmark will safeguard its interests by upholding the requirements for a high level of *food safety, environmental protection and animal welfare* in the EU, the WTO and other influential forums. At the same time, Denmark will maintain the demand for liberalisation of trade in food products; i.e. the removal of trade barriers coupled with the phasing out and removal of subsidies distorting competition.

9.2. Agriculture

Agricultural production must contribute to sustainable development and life in rural areas. This means clean water, soil, and air must be ensured. At the same time terrestrial and marine biodiversity must be ensured. Agricultural development must be a balanced interplay between the environment, nature, and the local community. Technological opportunities should be exploited and developed. Finally, agricultural plant and animal genetic resources must be preserved.

About 66 per cent of the area of Denmark is used for agriculture, and agricultural production thus influences nature and the environment to a high degree. Agricultural areas are important to the population because they carry cultural-historical values and the opportunities for enjoyment of landscape and nature.

Since the 1992 Rio Conference, the Government has implemented a range of measures to ensure that agricultural production takes nature and the environment into consideration. Some of the benchmarks in these activities were detailed in the 1994 ten-point program for clean water, Action

Plans I and II to promote organic food production from 1995 and 1999, the Action Plan for the Aquatic Environment II from 1998 and the Pesticides Reduction Action Plans I and II from 1986 and 2000. The objective of the 1986 Pesticides Reduction Plan I was to halve the total use of pesticides and to encourage the use of less hazardous compounds.

Since 1994, over 200 pesticides associated with unacceptable risks to human health, the environment or groundwater have been banned. It has been sufficient to limit the use of certain pesticides. Also in the future, pesticides threatening groundwater will be completely prohibited. In 1999, the Danish Bichel Committee presented economic analyses showing that the use of pesticides can be lowered by 30-40 per cent within a period of 5 to 10 years without significant costs to the agricultural sector. The cost of reducing pesticide use by 80 per cent and a complete ban were also analysed.

The 1998 Action Plan for the Aquatic Environment II aims to ensure the original objectives of the first Action Plan for the Aquatic Environment from 1987, i.e. to reduce nitrogen runoffs from agriculture and horticulture by 100,000 tonnes of nitrogen annually by 2003. After the mid-term evaluation, adjustments were made to the plan to ensure that the objectives could be met. In meeting the objectives, Denmark will also fulfil the EU Nitrate Directive, due to be implemented no later than 2003. The tools include a detailed regulation of agricultural fertiliser handling coupled with increased afforestation, the use of environmentally friendly production methods and the reestablishment of wetlands, which serve a dual purpose: to improve nature and limit nitrogen runoffs. Denmark is one of the few EU countries to have achieved Commission approval of its national action programmes implementing the Nitrate Directive.

With full implementation of the Second Action Plan for the Aquatic Environment, Denmark expects to fulfil its international obligations regarding reductions of ammonia evaporation, cf. the EU Acidification Strategy and the Geneva Convention on cross-border air pollution. In the near future,

the Government will commence a number of initiatives to reduce further ammonia evaporation from agriculture.

To some extent, the agricultural efficiency improvements have, until the end of the 1980s, come about through increasing the use of pesticides and nutrients. Since the early 1990s, however, effectiveness has taken place at the same time as a drop in the consumption of pesticides and fertilizers. Runoffs of nitrogen fell by 32 per cent from 1990-1999 and phosphor surpluses on fields have fallen by over 30 per cent since 1985. The scale and intensity of farming leave limited room for diversity in animal and plant life, also affecting flora and fauna in streams, lakes and small biotopes. Despite great efforts from enterprises and authorities, biodiversity has suffered a setback. Thus, the scope of environmental, natural and health effects needs further study and research and there is a need for technological innovations that support an agricultural production which is more friendly towards nature and the environment.

Structural developments and concentration of production demonstrate how specialisation and economies of scale have enhanced efficiency. In 1970 Denmark had about 140,000 farms, while in 2000 the figure was 52,700. About 90 per cent of agricultural production comes from approximately 23,400 full-time farms.

Sustainable agricultural production poses a range of dilemmas. At the same time as taking account of profitable production, the environment, biodiversity, health and safety, animal welfare, landscape values and rural development must also be considered. These concerns may well be conflicting. In cooperation with the industry, development must be ensured that, as far as possible, unites these considerations in a cost-effective manner for the individual farmer and for society as a whole.

Objectives and activities in the future

In the view of the Danish Government, it is imperative for continued economic growth to occur without a corresponding growth in environmental impact and *in harmony with nature and the environment*. Initiatives for sustainable agricultural production will be developed, based on objectives

for food safety, animal welfare, the environment, nature, and life in rural districts. In this connection, all relevant factors to the long-term development of a sustainable food and agricultural policy will be involved in accordance with future consumers' needs and social priorities in relation to the economy, welfare, the environment, and nature. Environmental and nature goals will be achieved in the most cost-effective way. *The polluter-pays principle* is one means of promoting cleaner production and products on reasonable, competitive terms.

The Government will continue its efforts to achieve sustainable production through the following specific objectives and activities:

The basis for economically, socially and environmentally sustainable rural districts must be ensured. The Government wants to support development that can maintain and develop agriculture and promote varied and differentiated life in rural districts. Agriculture can no longer be the only basis for varied social, and economic life in rural districts. The Government will therefore make the rules for use and extension of redundant agricultural buildings more flexible. The Government also wants to allow the owners of agricultural property better opportunities to erect housing as part of a generation change or for the use of employees. Furthermore, the Government wants to allow better opportunities to erect slurry containers on fields. Such development must be in harmony with the surrounding local community. The Government will therefore introduce new rules on information for neighbours before issuing permits to build in rural zones.

Agriculture has an increasingly multifunctional role in rural areas. The Government will strive to adapt the EU subsidy schemes, including schemes under the Rural Development Programme, to a more holistic approach, that supports sustainable development. These initiatives are to relieve generation changes and promote nature and environment considerations, food safety, health and safety at work, the cultural environment, animal welfare, regional development, and rural employment. Subsidy schemes not supporting these objectives must be phased out.

Regulation of agricultural environmental impacts from nutrients is a central element in the Government's efforts to secure a clean environment for future generations. Agricultural loss of *nitrate*, *phosphorus* and *ammonia* must therefore be brought down to a level that represents no nuisance to people, that safeguards the aquatic environment and vulnerable types of nature, and that promotes a rich animal and plant life. The Action Plan for the Aquatic Environment II, which has been evaluated at midterm in December 2000, is expected to ensure that agricultural nitrogen runoffs are reduced by 100,000 tonnes annually before the end of 2003. Focus areas are divided into area-related activities, improved feed utilisation and fertiliser-related activity areas.

The Government will invite parliamentary parties to negotiate an Action Plan on the Aquatic Environment III (VMP III). The Action Plan on the Aquatic Environment III will outline the framework for agricultural production in harmony with nature and the environment. The plan will contain an overall approach to reducing agricultural discharges of nutrients, and it will simplify and make more effective regulation of agricultural impacts on the environment. In preparation for the Action Plan for the Aquatic Environment III, and as the basis for continued efforts to limit agricultural environmental impacts, Denmark will launch activities which will not only focus on nitrogen, but also on the possibilities of limiting agricultural phosphorus emissions and discharges. This will involve an assessment of the economic and environmental effectiveness of current measures.

The aquatic environment will also be the pivotal point when the EU Water Framework Directive is due to be implemented in Danish legislation no later than December 2003. Regional protection of the aquatic environment will be enhanced as part of the implementation of the Water Framework Directive by establishing environmental goals for surface water and the groundwater. A basis will also be developed to enable preparation of regional programmes which can establish more targeted requirements for agriculture in the uplands near wetlands where environmental goals are not being met. These programmes will assess general anthropogenic impacts and establish the relative effect of

agriculture. The Water Framework Directive is further discussed in chapter 6, Environment and Health.

Loss of ammonia was reduced by 33 per cent in the course of the 1990s. However, concerns for nature, the environment, and odour nuisance mean that there remains a need to reduce agricultural emissions of *ammonia* and *greenhouse gases into the air*. This will happen on the basis of, amongst other things, the climate strategy, Climate 2012, and implementation of a number of initiatives to further reduce ammonia evaporation from agriculture.

Agricultural pressure on the environment and nature varies from area to area as a consequence of the different types of agricultural production and the varying natural basis. In the coming years, *livestock farming* must be evaluated locally and regionally in the context of the sensitivity of nature and the environment.

Many consumers demand organic food and the Danish organic sector is one of the largest in Europe. As part of sustainable food production, the Government wants to see further development of the organic sector on the basis of consumer demand and common EU rules. An important part of this development will be the possibility to strengthen sales of Danish organic products in export markets. It is important that export initiatives are secured with stakeholders well versed in production and sale of organic produce. The Organic Food Council has therefore been encouraged to prepare an export strategy. The Council has accepted the challenge and will deliver the strategy at the end of June 2002.

The use of *pesticides* can be reduced and still allow a profitable operation. The Government is hopeful that pesticide use can be minimised within the next few years. The Pesticides Reduction Plan II calls for application frequency on fields of less than two before the end of 2002. In 2000, application frequency was two as a result of constructive interplay between the industry and the authorities. After 2002, a new objective will be established to reduce application frequency even further. Denmark's long-term goal is to develop cultivation

strategies that reduce the agricultural sector's dependency on pesticides enabling their use to be phased out to the widest extent possible. Internationally, the Government wishes to focus on over-use of pesticides, and pesticides will undergo restrictive assessments, both nationally and internationally out of considerations for the environment, nature and public health.

Agriculture and the individual farmer have an important role to play in *nature management*. Nature must be protected and *biodiversity* ensured. Vulnerable types of nature and nature in agricultural land must be protected through the preservation, re-establishment and strengthening of meadows and dry grassland as well as small biotopes such as water holes and hedgerows. Dispersion corridors in the open country must also be safeguarded, since they improve the conditions for wild animals and plants. More extensive cooperation between farmers, consultants, and the authorities, as well as voluntary agreements on environmentally friendly agricultural production, including green accounting, are important instruments in this connection. In order to expand the nature aspect in operations, dissemination of nature plans in agriculture will be promoted, and the nature and environment content in the education and training of farmers will be considered. Please see chapter 5, Biodiversity.

Cleaner technology must be developed and used. This provides development opportunities for the industry and also limits impacts on nature and the environment. For primary agriculture, a special analysis will be carried out of the opportunities for promoting growth and development.

Development, maintenance, and expansion of internationally competitive food research requires continual concentration on innovation and research with strategic relevance for Denmark's future leading position within the food sector. FØTEK - The Danish Research and Development Programme for Food Technology will promote research projects with commercial perspectives that are carried out in cooperation with agricultural operations, enterprises, sector organisations, and research institutions. The objective is to contribute to developing the position of the Danish food in-

dustry in export markets and the possibilities for the industry to increase growth through adaptation to market demands, including consideration of environmental sustainability in production.

Biotechnology involves both opportunity and risk. The approval of *genetically modified organisms* (GMOs) should be assessed on the basis of concrete environmental, health and agricultural assessments governed by the precautionary principle in all respects. Furthermore, the assessment can involve ethical aspects. When gene technology is used, the consumer must be informed through product labelling. Commercial cultivation of GMO crops in Denmark can become a reality when approval procedures for marketing GMO plants are resumed. Utilisation of GMO crops must be carried out in co-existence with existing types of production and cultivation. Therefore, the Government will prepare a national strategy for cultivation of conventional, organic, and GMO crops. Amongst other things, the strategy will outline measures to ensure coexistence and regulation possibilities.

The *genetic resources* of agriculture must be preserved both nationally and globally. Modern agriculture has rendered a relatively small number of breeds and species dominant in each of the individual livestock groups and plant types. The Government will expand the existing livestock gene bank and draw up a national strategy plan for agricultural plant-genetic resources. In 2002, the Danish Government will sign the FAO International Treaty on Plant Genetic Resources for Food and Agriculture. The Treaty lays down a global framework for sustainable preservation of plant genetic resources for food and agriculture.

Denmark will work to change *EU agricultural policy* towards a more market-oriented direction in the midterm evaluation in 2002/2003 and with the expiry of Agenda 2000 in 2006. Agricultural subsidies must be gradually phased out. On the other hand, domestic costs must be reduced. Moreover, there must be efforts to ensure that budgets for EU agricultural policy increasingly reflect Danish priorities on the transfer of budget funds from direct support to initiatives in rural districts, including for environmental and nature

purposes, and food safety. This will create the foundations for sustainable development of rural districts and improvements in food safety, animal welfare, nature, and the environment.

The above focus areas, concerning the requirements for sustainable agricultural production, are part of the Government's objectives, both nationally and at EU level.

9.3. Fisheries

The fisheries sector depends on fish stocks remaining a renewable natural resource. Sustainable fishing that safeguards marine fish populations and ecosystems will also contribute to the sector's future development. The highest possible level of knowledge about fisheries and other pressures on marine resources is crucial to ensure sustainable management of fisheries and to be able to gain sufficient and healthy food from the ocean.

Fish stocks, fishermen's access to them, and other environmental impacts on the marine ecosystem are essentially cross-border. Most of the Danish fisheries sector and its access to fish populations depends not only on Danish efforts for sustainable

exploitation of living marine resources, but also on those of other countries. Consequently, an effective policy should be based on targeted international cooperation.

Based on, amongst other things, the 1992 Rio Conference, a significant element of the Danish Government's policy has been to maintain and develop the environmental profile of the EU's own fisheries policy as well as of relations to other countries and international organisations. An improved basis for the annual EU decisions on the total allowable catches (TAC) remains a key aspect of these activities. The advice of marine biologists plays a crucial role, and the precautionary principle governs the guidance which has been extended to comprise all the stocks essential to fisheries.

A range of international agreements, including the conclusion of the North Sea ministers' interministerial meeting on fisheries and the environment (the Bergen Declaration 1997), conclude, that activities must be targeted, nationally and in the EU Common Fisheries Policy, to increase the integration between fisheries and the environment by applying an ecosystem approach including, for instance, the development of a multi-species approach as the first step. Additionally, the regulation of fisheries must to a greater extent be governed by the precautionary principle as defined by the International Council for the Exploration of the Sea in 1998. The EU Council of Ministers first applied the principle in 1999 in establishing the quotas for a number of stocks. The European Commission confirmed the prioritisation of the measures in the Green Paper on the Future Common Fisheries Policy, and this was further endorsed when the Council of Ministers integrated (April 2001) environmental considerations and sustainable development into the Common Fisheries Policy. Both aspects are part of the revision of the Common Fisheries Policy in 2002.

BY-CATCHES OF HARBOUR PORPOISE

In 2000, the use of acoustic deterrents - "pingers" - in parts of the commercial Danish net fisheries in the North Sea first became mandatory, to prevent harbour porpoise from being caught in nets. Pingers represent an efficient solution, but research is still needed into the way in which continued use will affect the harbour porpoises and the marine environment.

Activities also focus on development of net types that harbour porpoise can detect and avoid. The activities enter into the Action Plan for reduction of unintended by-catches of harbour porpoise, adopted in 1998 by the Minister for Food, Agriculture and Fisheries and the Minister for Environment and Energy.

The work on reducing by-catches of harbour porpoise must be followed-up in other Danish waters. International research cooperation should procure new knowledge on the size and dispersion of harbour porpoise populations.

As part of the national implementation of fisheries policy, several initiatives aimed at fisheries activities have been launched or expanded. To lower the pressure from fishing, measures have been implemented to limit where and when fishing can be performed and with which types of tackle and engine power. A ban on the discard of commercial catches that can be landed legally has been introduced. Finally, the total capacity of the Danish fisheries fleet has been reduced significantly, which has made fisheries more profitable for the remaining fishermen in the sector. The Government finds it important that capacity is continuously adapted.

Some of the main challenges we face are the very heavy fisheries pressure to which many economically important fish stocks are constantly subjected and the overfishing of several of the stocks central to Denmark's fisheries sector. This is why fisheries activities should be limited as soon as possible and adjusted to the volume that the fish stocks can sustain. Fish discards must be limited further, and in some types of fisheries, unintentional by-catches - including of harbour porpoise - are too high.

Understanding of the marine ecological balance is still incomplete, also in terms of the many man-made factors compared to the natural factors impacting the development of fish resources. Such factors comprise pollution, climate change, activities related to oil exploration, etc. In some instances, pollution has impacted the food safety of fish.

Finally, the aquaculture sector offers potential for development that should be exploited on the condition that the necessary environmental considerations are taken into account.

Objectives and activities in the future

In the coming years, the Government will continue its work to promote the *integration of environmental and sustainability considerations* in the fisheries sector, nationally, in the EU, and internationally. In this connection, importance is attached to following up regional agreements and action plans in the Baltic Sea and the North Sea aimed at making fisheries more sustainable. The establishment of an efficient partnership charged with restoring the North Sea cod stocks is one specific goal.

In 2001, the Danish Parliament adopted (V 117) a range of *central objectives* for the development of a national fisheries policy in the years to come. One objective calls for the modernisation, renewal and simultaneous reduction of the fisheries fleet. The objective is to ensure a long-term, stable and sustainable fisheries sector in relation to the fisheries possibilities and a continued local fisheries sector with a wide geographic basis. Within this framework, adjustments to the national management of fisheries quotas will be realised, one aim is to develop coastal fisheries and promote the quality of landings. In relation to the activities aimed at fisheries, the Government will give high priority to developing selective and gentle fisheries tackle, so that unintended by-catches and undesired pressure on the sea bed, its natural animal and plant life, and the overall ecosystem can more easily be avoided.

Research and data collection are to enhance the understanding of marine ecosystems and their interrelationship with human impacts. Enhanced knowledge about these matters should help improve the decision-making basis for advisory services and ensure sustainability in fisheries management. Activities are also targeted at establishing a superior knowledge base that will enable us to better target our relevant nature protection considerations in relation to fish management in marine areas.

Under the Ministry for Food, Agriculture and Fisheries a committee on environmental impact and fisheries resources has been set up. Before October 2002, the Committee is to report on man-made and natural factors other than fishing that impact the conditions and development of fish stocks, or that impact fish as a food reserve.

To ensure sustainable development in the *aquaculture sector*, two committees on inland fish farms and marine farms, respectively, have been set up. The committees are expected to make proposals for promoting continued exploitation of the production potential in the aquaculture sector, having in mind the minimisation of the environmental impact.



Foto: Morten Langkilde

10 Forestry

Forests and woodland areas should be used and managed in such a way as to allow them to play a part in fulfilling Denmark's nature, environmental, financial, and social needs, now and in the future. We should bolster the role of forests as one of society's welfare assets. Forests should provide opportunities for outdoor activities, protect biodiversity and contribute to a varying landscape. Forests should produce wood products and help protect the environment, including both the groundwater and through absorption of CO₂.

Previously, forests were primarily meant to produce wood and serve as shelter. Today, they play multiple roles for our welfare - especially in terms of recreation. Danish forestry policy must be based on sustainability and multiple roles, and it is in line with the concept of sustainability which, since Rio, has become the cornerstone of day-to-day forestry – both internationally and nationally and on the individual property.

Ensuring sustainable forestry, based on near-natural management and natural processes, presents a central challenge. This will lead to more sustainable forests based on tree species adapted to the

location (particularly domestic species) and increased continuity in the forest cover. There will be more space for nature, and the forests will be able to adapt more easily to an uncertain future, for example with regard to climate change, social developments, etc.

The long-term perspectives of forestry call for persistence and continuity in forest management. These are very difficult goals, as coniferous tree production is dominant in Denmark, and large volumes of coniferous trees from our neighbouring countries put pressure on prices.

Objectives and activities in the future

The policy for new and old forests will be specified in a new *National Forest Programme*, expected to be finalised in 2002 after public hearing in the spring. The Programme will constitute an overall plan, presenting concrete objectives and means. The Programme will build on a comprehensive technical foundation, and objectives will be laid down in close dialogue with parties involved in forestry. The basic elements of the forest policy are outlined below.

The forested area of Denmark must be increased so forest landscapes cover 20 - 25 percent of the Danish area in the course of one tree generation (80-100 years). Work should aim at having nature and biological diversity as the primary operational objective in 10% of the total forest area.

The new forested areas should meet our needs for diversified forests. Urban forests give more opportunities for outdoor recreation, and forests protect water catchment areas and lend character to the landscape. New forests can create the framework for biodiversity and ensure cohesion between existing nature and forest areas in open country. The forest programme is to ensure that all these targets are met. One special objective calls for the replanting of 15,000 hectares of healthy, resilient forests to replace the fallen trees that occurred in the storm of 1999. This objective is now within reach through subsidies under the "windfall scheme" to restore forests, and coupling with a new insurance scheme against losses incurred in future storms.

SUSTAINABLE FORESTRY

A new set of guidelines for sustainable forestry at property level serves as a topical example of how Denmark is operationalising the concept of sustainability. The Danish Forest and Nature Agency and eighteen stakeholder associations have jointly established thirteen voluntary operational principles. The principles aim at forestry that supports nature's ecosystems, while also making allowances for and combining a range of social, ecological and economic considerations.

The Government will promote *near to nature and environmentally friendly forest management* and protect the natural assets in forests. This entails more deciduous trees and more mixed stands. Adaptation to locations, in particular, domestic species will become more visible in Danish forests.

For environmental reasons, the use of pesticides will be phased out in state forests, and be limited in private forests through knowledge development and information. At the same time, the ability of forests to protect the environment should be better promoted and exploited. This applies in particular to protection of the groundwater, and storage of CO₂ in trees and soil as part of fulfilling Denmark's commitments under the Kyoto Protocol.

Through a legislative revision, the Government will ensure more flexible forestry legislation allowing forest administration a greater degree of freedom to work with near-natural forestry and also ensuring continued area utilisation for forests and forest resources. The framework for the amendment to the Forestry Act will be outlined in the National Forestry Programme.

Dialogue, confidence, information, guidance, and voluntary agreements are key aspects of the future forestry policy. The Danish Government wants to promote the development of the forestry industry on the basis of voluntary agreements and confidence in the individual, thus allowing room for both nature and economic considerations. This places great demands on knowledge building and dissemination.

The Government will promote voluntary environmental certification for forests as a tool in this

connection so that sustainable forestry can complement enhanced marketing.

The population should be more involved in decisions concerning forests. This could be through public debate about forestry policy, and with regard to state forests through the user councils in the state forest districts. The importance of forests to outdoor recreation should also be emphasised and developed.

The forestry sector must enhance its earning capacity. High-quality forestry and wood products must constantly be developed, with seed and plant material suited to the location. The Government will support a stable, market-oriented basis for supplying wood chip for energy purposes. It is important to provide information about the consideration rendered to nature and the environment in Danish forestry production. Increased use of wood and wood products may reduce the consumption of more environmentally harmful raw materials and contribute to financing the forest as a welfare benefit. A more liberal framework for forestry through more flexible forestry legislation is expected to promote forest administrators' opportunities to manage their finances.

Targeted research and an improved data situation are important ancillary tools for forest-related activities. Forest research should improve our knowledge of sustainable forestry methods. The health of forests is already monitored, and in 2002 a more extensive nationwide forest monitoring programme was initiated that will also provide a number of data about the nature content in forests, CO₂ absorption ("sink" properties) and other environmental and social services.

Denmark will continue its efforts aimed at gradually more binding *international cooperation* on forests through international agreements and conventions. Denmark will follow up international agreements, promote sustainable forestry and make experience gained available to others. Danish environment and development assistance should assist recipient countries in implementing international conventions, agreements and recommendations on nature and forests. Furthermore, we must make sure that in our use of imported wood, we favour the products that are produced sustainably and legally. This goal is to be accomplished by, among other things, reinforcing measures on certification.



Foto: Kim Nielsen

11

Industry, trade and services

Initiatives for a sustainable society and initiatives for future welfare must go hand in hand. Funding the welfare society of the future will require that private production will grow and create more wealth. Sustainable development requires that production and consumption is developed so that resource consumption is optimised and adverse environmental and health effects are reduced appreciably. We can achieve this reduction by making it attractive to incorporate environmental considerations not only into company business procedures, but also into every link of the chain from production to consumption and disposal. Companies are playing a key role in bolstering the utilisation and development of environmentally friendly technologies.

Authorities, businesses and consumers have a common interest in working together to create a market where consideration of the environment is central for competition between enterprises, and for consumption of goods and services. Combined with new market-based instruments and voluntary initiatives, market forces will motivate the corporate sector and consumers to participate actively in this development. Regulations in the EU and in Denmark will continue to make up part of the foundation for enterprises' environmental initiatives.

Another objective of the Government is that Danish enterprises and investors can easily document their environmental initiatives and that consumers are allowed easy access to information on environmental impacts from manufacturing processes.

One of the greatest challenges of the 21st century will be to decouple economic growth from environmental impacts. To minimise the adverse environmental effects of production and consumption systematically, we must ensure that companies consider the environment in making their day-to-day decisions. Production, recycling and disposal must develop through advances in environmentally friendly technology, innovation and competence building. Research and development of more environmentally friendly technologies must be strengthened through improved cooperation between enterprises and public research institutions, for example via greater inter-disciplinary research groups, centre contracts, commercial researchers, regional growth environments, and other joint public-private development programmes. We must also consider every aspect of the process from “cradle to grave”. We must increase cooperation across industries and sectors and find new solutions that reduce environmental pressure and use fewer resources. Another challenge lies in integrating the competitiveness of companies with environmental, social and ethical considerations.

An important task is to maintain our efforts to persuade companies and consumers to give environmental issues higher priority when making decisions on the production and consumption of goods and services. At the same time, globalisation, growing trade and information technology developments are setting a new agenda for environmental policy and the global division of labour.

In this respect, agreements on trading conditions and market regulation under EU auspices are keys to producing, marketing and stimulating demand for cleaner products and services in an open Danish market, a single European market, and a global market. Since Danish companies form part of international supply chains, both EU and international regulations must incorporate environmental considerations. Chapter 8 describes Denmark’s international efforts in this respect.

Households can limit their adverse effects on the environment. Individual consumers can contribute to this process by choosing environmentally friendly products and by using and disposing of products in an appropriate manner. Information from authorities and manufacturers must empow-

er consumers to make choices on the basis of environmental and other considerations, thus making respect for the environment a natural part of everyday life.

First and foremost, companies can help by boosting initiatives to develop technologies capable of introducing processes and products that are more environmentally friendly than today. As part of the preparation of an action plan to promote environmentally friendly technologies, the European Commission has indicated a number of economic and institutional barriers to spreading environmentally friendly technologies in markets. Utilising resources more efficiently, avoiding the use of harmful compounds and minimising emissions and discharges into water, air and soil as well as recycling more and limiting waste volumes must be attractive to companies. Equally important, companies should make more information available, allowing environmental information to follow products to consumers and to those who recycle or dispose of products. We must take advantage of the growing role information technology plays in today’s service society to create and market environmentally friendly products. Innovation must be promoted through better functioning, environmentally aware markets.

The period following the Rio conference has seen the launch of many initiatives to reduce the environmental impacts caused by companies. Market-oriented instruments have been introduced: environmental taxes, eco-labels and voluntary agreements aimed at reducing environmental impacts and encouraging the use of cleaner products and environmental competencies.

In a number of areas, Danish enterprises have a head start regarding the environment. All pollution-intensive companies in the EU are now subject to general regulations based on “best available techniques”, which Danish companies are already required to live up to. This gives Danish companies excellent opportunities to benefit from maintaining a high environmental profile and thus gain a competitive edge.

From 1995 onwards, a number of industrial companies have been under the obligation to publish green accounts containing information about envi-

GREEN REQUIREMENTS FOR SUPPLIERS

In 1995, 24 Danish enterprises had introduced certified environmental management systems. In 2001, the number was more than 600 and exceeded 10,000 on a global scale. Environmental considerations are increasingly being incorporated into enterprise strategies and are becoming a competitive parameter in the market. But enterprises doing trade with each other are unaccustomed to incorporating environmental issues when developing or demanding environmentally friendly products. The requirements that larger enterprises impose on smaller suppliers are an important impetus for green industrial development.

The car industry is one example of a sector desiring to create a green image. Some sectors of this industry are beginning to consider the environment a key success criterion. One car manufacturer has been integrating environmental considerations into its product development since 1996 and has also introduced environmental requirements for its suppliers. This also applies for a number of Danish enterprises acting as sub-contractors for the global car manufacturers. All its subcontractors must introduce environment management systems by 2002.

Community Eco-Management and Audit Scheme, EMAS.

Moreover, 21 sector-oriented environmental management tools have been developed in cooperation with relevant sector associations to help individual enterprises. A good example is the tourism sector. The economic upturn of recent years has spurred a global increase in travel, also for tourist purposes. International tourism decreases the chances of achieving global sustainable

development, because it increases the volume of air traffic and adversely affects nature in tourist destination areas. During the past ten years, the Danish tourist industry has increasingly focused on offering nature and environmentally-oriented attractions and activities. A number of schemes - such as the Green Key - have been introduced, awarding eco-labels to overnight accommodation facilities. Another scheme, Destination 21, has also been introduced for tourist destinations pursuing sustainable development. The scheme covers the overall production chain for the destination. At the same time, the Blue Flag campaign has drawn public attention to clean and safe facilities at beaches and in marinas.

ronmental impacts and describing environmental aspects. According to a survey, about 40 per cent of all companies have achieved environmental improvements, while about 50 per cent have profited financially from saving resources. The advantages of green accounts can still be expanded to include the world outside of companies. The question of how enterprises can and must report on environmental aspects and social and ethical considerations is increasingly becoming part of the international agenda. This applies for both enterprises, who see reporting as a competitive parameter, and political decision-makers.

The Government will help enterprises and authorities to establish environmental management and develop environmental competences. This will facilitate environmental control and integrate environmental aspects into decision-making processes and day-to-day activities. Today, more than 500 Danish companies have been certified under the international environmental standard, ISO 14001, while about 180 have been registered under the

development, because it increases the volume of air traffic and adversely affects nature in tourist destination areas. During the past ten years, the Danish tourist industry has increasingly focused on offering nature and environmentally-oriented attractions and activities. A number of schemes - such as the Green Key - have been introduced, awarding eco-labels to overnight accommodation facilities. Another scheme, Destination 21, has also been introduced for tourist destinations pursuing sustainable development. The scheme covers the overall production chain for the destination. At the same time, the Blue Flag campaign has drawn public attention to clean and safe facilities at beaches and in marinas.

Denmark has succeeded in decoupling economic growth from environmental impact in a number of areas. During the past ten years, industrial discharges of nutrient salts into aquatic environments have fallen by 60-75 per cent while output has risen by 20 per cent. Industrial consumption of energy has increased by 12 per cent, whereas CO₂

emissions have only risen by 2 per cent. Although improvements have been made, pollution and contamination in some specific fields are mounting in step with economic growth and higher consumption. As a result, the past ten years have seen waste volumes increase as the economy grows, just as companies have been unable to reduce the use of environmentally hazardous and health-impairing chemicals to the extent technically feasible and desirable in relation to the environment and health.

Cleaner technology has contributed to reducing waste volumes and the environmentally adverse effects associated with the production and consumption of goods. Denmark's "Product-Oriented Environmental Initiative" is based on the principle that environmental considerations must be incorporated into every decision involving goods and services from "cradle to grave". This applies to any aspect from design and choice of materials to production, transportation, supply, marketing, demand, use and any subsequent handling of waste. Environmental considerations must figure in all links of the value chain, domestic and foreign. Product panels made up of stakeholders have been established as "think tanks" for new, general market initiatives.

The Government wishes to promote the interplay between enterprise policy and environmental policy aimed at making the environment a competitive parameter for many sectors of Danish trade and industry. A key objective is to encourage corporate self-action in the environmental area.

Up to autumn 2002 the Government will work on a report on the "*Green Market Economy*". The report will analyse the possibilities of using market-oriented measures to promote a better environment. The report will also study opportunities for the development and market distribution of environmentally friendly technologies.

The goal is to enable Danish trade and industry to supply goods and services that satisfy our needs, create increased welfare and individual quality of life, while at the same time safeguarding the environment. The development of environmentally friendly markets with environmental considerations as an important competitive parameter will

represent a pivotal part of this. Increased use of market forces to the benefit of the environment will be cost-effective for both enterprises and for society.

The challenge is to create incentives for enterprises as well as society as a whole, to consider the environment, for example through environmental strategies and environmentally friendly innovation. Environmentally conscious enterprises must stand to gain strategic as well as competitive advantages.

Environmentally friendly market development requires, among other things, clear market information, achieved with eco-labels, environmental product declarations and consumer information. Denmark has joined the EU eco-label scheme (the Flower) and the Nordic eco-label scheme (the Swan). This environmental information supports consumers in choosing environmentally friendly products. The goal is for consumers to recognise eco-labels as easily as they recognise the Danish "Ø" label for organic products. Furthermore, consumer confidence in eco-labels must be maintained at the currently high level.

For several years, an objective has been for the public to take the lead and stimulate demand for more environmentally friendly products. This involves the State, counties, and municipalities integrating environmental parameters into their procurement policies. Sustainable development can only be achieved if enterprises are willing to take responsibility. It is imperative that framework conditions make that responsibility attractive.

Objectives and activities in the future

The Government intends to cooperate with market players to establish an environmentally friendly market. This requires the introduction of framework conditions motivating enterprises to make environmental efforts on a voluntary basis, while also boosting their competitiveness. Economic and fiscal control measures will be relevant to achieve this goal. One example is to have prices reflect the actual environmental costs.

The *polluter-pays principle* is one means of promoting cleaner production and products on reasonable, competitive terms.

Another important tool is environmentally friendly public procurement. This can lead to significant demand and by creating volume in the market it can help reduce the prices of environmentally friendly products. In this process, more eco-labelled products on the market and adequate information motivate consumers to change their habits.

Denmark is to be among the industrialised countries in the forefront of reducing pollution, and impacts on the environment from enterprises must still be limited. Legislation and instruments must be adapted and developed in line with technological advances and market trends, persuading enterprises to increase environmental protection voluntarily.

The Government believes that it is necessary to set minimum requirements for a number of health and environmental issues. The manufacturing industry must be responsible for ensuring that the chemicals used are assessed in relation to their environmental and health impacts. Substances that may be detrimental to the environment or to human health must be eliminated from products and production processes. Substances particularly dangerous to the environment or to health must be phased out completely or partially, while limit values should be raised to reduce adverse discharges and emissions into air, water or soil. This applies to substances such as dioxin and solvents. It will also be necessary to map and reduce volumes of small particles suspended in the air.

There is also a need in other areas to look at how regulation can help sustainable development. For example, this applies to tourism where the interplay between physical planning by counties, and regional and national strategies on tourism must be enhanced, for example through cooperation between the Danish Tourist Board and the Danish Ministry of the Environment. We must safeguard and improve recreational opportunities for tourists, local inhabitants and disabled people, for example by improving access to natural areas from housing and holiday areas.

A life-cycle-based product liability for products' pollution and resource consumption contributes to making enterprises, severally and jointly, assume

liability for a product "from cradle to grave". International guidelines for environmental information about enterprises and products should exist to inspire such efforts across national borders.

Apart from eco-labels, environmental information includes environmental product declarations, environmental guidelines for public buyers, environmental reports, green accounts and information systems about the environmental conditions of the industrial sector. The public must have better and easier access to information about environmental and ethical aspects of production, goods and services.

The development and use of know-how, product and process data as well as tools to assess the environmental impacts of products and production processes contribute to increasing enterprises' opportunities to integrate environmental considerations into strategies, development activities and day-to-day decisions. Building enterprise and staff competence and incorporating environmental know-how into training and education should fuel this development and lay the groundwork for a market for environmentally sustainable products.

Cleaner technology and products must be developed and made more widespread. We must develop and advocate the use of cleaner technology and products and provide room for *new solutions, radical innovations, and technological advancement*. In addition, products must be made more durable and easier to repair, upgrade or recycle than at present. The Government will work to make it possible to include environmental considerations in EU tenders and procedures, and for their incorporation into international standardisation work.

Environmentally friendly corporate development requires strong innovation capacity if green commercial opportunities are to be fully exploited and thus enhance the competitiveness of environmentally aware enterprises. The Government has initiated a technological "think tank" to encourage environmental innovation in Denmark with participants from a number of large Danish businesses, universities and other knowledge institutions, non-government organisations (NGO's) and investors.

There must be efforts to make corporate self-action more widespread. Use and development of methods that bring *environmental considerations into corporate decision-making* must be strengthened to increase the number of Danish enterprises using environmental management and recognised environmental management systems. Initiatives should be aimed at ensuring that enterprises actively use, develop and spread “best available techniques”.

As all market players have an important role in sustainable development, it is vital that they become part of this development. Green industrial development also depends, however, on distributors and other enterprises in the product chain that do not in themselves affect the environment to any noticeable degree, especially in a country such as Denmark with a large international trade. Retailers have an important role as messengers of environment demands from customers to suppliers and producers, and they can also play an active role by marketing environmentally friendly products and being at the leading edge in satisfying customer demands of suppliers. The financial services sector can also develop programmes designed to give general credit ratings and loans more environmental weight. Efficient environmentally conscious markets, as well as adherence to the polluter-pays principle, will also boost this development. At the same time, the more widespread use of green and ethical accounting will also facilitate the process.

The basis for sustainable development must be strengthened internationally. We must encourage the EU and international organisations to support recognised guidelines for corporate communication of environmental, ethical, social, and economic aspects. For example, Denmark will work to enhance the EU Flower in European markets. *Internationally, environmental regulation should be improved* through EU provisions such as the directive on pollution-intensive companies (IPPC) and through EU requirements pertaining to “best available techniques”. The concept of life cycle and products, and a market-oriented approach must be disseminated on an international scale.

During the Danish EU Presidency in 2002, the Commission is expected to submit a White Paper on a common EU product-oriented strategy. The White Paper is expected to establish a framework for continued EU work in promoting demand and supply of cleaner products based on market-economic measures. One element of this is expected to be a framework for a cohesive information system for environment information about products. Moreover, the new EU Strategy for Integration of the Environment and Sustainable Development in the Single Market will have an impact. International Danish environmental assistance can help strengthen regulation, enforce legislation and transfer cleaner technologies. Assistance can also provide Danish expertise to reduce environmental impacts and develop local environmental competence.



Foto: Niels Jacobsen

12

Transport

To achieve sustainable development in the field of transport, the Government primarily intends to decouple growth in the impacts of transport on the environment and health from economic growth.

Health, environmental and safety considerations must be integrated into transport policy. The Government's long-term benchmarks call for the transport sector to make its fair contribution to reducing national emissions of greenhouse gases and to ensuring that air pollution from traffic constitutes no health hazard to the population. Traffic noise must be reduced to a level which ensures that nobody is exposed to significant negative health impacts. Transport must be safe for everybody. The negative impact of the transport system on the natural habitats of animals and plants must be curbed.

The transport system must ensure that the population has access to work, shops, public services and leisure-time activities, and all citizens must be ensured efficient mobility through public and private transport solutions. Denmark must offer trade and industry excellent transport links to the surrounding world, and traffic congestion should only occur during peak periods. High traffic flow should be ensured for public and private transport, including cycle and pedestrian traffic.

The public expects to have safe, flexible and swift access to workplaces, shops, recreational activities and holidays. An efficient, modern transport system offering high traffic flow is necessary to provide the mobility required for meeting these demands. Accessibility and efficient mobility are welfare benefits that must also be secured and developed for future generations through Denmark's transport policy.

At the same time, traffic in a modern society has several negative consequences for human health

and the environment that reduce the overall welfare of society. Concerns for public health, the environment and the future of successive generations thus determine the framework of a modern transport system. This does not entail restrictions in accessibility and mobility but means that forms of transport must be found that create less traffic, fewer accidents and less pollution, and housing as well as enterprises should be sited in places where the least possible motorised traffic is necessary. For the past decade, an integrated transport policy has also embraced environmental considerations,

at both EU level and in Denmark, and this must continue. Denmark has set a range of objectives covering such issues as CO₂ emissions, noise, and air pollution from transport. Activities in relation to these objectives will be further developed on the basis of new knowledge concerning the interaction of transport with the environment and health. At the same time, a broader perspective is required - towards international cooperation and cooperation with other sectors, regional and local authorities and other central players - to find long-term solutions to the challenges facing the transport sector.

Many transport problems and their solutions are closely linked with international developments, which means that Denmark cannot implement the necessary initiatives through national instruments alone. The development of new technologies and international transport taxes are just two examples. At the same time, opportunities for sustainable transport can only be realised through considering transport issues with other sector policies. This is especially true for industrial policy, economic policy, localisation policy, and fiscal policy.

We need to be aware of these prerequisites since most transport ultimately serves purposes other than traffic as such. Considering environmental and macro-economic factors, the various measures should also be used where they will be of greatest benefit.

Danish and international experience indicates that technological progress is often the most efficient way of developing a more environmentally friendly transport sector. In its work to enhance sustainable transport, the Government has therefore accorded high priority to promoting technological development. However, technological development cannot solve all of the problems in the transport sector. Therefore, technological development will be integrated into a broad strategy together with physical planning, information and dialogue on transport habits, combined with market-oriented instruments and other elements.

In 1987, the UN World Commission published the report "Our Common Future". In 1990, the Government at that time adopted a Transport Action Plan for the environment and development which addressed the new challenges. Since then, Den-

mark has prepared a number of strategies and action plans for sustainable transport, and these have given rise to great public debate. In addition, several concrete initiatives have been launched with the aim of increasing sustainability in the transport sector. At EU level, Denmark contributed to shaping the EU Transport Council's 1999 strategy for integrating environmental concerns and sustainable development into Community transport policy.

In Denmark, the transport sector's health and environmental impact from air pollution and accidents has fallen since the Rio Conference. This is particularly due to targeted efforts for better motor technology, fuel quality, and road safety. In the EU, agreements with the automobile industry and steadily more stringent standards for vehicle emissions of pollutants have resulted in considerable progress in this area.

Denmark's system of taxes to encourage the choice of less polluting vehicles and fuels has been quite successful. Differential taxes on lead and sulphur-containing fuels have contributed to the transition to cleaner fuels that took place during the 1980s and 1990s. The system of taxes has also been used to promote the use of more energy-efficient vehicles. One example of this is the conversion of the vehicle excise duty into the "green owner tax" on passenger cars. Moreover, electric cars are exempt from vehicle registration tax and, similarly, the most energy-efficient car models are subject to a lower vehicle registration tax.

According to national and international calculations, demand for transport will continue to rise for many years. Economic growth in society is expected to remain a central cause of growth in transport demand. Globalisation, urban growth, increasing car ownership and changed travel habits are other contributory factors. The increase in traffic volumes will result in higher emissions of greenhouse gases, crowding, consumption of resources, and more pressure on natural and residential areas. A broad strategy taking into account the various reasons for traffic growth and technological development will make it possible to limit environmental impacts from transport. In that manner, we can prevent traffic growth from undermining the Government's objectives for traffic

flow, the environment and health concerns. According to existing knowledge, the greatest traffic-related health risk stems from accidents and air pollution, including fine particles from vehicles. Excessive noise levels have also been shown to impact human health.

Objectives and activities in the future

CO₂. The transport sector must contribute to fulfilling Danish obligations to reduce CO₂ emissions by 21 per cent from 1990 to 2008-12. The Danish Government will consider possible measures to limit CO₂ emissions as a basis for stipulating benchmarks for the transport sector's CO₂ emissions up to the first budget period 2008-12 and in the longer term. This will halt the steady increase in CO₂ emissions from the transport sector. The transport sector's contribution to the total Danish climate efforts will be assessed in relation to where "the most cost-effective solution for society when achieving environmental objectives" can be achieved. The Danish Government has set up a committee to examine possibilities for effective solutions to reduce climate-gas emissions, including from transport. The Danish Government's long-term target for 2030 is reduction in transport-sector CO₂ emissions by 25 percent, compared to 1988 levels. This ambitious target assumes that economic growth is decoupled from developments in CO₂ emissions from the transport sector.

Air pollution and the urban environment. A special effort has been made in urban areas to minimise the effects of traffic on city and town environments. By the year 2010, the Government aims to reduce emissions of nitrogen oxides and hydrocarbons by 60% compared to the 1988 level and to halve emissions of particles from urban traffic during the same period. Air pollution from traffic is a special problem for the urban environment and leads to health problems. Air pollution in the form of fine particles gives rise to particular problems. The Government will consider ways of promoting the retrofitting of effective particulate filters in lorries and buses. The technology for the installation of filters has yet to be fully developed for diesel-fuelled vans and passenger cars, which account for some 60 per cent of particulate emissions. However, some new car models are being marketed with filters. The Government will consider how market-oriented measures can promote

the sale of these models. Diesel cars are more energy efficient than petrol-powered cars and, therefore, cause lower CO₂ emissions. On the other hand, diesel cars cause higher emissions of nitrogen oxides (NO_x), and particles. Municipalities can utilise the possibilities in the Road Traffic Act to strengthen local initiatives for a better urban environment. The Road Traffic Act provides examples of possible pilot projects involving environmental zones and other initiatives.

Road safety. The goal of the Danish Road Safety Commission's Action Plan for 2000 is to reduce road casualties (fatal and serious injuries) by 40% by the end of 2012. The Government intends to realise this goal through measures to constrain traffic speeds in particularly dangerous and exposed places, and encourage the wearing of seat belts, improvements in road design, marking and traffic development, as well as more information, and better training for road users.

Noise. Traffic is the most significant source of noise pollution in Denmark. In particular, noise from road traffic is today a widespread health and environmental problem, while noise pollution from railways has been limited considerably during the 1990s. Many people live in areas where noise from traffic exceeds what are considered acceptable health limits. It is estimated that today about 150,000 people live in dwellings heavily impacted by noise. Heavy noise impacts are those over 65 decibels, ie. 10 decibels more than the recommended limit value. There is also growing awareness in the EU of the environmental consequences of noise. In the spring 2002, the EU Environmental Noise Directive was adopted. The Directive contains requirements on noise mapping, preparation of national action plans, and public involvement for all EU countries.

In light of this, the Danish Government has set up a "Road Noise Group" to prepare a broadly based proposal for a road-noise strategy. This strategy will include information regarding the feasibility of achieving a significant reduction in the number of dwellings severely affected by road noise. This will be within the framework of the forthcoming Environmental Noise Directive. An important part of the Road Noise Strategy will be to implement a macro-economic assessment of the health conse-

DIFFERENTIAL FUEL TAXES CURB PARTICLE EMISSIONS

In Denmark, differential taxes on car diesel fuel on the basis of the sulphur content have been introduced. The sulphur content of all fuel used in Denmark is now less than one seventh of the EU limit, which is 350 ppm (parts per million). This has brought about a sharp drop in the content of health-hazardous fine particles in air. Measurements on Jagtvej in Copenhagen have shown that concentrations of ultrafine particles (nano particles) were halved from 1999 to 2000.

quences of road noise, and the measures that can be applied to reduce the number of heavily impacted dwellings.

Mobility and traffic flow. A number of long-term investments have been made with the aim of future expansion of the road network and public-transport systems. The plan is to boost the quality of public transport by investing in new high-quality trains nationwide and in the Metro and the Circle Line in Copenhagen, and urban railways in Aarhus and Aalborg. The road traffic investments are earmarked for motorways and expressways with a view to creating a viable network of main roads which provide maximum road safety at minimum inconvenience to the population. The Government intends to create the financial foundation for further investment in roads and public transport, among other things with a view to establishing more appropriate traffic flows in the Greater Copenhagen area. Spatial planning initiatives will improve the traffic flow for pedestrians, cyclists and public transport. To ensure that the wisest decisions are made, the Government will continue to rely on environmental impact assessments when considering relevant Bills, including proposals for new infrastructures.

Nature and landscape. The impact of transport on biodiversity and nature and the environment must be controlled. Public planning initiatives must essentially respect all protected areas and listed buildings and consider natural assets. Such initiatives should also preserve the character of large unspoilt landscapes, ensuring that they remain free of noise nuisances and fragmentation. It is important to safeguard wildlife, ensuring that animals can pass traffic systems, especially at

stream valleys and dispersion corridors. In accordance with the Government's comments on the revised regional plans for 2001 (Regionplanrevision 2001), counties have identified large, undisturbed landscapes in their regional plans.

Waste. According to an EU directive, the recycling percentage for materials from scrap cars and vans must be increased to 85% by the year 2015. To achieve this percentage, the Government will require that end-of-life vehicles be processed so that their parts can be recycled.

Getting the prices right. The Danish Government supports the conclusion from the EU Council in Gothenburg in 2001 that transport prices should reflect the true cost of transport to society to a greater extent. Therefore, the Government will regularly consider whether a green market economy for transport can contribute to sustainable development. This will promote more equal competition between the different modes of transport. The Danish Government will establish a committee, which will investigate the possibility of restructuring vehicle registration taxes to promote sales of environmentally friendly vehicles. The Government will research road-pricing programmes, which are being promoted in other countries, and analyse their potential effects in a Danish context.

Better transport choices and habits. Information on environmentally friendly choices of transport must be available so that people can make their own decisions. For passenger traffic, this means promoting the quality of public transport where an adequate basis exists through national and international competition. Likewise, cycling and walking are attractive alternatives. It includes utilising the

car better, partly through the “park and ride” scheme, by promoting car-pooling databases, and by enterprise plans for safety and the environment. In freight transport, the emphasis will be on information on facilities for combined transport solutions involving more extensive use of rail and sea transport. Better dialogue between central government authorities and trade associations will also promote better logistics and environmental management. Other measures to promote environmentally friendly transport choices and habits include education, information, public debate, green procurement policies and relevant market-oriented instruments.

Research. Research is being undertaken into the central aspects of developments in transport and the measures that can steer transport options in the direction of sustainable development. Examples of the research are choice of type of transport, economic analyses for transport, and integrated analyses of economy, the environment, and road safety. Another area of research is the environmental effects of traffic, including the significance of particles.

International activities. At its meeting in Cardiff in 1998, the European Council decided, as a follow-up to Treaty provisions, to integrate environmental considerations into all other sector policies. Consequently, at the 1999 Helsinki Council Meeting the EU transport ministers presented a strategy for incorporating environmental considerations into transport policy. The Government will follow up on the strategy proposed by the EU Transport Council and on the transport-related sections of the EU’s work for sustainable transport including the conclusions made by Heads of State and Government at the European Council in Gothenburg in June 2001. Similarly, the Danish Government will apply the OECD guidelines for sustainable transport policy which were adopted as part of the OECD environment strategy for sustainable development in 2001. For instance, the Government will take steps to ensure that all modes of transport pay social costs, and to promote public transport as well as freight transport by rail, on waterways, and through combined transport solutions. More specifically, Denmark is working for intensified and fair competition in the railway sector through-

out the EU, for an international or EU tax on aviation fuel, and for the promotion of high international environmental standards for vehicles and engine fuel. In September 2001, the European Commission adopted a White Paper on the EU’s Common Transport Policy. The White Paper contains about 60 concrete initiatives and the Danish Government will seek to see that the initiatives generally promote sustainable development in the transport sector.

Since the development and production of new vehicle technologies largely take place outside Denmark, the Government wishes to conclude agreements through the EU on standards for new vehicles and fuel types. This approach has been successful to date, and the Government will work to promote EU regulations that, while flexible, are also binding to an extent that provides both incentives and opportunities for manufacturers and buyers to make environmentally friendly choices. For one thing, Denmark intends to support better common EU methods for calculating and documenting the environmental impact of vehicles and transport infrastructures.

Denmark intends to work actively in international forums other than the EU. The UN Economic Commission for Europe (ECE) is a relevant forum for road transport issues, while the International Civil Aviation Organisation (ICAO) and the International Maritime Organisation (IMO) are relevant for discussions concerning aviation and maritime issues. The World Health Organization (WHO) focuses on the direct and indirect effects of transport on health, while general issues relating to sustainable development are discussed as part of the UN’s follow-up to the 1992 Rio Conference. Denmark is focusing its efforts to secure more binding and specific agreements in these and other international forums dealing with matters of international sustainable transport.

The Government will follow the EU objectives and guidelines for environmentally sustainable transport. Emphasis will be on the integration of environmental considerations into the transport sector to take account of new knowledge, and on assessing measures and the involvement of relevant players.



Foto: Thomas Berberg

13 Energy

Energy consumption and energy supply are paramount activity areas for achieving sustainable development. Therefore, anthropogenic climate change and SO₂ and NO_x emissions must be limited, but at the same time maintain balance in the economy. Therefore, there must be efforts for stable and cost-effective energy supply.

The Danish Government will liberalise the Danish electricity and gas markets in order to improve energy production efficiency, reduce energy prices, and ensure that energy is produced with less pressure on the environment. The Danish Government will also strive for more coordination in energy policy across borders, not least in the EU, so that the price of energy in individual countries reflects the actual cost, including the environmental cost. Denmark has entered ambitious international obligations to reduce the negative impacts of energy on the environment. With its commitment to reducing emissions of six greenhouse gases by 21 per cent compared to 1990 levels between 2008-12, Denmark will make a significant contribution to the Kyoto Protocol and thus to countering global climate change. Furthermore, Denmark intends to reduce SO₂ emissions by about 30 per cent and NO_x emissions by about 45 per cent compared to the 1998 levels by the end of 2010.

Denmark has applied large expenditure on energy saving and efficiency, and expanding renewable energy. While enjoying substantial economic growth during the 1990s, Denmark managed to keep total energy consumption at a fairly constant level. A major reason for this is that we now utilise surplus heat from electricity production more efficiently than previously. Thus, more than 80 per cent of district heating is today co-produced with electricity. The use of natural gas and renewable energy has also risen during this period. On balance, CO₂ emissions dropped by about 10 per cent between 1990 and 2000. Combined with better flue-gas cleaning systems, cleaner energy sources have contributed to a considerable reduction in SO₂ and NO_x emissions from the energy sector.

Denmark still has some way to go to reach the national targets set for CO₂ emissions in 2005 and to meet the Kyoto commitments in 2008-12. But the most recent assessment shows that we are on the right track. The Government has initiated work to revise the estimates of the expected development in Danish emissions of greenhouse gases and the difference in relation to the Kyoto objective. Furthermore, there should be considerations as to how this difference can be eliminated in the most cost-effective way.

To a great extent, Denmark has already implemented the “easy solutions” to reducing its energy consumption and CO₂ emissions. Consequently, it is crucial to ensure a higher degree of economic efficiency when planning new action and introducing new instruments.

Objectives and activities in the future

The potential for making the energy sector more efficient remains large. Through national efforts and active cooperation within the EU, the Government intends to develop *market-oriented instruments* that can ensure stable, cost-effective energy supply, and promote environmental objectives while maintaining balance in the economy.

The reforms of the framework for electricity and gas supply in 1999-2000 were the start of a process of liberalisation of the electricity and gas markets which the Government intends to further.

From January 2003, Denmark is required to open its electricity market fully, thus allowing all consumers to choose their own supplier. The Danish Government will investigate how cost-effective and flexible regulation of the electricity sector's CO₂ emissions can be established when the present programme involving CO₂ quotas expires at the end of 2003. This will be coordinated with following up compliance with the Danish obligations with regard to emissions of SO₂ and NO_x. Denmark supports the European Commission's proposal for a European CO₂ quota system. The Danish Government is aiming at full deregulation of the Danish gas market from 2004, and will work to open the market in the same way throughout the EU.

Denmark intends to do its part in reducing *global warming*. The Government aims to bring down CO₂ emissions by 20 per cent of 1988 levels in 2005. At the same time, the Government will take the initiatives that are necessary to fulfil its commitments under the Kyoto Protocol, compelling it to reduce total emissions of greenhouse gases by 21 per cent of 1990 levels in 2008-12.

The so-called *flexible mechanisms* under the Kyoto Protocol can be cost-effective tools which should be utilised and further developed.

The expansion of renewable energy supplies must continue as *renewable energy* also contributes to a cost-effective means of fulfilling environmental goals - including the CO₂ objective. One possibility could be that Danish renewable energy is incorporated in a future European CO₂ quotas market. The current erection of off-shore windfarms is providing a lot of experience. In 2005, Denmark will use approximately 1.4 million tonnes of biomass. The Danish Government will also promote research and development into renewable energy where businesses and research institutions can see opportunities for good results. Therefore, the Government has presented a bill regarding a two-year test scheme with 150 per cent tax relief for enterprises' research activities, if these are in cooperation with public-sector institutions. The Government will work to see renewable energy account for 29 per cent of the total electricity consumption. The targets in the EU Renewable Ener-

gy Directive are that renewable energy should account for 22.1 per cent of total EU electricity consumption by 2010. As part of the energy sector's contribution to meeting Denmark's goal for reductions in CO₂ emissions, it is relevant to consider benchmarks for the proportion of renewable energy in gross energy production in the longer term so that renewable energy continues to expand to the extent it can contribute to cost-effective fulfilment of environmental targets.

However, we must also develop strategies to regulate the periodical production of surplus electricity generated by rising volumes of heat-bound and wind-dependent electricity generation. It has been politically agreed that renewable energy should account for a minimum of 20 per cent of Denmark's electricity consumption by as early as 2003.

Nuclear power is not considered a sustainable source of energy. However, it is possible to reduce CO₂ emissions by converting from coal to natural-gas-based electricity production.

As part of its efforts to boost *energy savings*, Denmark introduced a new Energy Savings Act in 2000, intended to pave the way for better planning, coordination and prioritisation of overall efforts to cut energy consumption.

Efficient efforts in the energy area are best secured through *international cooperation*. Parallel with the liberalisation of the international energy markets, international solutions to global environmental problems should be promoted. This will ensure that efforts will be in the most appropriate areas, and it will ensure equal competition for businesses operating in individual countries. Denmark supports the use of flexible mechanisms advocated in the Kyoto Protocol and as a first step will establish a concrete scheme to promote Joint Implementation energy projects in Central and Eastern Europe.

IMPROVED ENERGY UTILISATION

The Danish economy grew by approximately 27 per cent from 1988 to 2000. During this period, Denmark's gross energy consumption (adjusted for climate fluctuations and net electricity exports) rose by a mere two per cent. This means that energy utilisation was almost 20 per cent higher in 2000 than in 1988. Some of the reasons for this improvement are:

- Significantly more utilisation of combined heat and power. The amount of electricity co-produced with district heating almost doubled from about 27 per cent to slightly more than 50 per cent during the period, and more than 80 per cent of district heating is now co-produced with electricity.
- Increased emphasis on reduction of energy consumption. Partly through market-oriented instruments such as green taxes, and partly by means of a large number of other initiatives.
- General technological advances.
- Changes in occupational structure.



Polfoto: Kim Agersten

14 Urban and housing development

The Government's primary objective is to promote sustainable development of towns, housing and buildings. Residents and users in individual urban and housing areas should participate actively in this development, for instance through a lifestyle that calls for everybody to consider the environment and limit resource consumption as much as possible in their everyday lives. Towns and cities must secure a framework for continued growth and they must provide attractive localisation for new businesses. With respect to social life, buildings and infrastructure, towns must be organised and managed with a view to significantly reducing resource consumption and environmental impacts. There must be greater productivity and efficiency in construction. Towns and cities must be alive and diverse, and they must be improved as a framework for good and equal integration of everyone in Danish society. The individual parts of towns and cities should offer housing, service trades, public institutions and culture, thus revitalising urban areas. The development of towns and cities must take place through private/public cooperation.

Older business districts and dock areas must be utilised better by renovating them for other uses. In this way an attractive diversity in a town's supply of areas for business and housing is achieved. Urban transport should be organised so as to achieve the most effective utilisation of the overall transport system, and so that more can benefit from using public transport.

There must be a balance in the housing market, and the individual should have a real choice between renting and owning a dwelling. At the same time, new efforts will target depressed urban areas. Urban renewal creates a framework for the interplay between the new and the old, and it should emphasise quality, good architecture, and concern for the visual environment and urban ecology. Similarly, preservation-worthy historical environments must be safeguarded. We should also improve the quality of urban recreational opportunities.

Greater prosperity and increased division of labour have led to a sharp rise in traffic, which for number of years has constituted a challenge for urban environments and thus urban quality in general. It may be important to develop principles for localisation and transport, partly by ensuring that an increasing proportion of transport takes place on public transport, by bicycle, or on foot. To ensure this development in the Greater Copenhagen region, non-residential buildings and other facilities will be placed close to railway stations.

It is advantageous if urban areas expand into areas that are already urbanised. However, the growth of towns and cities should be considered in cohesion with rural districts so that all areas in Denmark are realistic and attractive development areas. Most development in rural areas is expected to be as expansion of rural towns and villages.

In larger towns and cities, an important part of development will be renovation and conversion of older industrial areas. By reusing existing, derelict urban areas, local social, nature and building resources are utilised in the best way. There should be efforts to mix housing and the other urban functions. A mixture of services, trades, and different types of housing will make towns more vibrant, diverse and socially sustainable. Such towns will also provide a better basis for the integration of all citizens. Plans for urban revitalisation must be based on dialogue and partnerships between the various players so that people have a greater chance to influence developments in their local areas.

Sustainable development is connected with user behaviour and lifestyles in towns and housing areas. Experience has been good with public involvement, individual measurement of resource consumption by households, and green accounting in individual housing areas. The Government will further develop these measures.

Quality and recreational opportunities provided by green urban areas (for example with space for informal sports activities) are very significant for both physical and psychological well-being in towns and cities. This applies not least to integrating refugees and immigrants into the local community. The areas are very popular and the green urban areas and ur-

ban nature are significant for the ecological cycle in towns. They filter rainwater, receive compost, and provide a framework for plant and animal life.

Buildings and facilities located in towns constitute important elements of the economic and cultural capital of society and also play a key role in overall resource consumption and environmental impacts. Energy consumed to construct and operate buildings accounts for half of Denmark's total energy consumption, while materials used for buildings and facilities comprise the greater part of the consumption of Danish raw materials. Thus, recognising and limiting resource consumption and the environmental impacts of the life-cycles of buildings are important challenges. These challenges can be met by increasing the utility value, flexibility and quality of buildings, thus extending their lives and reducing the need for structural changes.

It is important that sustainable development is cemented at sector level. This will take place through practical and specific examples of how to incorporate sustainable development. The good results already achieved with sustainable and environmentally correct planning and building in both new construction and renovation must be made more widespread. It is important that a dialogue between building owners and consultants early in the planning phase includes the sustainability of the solutions chosen. Parts of the construction sector have themselves begun to describe how sustainable development can be made visible in the construction sector.

Objectives and activities in the future

Mixed housing often provides a diverse and wide composition of residents. Urban areas with mixed types of ownership are also usually stable and successful. The Government wants mixed types of ownership in areas with a lot of social housing which are characterised by run-down buildings and a one-sided composition of residents. Committee work has been initiated that, in 2002, is to prepare a reform enabling residents in social housing to buy their own homes, or buy them as part of a housing association.

Housing market conditions in certain areas make it difficult to move to a new home when needs change. The Danish Government will ensure that more rented social housing is built and encourage construction

of private rented housing, including student accommodation in the large university towns, and housing for the elderly.

The report from the *Danish Industrial and Urban Development Committee* from January 2001 contains a number of descriptions of possible proposals for new initiatives and legislation that can boost the development of sustainable towns in relation to location and utilisation of areas. The Government will follow up the Committee's work.

In the National Planning Report for Denmark 2002, the Danish Government describes the development of towns and cities as part of sustainable development in more detail, and outlines how to secure a Denmark with harmony between the different areas in the country, and between town and countryside.

During 2002, the Government will submit its policy for Danish development. The policy will initiate a debate between all relevant parties, and it will aim at creating a balanced, sustainable Denmark. The Government will ensure and develop diversity in Denmark and allow space for both economic progress

URBAN REVITALISATION — FROM CEMENT PRODUCTION TO NEW PURPOSES

The Lindholm Brygge area at Limfjorden, close to Aalborg, is changing. Until 1979 there was a cement works with more than 500 employees. Now, new enterprises are coming. An international electronics group is building 15,500 square meters of floorage for more than 400 engineers, who will be developing mobile telephones. Today, the electronics company offers almost as many jobs as the former cement works. Lindholm Brygge will also house an IT company, a technical school, and an adult vocational training centre, providing a total of about 100-150 jobs. About 400 new dwellings will be built along with recreational areas that will allow the public access to the fjord. Fully developed, Lindholm Brygge will cover an area of 102,000 square metres, or approximately twice the size of the area occupied by the former cement works.

and a better environment. Better cooperation between town and country is necessary for the development of both. In future, the greatest growth in housing and commercial property is expected in larger towns. However, villages and rural districts will also play an important role.

A town's attractiveness is increasingly becoming a parameter in the competition between regions and towns for attractive enterprises and jobs. New industries want to locate in towns with well educated labour, good infrastructure, and varied cultural facilities. Holistically oriented urban renewal is being developed as a tool for urban development, and urban renewal will also improve the utility value of older housing stock. Focus is on the needs and demands of people and businesses for the development of towns and cities.

Initiatives in especially exposed urban and residential areas will be developed through urban regeneration projects focusing on social sustainability, integration and employment. Two specific aims are to involve all citizens and to integrate social, economic and environmental initiatives in local communities. With the project "Byer for alle" (Towns and Cities for Everybody), the Danish Government intends to strengthen local integration in depressed urban and residential areas in need of special integration initiatives.

Parties in the Danish building and construction industry must increase their competencies in sustainable building and construction, and they must also show a greater interest in, and commitment to, fostering sustainable development. The Government wishes to motivate increased demand for sustainable and energy-efficient construction work. Growth and a sound environment should go hand in hand. More instruments will be used, from market-oriented tools with independent administration, to actual regulation of the area. This will take place by stimulating more use of sustainable products and the development of new labelling schemes for the construction industry's declarations of resource consumption, health, and environmental impacts. A panel of experts representing the building sector, politicians and central authorities published the Action Plan for *environmentally sustainable building and construction practices* in 2001 which provides a suitable basis for sectors in the area to coordinate their actions with regard to the environment.



15

Measures and knowledge base

A forward-looking commitment to the environment and sustainable development may stimulate competitiveness and the transition towards the knowledge economy. Paying attention to environmental concerns should be economically beneficial. This is why those who manufacture, supply, consume and finally dispose of products should bear the environmental costs. Technological breakthroughs and innovation are necessary to redirect society towards sustainable development. We need a solid knowledge base for making the right decisions and prioritising activities. Environment policy needs to be knowledge-based and underpinned by the precautionary principle.



Polfoto: André Brutman

Denmark has built up a broad and in general well-functioning system of legislation on nature and the environment. The Government wishes to explore whether increased use of market-oriented measures will be able to supplement these rules and help solve environmental problems in the best and most cost-effective manner for society. Market-oriented measures such as environmental taxes, tradeable quotas and subsidies have often proved suitable for making producers and consumers more environmentally friendly in their actions. If environmental concerns demonstrate that it is appropriate to introduce new environment taxes or increase existing taxes, the additional revenue will be applied to reducing other taxes and charges.

The activities and adjustments needed to create a society in harmony with the natural resource base

call for insight, understanding and skill. To make the right decisions, prioritise activities and select the right measures, a solid knowledge base is required. Research into causal relationships and into how activities in society have a bearing on people and nature is a prerequisite for a targeted and prioritised approach in the environment area. Forecasts and scenarios for the anticipated trend in emissions/the state of the environment and the interplay with the economy are other essential elements of the knowledge base needed to achieve sustainable development. There should be general focus on more knowledge building to underpin better prioritisation in environmental initiatives so that Denmark ensures “the most cost-effective solution for society when achieving environmental objectives”. At the EU summit in Barcelona in the spring of 2002, it was decided that the total expen-

diture on research and development in the EU should be increased to a level approaching 3 per cent of the GDP by 2010.

Decisions at all levels should be assessed in relation to the environment. The Government finds it important that bills and Government proposals presented to Parliament undergo a strategic environmental impact assessment to ensure that the environmental consequences form part of the decision-making basis in line with economic analyses. Similarly, the environmental impacts of large-scale, central-government engineering works must be assessed. Local and regional authorities should also ensure that decisions at local level are submitted to environmental impact assessment.

The desire has been - and still is - to ensure that Danes are aware that environmental concerns must be taken into account in production and consumption. The public sector wants to take the lead by, amongst other things, including environment considerations in procurement policy. Consumers are buying a larger volume of eco- and energy-labelled products, and steps are being taken in many areas to introduce even more eco-labelled products to the market. Eco-labels and environmental product declarations offer consumers improved opportunities for making real choices.

Technological breakthroughs are among the keys to enhanced resource efficiency, which may help decouple environmental impacts from economic growth. The Subsidy Scheme for Cleaner Products has been instrumental in promoting the development of products, tools and technologies that, combined, have been able to foster the inclusion of environmental considerations into production and to offer Danish enterprises a competitive edge in other markets. Technological forward thinking can further support this process.

A growing number of Danish enterprises are assuming an active role in preventive environmental activities by introducing environmental management, developing cleaner products, and drawing up green accounts. This positive trend must be maintained through better information, guidance and exchange of experience.

Local and regional authorities play an important role in the concrete implementation of Denmark's nature and environment policy. Local and regional authorities manage substantial parts of specific environmental and spatial planning activities. At the same time, local and regional authorities are best at involving the public in active debate on local planning. A constructive dialogue between authorities and the public is of paramount importance and should be strengthened to gain optimal solutions for both people and the environment.

Objectives and activities in the future

In order to achieve "the most cost-effective solution for society when achieving environmental objectives", the Government will submit a report in 2002 on *the green market economy*. This will analyse the possibilities for practical use of market-oriented tools for the promotion of a better environment, including economic tools such as taxes and subsidies, tradeable pollution permits and quotas, user charges, property rights, phase-out of environmentally harmful subsidies, rules on liability, etc. Furthermore, there will be an analysis of the potential and experience in technological innovation and dissemination of technological solutions, as well as initiatives that can stimulate and develop the market so that enterprises can better exploit their environment initiatives as a competition parameter. Moreover, practical application of measures to promote the development of environmentally friendly and resource-efficient technologies and products will be examined. These analyses will also chart the market potential of the environment and the need for cooperation between the public and private sectors on initiatives to promote technological development and the market's function and transparency with a view to making it easier for consumers, investors, and enterprises to be environmentally and resource conscious.

The use of *economic instruments should be coordinated internationally*. We can obtain higher environmental gains if, for example, tax levels are more or less identical in different countries, which eliminates the need to pay special regard to international corporate competitiveness when designing tax systems. In the international arena, Denmark will work on the development of common instruments to reach the CO₂ target. One possibility

is to introduce international taxes on air transport, for example a tax on aviation fuel. In the EU, Denmark will take steps to harmonise environmental taxes with minimum rates.

In the OECD countries there are examples of *subsidy schemes*, including tax exemptions that can encourage behaviour that has negative consequences for the environment. It is necessary to examine whether the existing subsidy schemes should be changed or adjusted to prevent them from harming the environment.

Denmark is facing a technological challenge. *Technological breakthroughs and innovation* are required both in order to ensure enterprises' competitiveness, and to decouple the negative impacts on nature and the environment of economic growth. A long-term effort to promote pioneering technologies is required. There is a need to disseminate knowledge of existing, environmentally friendly technologies and develop new technology, new materials and new solutions to redirect society towards sustainable development. Technological forward thinking is an important instrument in this development. There is also a need to find new ways of organising existing production in a more environmentally favourable fashion to ensure that resources are used as efficiently as possible and that products become more environmentally friendly throughout their life cycles. This means that nature and the environment must be affected as little as possible per unit produced or service provided - throughout the production chain from extraction via consumption to disposal. The initiatives for cleaner products must help to remove barriers to development and encourage sales of more environmentally friendly goods. The new EU framework programme for Research, Technological Development, and Demonstration underpins sustainable technological innovation. Danish research and development policies must contribute to the EU targets within this area.

We need to *strengthen the interplay between the public and private sectors* on research, development, and dissemination of green technologies. Universities and the corporate sector must be more open to cooperation on research, technological development, education, and training. In order

to promote this cooperation, the Government has introduced an allowance of 150 per cent on research expenditure applied in cooperation with public institutions. Public and private-sector prioritisation of research into environmental issues can help strengthen industrial and commercial positions and ensure market breakthroughs for cutting-edge technologies that take into account environmental considerations. For example, fuel cells in future transport can lower CO₂ emissions substantially. Information technology and biotechnology may also pave the way for new environmentally friendly production methods and products. The use of new types of materials can lower resource consumption and open more recycling possibilities.

Enterprises must have the chance to cooperate with knowledge institutions, which can support environmental initiatives through, for instance, advice on environmentally friendly technologies, strategic environmental management, communication on environmental issues, and staff competence development. New knowledge and new tools and methods must be disseminated to, and firmly embedded in, enterprises and their surroundings. We need to establish a framework within which the market itself rewards and stimulates environmental initiatives in enterprises, thus encouraging them to focus on technological development. At the same time, any barriers to the market access of environmentally friendly technologies must be removed.

The development and use of economic and other *measures* must be reconciled with enterprises' capacity for innovation and self-management. Direct regulation in the form of legislation and rules will still be necessary as the market and technology develop. Environmental regulation will represent the required minimum basis for environmental behaviour and will determine the framework conditions capable of motivating enterprises to pay greater attention to developing and selling environmentally friendly products and to undertaking other voluntary green initiatives. The regulatory measures must be chosen with due regard to reaching environmental targets in the most cost-effective manner.

A better *knowledge base* will support sustainable development. This applies to basic, strategic and user-oriented research in all sectors. Basic research into causal relationships and into new environmental and societal problems is important for society's ability to take the right and preventive decisions at an early point and thereby achieve sustainable development. Therefore, *research and development* in support of sustainable development should be strengthened. The vision is to provide Denmark with a strong knowledge base on sustainable development.

The Government has established an Environmental Assessment Institute. Through research at a high international level, the Institute must ensure that environment targets are reached in the most cost-effective way. The Institute must achieve a general view of the current and long-term environment situation, both in Denmark and globally. In relation to this, the Institute must call upon and utilise all the knowledge and competencies that have been built up by other national and international research institutions. This knowledge and insight must be disseminated to the public and to political decision-makers.

Decisions on environment policy should build on the optimum knowledge base - *knowledge-based environment policy*. There is a need for research, data collection and monitoring that can contribute to improving the decision-making basis. The link between research and priorities in action plans and strategies must continue to be strengthened. Environmental economy and analyses of how the behaviour of enterprises and citizens affects the environment rank among the core research areas. This also holds true for research into the link between activities in society and effects on human health and the environment as well as forecasts and scenarios of the anticipated development. The knowledge acquired must be available to everyone. Where the knowledge base is insufficient, the *precautionary principle* is an important instrument.

Knowledge of the link between activity and environmental impacts provides an improved decision-making basis, and the methods for *strategic environmental impact assessment* must therefore be upgraded. The integration of the environment and

economy into decision-making processes can be promoted by documenting the effect of environmental initiatives through economic analyses of advantages and disadvantages. In order to prepare these analyses, we need to upgrade the methods for valuing the benefits of nature and the environment that are affected by political initiatives.

In the years ahead, attention will be also be directed to *information, education and teaching*. The key concepts in a forward-looking information and teaching strategy on sustainable development are knowledge and responsibility. Schools and youth education programmes assume a special role as the institutions that help shape the fundamental values of children and young people. Greater awareness of the natural basis of human existence combined with profound knowledge of the interplay between the environment and economic and social issues will be reflected in the attitudes and sense of responsibility of future generations. The education sector plays an important role, for example through teacher and educator training which should focus on helping children and young people understand the problems associated with sustainable development.

One duty of educational institutions is to disseminate knowledge about the environment and sustainable development in such a way that this knowledge can lay the foundation for democratic decisions. Sustainable development should be taught in a context of international cooperation among educational institutions. This would cause children and young people to realise that we have common problems that can best be solved by taking joint international action. In March 2000, ministers for education signed the Haga Declaration, and in January 2002, the first Agenda 21 for education in the Baltic region (Baltic 21E) was approved. With this, the educational sector placed ecological, economic, cultural and social development on the agenda for cooperation between Denmark and the countries bordering the Baltic Sea.



Polfoto: Morten Lankilde

16 Public participation and Local Agenda 21

A sustainable society is based on democracy and openness and relies on popular participation and responsibility for decisions. Sustainable development can only be realised if all parts of Danish society are committed to working towards this goal. One of the messages in the Brundtland Report of 1987 and the Rio Declaration of 1992 was that active public participation is a prerequisite for achieving sustainable development and solving the environmental problems of the world. Denmark has a long tradition of involving the public. In the environment field, this tradition was followed up by an international agreement - the Aarhus Convention of 1998. The work towards sustainable development depends on the population having easy access to information; being able to participate in decision-making processes; and having access to justice in environmental matters.

If we are to achieve sustainable development globally, the principles of the Aarhus Convention should also apply in other countries. Denmark will work to ensure that these principles are employed more extensively in international agreements, and that initiatives to strengthen public access to information and participation are included in the results of the World Summit on Sustainable Development in 2002. Local Agenda 21 activities also play an important part in the efforts to realise sustainable development.

Public participation in decisions on and the implementation of the Strategy for Sustainable Development is essential. Therefore it is important that there is broad public support and confidence in policies for sustainable development. Public participation can add knowledge and values and submit proposals for priorities in the further work in Denmark in sustainable development.

The Aarhus Convention of 1998 is an international agreement about the environmental rights of citizens. It implies that citizens and environmental organisations must have access to information and participation in decisions on environmental matters - new rules, action plans or other planning. In addition, citizens are entitled to lodge complaints and initiate proceedings before courts of law. In September 2000 Denmark was the first western country to ratify the Aarhus Convention. This has offered environmental organisations improved access to justice under a range of important environmental statutes and has also extended the general principle of involving citizens in planning decisions. The sustainable development theme needs to be

taught at all levels of the educational sector. The aim is to give everyone an opportunity to increase their knowledge of the many problems and issues encompassed by the debate on sustainable development at global, regional and local levels.

Local activities are the starting point for addressing many of the problems that must be solved before society can achieve sustainable development.

Changes taking development in a sustainable direction must come from people's day-to-day lives and choices, and from the employees of enterprises.

Changes are stimulated through, for instance, Local Agenda 21 work, which comprises activities under the auspices of municipalities and counties, and activities undertaken in local areas by enterprises, organisations and citizens. These activities relate to issues such as resource consumption, waste management, and environmentally friendly behaviour in conjunction with municipal services, corporate production and citizens' everyday lives.

Local Agenda 21 activities take place to some extent in most of Denmark's municipalities and counties. In 2000 the Danish Parliament amended the Planning Act and imposed an obligation on counties and municipalities to report on their Local Agenda 21 strategies at least every four years.

Local Agenda 21 work is to contribute to raising awareness of the necessity to see sustainable development in a global and long-term perspective while taking local action. More locally active citizens mean more people to take action for more sustainable development in their day-to-day activities. Citizens, municipalities, and counties must continue to support each other and find the solutions that are most appropriate locally. Direct cooperation between NGOs and enterprises can also contribute to the development of sustainable solutions, for instance environmental management or the use of new biotechnology by enterprises.

LOCAL AGENDA 21 IN ALBERTSLUND

Hyldebjergvej is a non-profit housing association in the Municipality of Albertslund. The area used to be socially deprived, but a broad range of environmental projects have helped promote a strong sense of solidarity, and today the area has developed into an attractive residential area. One of the environmental effects is a sharp decline in waste volumes for landfill, from 60-80 skips in the 1980s to about three today. In 1999, Hyldebjergvej was nominated for the Nordic Council's annual Nature and Environment Award.

Local Agenda 21 activities include a local waste-sorting and recycling plant, small lots leased by the residents for organic vegetables, a clothes-exchange stall, an organic café, as well as trials with toilets collecting urine to be used to fertilise fields.

The driving force behind the numerous activities has been strong and dynamic solidarity in the residential area combined with excellent coordination through Agenda Center Albertslund and the Culture-Ecology Association of Albertslund.

At workplaces, employees should be invited to contribute ideas and participate in restructuring plans for the promotion of sustainable development. Preliminary experience shows that this is profitable for enterprises, stimulates worker satisfaction, and is beneficial to the community at large.

Experience shows that it is possible to make many people committed to local issues and tasks. Successful public participation depends on the existence of clearly defined cooperative relationships, the achievement of visible results, and that it is interesting to participate. In a broader perspective, we must focus on ways of ensuring that everyone participates.

A wide array of players already contribute to the Danish Agenda 21 activities, participating in processes aimed at promoting sustainable development in their individual ways and at their own level. The number of players and processes in Danish Agenda 21 activities is likely to increase in the foreseeable future up to the World Summit on Sustainable Development in 2002 in Johannesburg, South Africa. These contributions should be seen as an integral part of overall Danish activities.

Objectives and activities in the future

Denmark will work internationally to ensure that the principles of the Aarhus Convention are employed more extensively. Both the other EU Member States and the EU at large are working to implement the Convention. Denmark is campaigning in favour of committing EU institutions and procedures to the same degree of openness, and to involving citizens in knowledge and decisions in the environmental field. Denmark will also take active steps to ensure that the principles of the Aarhus Convention are employed more extensively in global and international negotiations and reflected in global and international conventions and legal instruments. The World Summit on Sustainable Development in 2002 will offer an excellent opportunity to examine whether the Aarhus Convention can serve as a model at global level for applying Principle 10 of the Rio Declaration on the participation of all concerned citizens in the handling of environmental issues.

The Government will take action to ensure that citizens can participate actively in sustainable development initiatives and have access to readily compre-

hensible information and background knowledge. In keeping with this Strategy, a set of national indicators for sustainable development is established. Several of these indicators may be an inspiration for the establishment of local indicators.

The Government will support initiatives and methods for improving citizens' possibilities to participate in decision-making processes on the environment. A specific area could relate to decisions to release GMOs.

Everyone should contribute to informing the general public about the impact of activities on the environment. Therefore, enterprises should provide information about their environmental initiatives so that neighbouring citizens know how the enterprises affect the environment and human health, or use resources. This information could come from green accounts or from enterprises' environmental management systems.

Local Agenda 21 activities should be further promoted. One way of doing this is to establish local indicators for sustainable development in Local Agenda 21 work. Local indicators can help shed light on the results of Local Agenda 21 work in a district or a municipality. In addition, local indicators can facilitate comparison with similar activities in other districts, municipalities or counties, thus making it possible to compare local objectives and results with national ones. Central Government will continue to encourage this by providing guidance and inspiration, and by passing on experience from Local Agenda 21 strategies and activities. In November 2002, in cooperation with Kolding Municipality, Local Government Denmark, and the Association of County Councils in Denmark, as well as the international environment organisations, ICLEI and Green Network, the Ministry of the Environment will hold a large Local Agenda 21 conference which is to follow up the Johannesburg UN conference and outline Local Agenda 21 work for the forthcoming years.



17 Implementation, monitoring of progress and follow-up

This is Denmark's National Strategy for Sustainable Development. Implementation of the Strategy calls for active interplay and dialogue between a wide range of players. To achieve the objectives in this Strategy, players in the various sectors, as well as organisations and citizens, must take action at national and local levels. A system of indicators will contribute to monitoring progress in achieving the objectives of the Strategy .

Implementation - a common responsibility

The Strategy forms the starting point for on-going dialogue on objectives and means for achieving sustainable development. The Strategy will also be the signal for launching concrete initiatives. The Strategy has a long-term as well as a cross-sectoral perspective: The Strategy is a combined framework for Denmark's national initiatives for sustainable development. It provides the framework for considerations in connection with the formulation and implementation of future strategies and action plans.

The visions and objectives of the Strategy will be followed up by action plans, programmes and concrete initiatives within the sectors and areas con-

cerned. Action plans include the Action Plan on the Aquatic Environment III, an action plan for biodiversity, a strategy regarding relationships between environmental factors and health, and a report on green market economy.

However, formulating action plans and strategies is not enough. The strategies must be implemented. The players in the individual sectors must assume responsibility, promote the strategy objectives and take action within their own areas. The objectives of decoupling economic growth from environmental impacts, integrating environmental considerations into sectors and promoting sustainable development are important and should be taken into account in all sector work.

Regular dialogue and public participation are crucial to the implementation of the Strategy objectives. Dialogue on the framework, objectives, instruments and cross-sectoral themes of the Strategy is necessary to enable development of relevant solutions and ensure they are firmly embedded in society. Active participation of players at all levels in society is necessary.

Many people are already making considerable efforts to promote sustainable development and could play an important role when it comes to implementing the strategy. This applies to citizens, green organisations, trade associations, and other interest groups. NGOs are encouraged to participate in implementing the Strategy at local, regional and national levels.

Monitoring and follow-up - from objectives to results

Sustainable development is a long-term process with long-term objectives. It is necessary to monitor closely whether developments are moving forward, and that results are being achieved. Therefore, the Government will continuously monitor and report on the progress made in implementing the Strategy and achieving results that point in the direction of sustainable development. This will present an opportunity to take further initiatives, if required, and make adjustments to counteract any negative developments.

Indicators will be a basis for reporting on progress towards sustainable development. In connection with the Strategy, a set of indicators have been developed that can follow developments in relation to key objectives and activities in the Strategy for Sustainable Development.

The set of indicators comprises a small number of overall key indicators and a set of indicators for each of the targets of the Strategy. The indicators focus on developments and results in relation to the Strategy objectives for sustainable development.

The indicators will be continuously developed in the light of international work on indicators for sustainable development. The indicators will be presented every year on a special website for sustainable development.

Against the background of reports on the results achieved in implementing the Strategy, the Government will take steps to assess and adjust the National Strategy for Sustainable Development. The strategy will be adjusted on a regular basis, and the need for new targets will be assessed.

Annex

List of indicators for Denmark's National Strategy for Sustainable Development

A set of indicators has been established in connection with Denmark's National Strategy for Sustainable Development. These help elucidate and illustrate progress in achieving sustainable development. The indicators have been chosen on the basis of goals and initiatives in the National Strategy for Sustainable Development, and on the basis of proposals and views expressed in public debate.

The indicators will be an important element in ongoing reporting of developments and results in connection with goals and initiatives. The indicators will comprise much of the basis for regular adjustments to goals and initiatives. The indicators will show developments within the various action areas. The indicators will be published in an independent document every year.

3. Key indicators

<i>Objectives and principles</i>	<i>Key indicators</i>
1. The welfare society must be developed and economic growth decoupled from environmental impacts	N1. GDP per capita N2: Decoupling illustrated by environmental impacts for 4 factors (greenhouse gases, runoffs of nutrients into the sea, emissions of acidifying compounds and emissions to air) in relation to GDP N3. Genuine Savings N4. Employment analysed by age group
2. There must be a safe and healthy environment for everyone, and we must maintain a high level of protection.	N5. Average life expectancy (analysed between men and women) N6. Gross emissions in mill. tonnes CO₂ equivalents analysed between industry, transport, households, agriculture, and waste N7. Number of chemicals which have been classified
3. We must secure a high degree of biodiversity and protect ecosystems.	N8. Area of natural habitats (deciduous forest, original forest, meadow, dry grassland, moor, and marshland)
4. Resources must be used more efficiently	N9. Resource flows for 3 factors (energy consumption, drinking water consumption, and total waste volume) in relation to GDP
5. We must take action at international level	N10. Assistance funds as a percentage of GNI, in total and analysed between development and environmental assistance, and assistance to neighbouring countries
6. Environmental considerations must be taken into account in all sectors.	N11. and N12. Each year, a number of sectors are singled out and their environmental profiles are illustrated by an index for three selected environmental impacts in relation to developments in the sector in question
7. The market must support sustainable development	N13. Number of eco-labelled products, analysed as the number of trade names
8. Sustainable development is a shared responsibility, and we must measure progress.	N14. Number of EMAS and ISO registered enterprises

4. Climate change

<i>Objectives and activities</i>	<i>Indicators</i>
The atmospheric content of greenhouse gases must be stabilised at a level sufficiently low to prevent hazardous anthropogenic impacts on the climate.	4.1 The atmospheric concentration of CO ₂
Unavoidable climate change must take place at a pace that allows ecosystems to adapt.	4.2. Average temperature worldwide and in Denmark 4.3. Effects of climate change in Denmark indicated by the beginning of the pollen season
In an international context, Denmark has a high emission of CO ₂ per capita, which gives us a special obligation	4.4. Global CO ₂ emissions per capita, and in a number of regions and countries, including Denmark
Denmark must make a significant contribution to the Kyoto Protocol. Greenhouse gas emissions must be reduced (21 per cent from 1990 to 2008-12)	4.5. Total gross greenhouse gas emissions in mill. tonnes CO ₂ equivalents - and analysed between CO ₂ , N ₂ O, CH ₄ , HFC, PFC and SF ₆ 4.6. CO ₂ sequestration (absorption) in mill. tonnes. 4.7. Total gross greenhouse gas emissions in mill. tonnes CO ₂ equivalents in relation to GNP at constant prices 4.8. Total net (gross less sinks) greenhouse gas emissions in mill. tonnes CO ₂ equivalents
All possibilities for reduction of greenhouse gases are to be utilised in the most cost-effective way	4.9. Gross emissions in mill. tonnes CO ₂ equivalents analysed between industry, transport, households, and waste

5. Biodiversity – Nature protection and public access to nature

<i>Objectives and activities</i>	<i>Indicators</i>
Strengthen and target activities to safeguard biodiversity and nature protection.	5.1. Area of natural habitats (deciduous forest, original forest, meadow, dry grassland, moor, and marshland)
The Government will be intensifying its efforts to protect and restore habitats for indigenous animals and plants in order to have large viable populations on land and in freshwater and marine environments in accordance with the objective of the EU Sixth Environment Action Programme to stop the loss of biodiversity by the year 2010.	5.2. Conservation status for species and natural habitats in Natura 2000 sites 5.3. Species in Denmark which are on the Red List 5.4. Areas acquired by the State for nature management 5.5. Danish watercourse fauna index (water quality in watercourses) and transparency (water quality in lakes) 5.6. Transgression of critical loads for ammonia and nitrogen oxides (for moors, upland moors, dry grassland, etc.) 5.7. Nitrogen and phosphorus discharges into the sea in tonnes per year

6. Environment and health

<i>Objectives and activities</i>	<i>Indicators</i>
Denmark must reduce harmful impacts on human health and on the environment to the greatest possible extent, no matter what the source.	6.1. Incidences of asthmatic bronchitis and asthma, allergic coryza (hay fever and non-seasonal colds), and allergic eczema in 1987, 1994 and 2000
6.1 Chemicals	
<i>Objectives and activities</i>	<i>Indicators</i>
The use of chemicals must be limited, and whenever relevant, any chemicals with harmful effects on human and animal health and on nature must be prohibited so that emissions of chemicals which pose a threat to health and the environment are stopped within the time span of one generation.	6.1.1. Number of chemicals classified
To retain a high level of protection in assessments of the effects of plant protection products and biocides on health and the environment.	6.1.2. The volume of sales of pesticide active substances classified as being particularly hazardous
6.2. Environmental quality and other environmental factors	
<i>Objectives and activities</i>	<i>Indicators</i>
Denmark must reduce acidification, eutrophication and ground-level ozone	6.2.1. Emissions of SO₂, NO_x, VOC and NH₃
Ozone depletion high in the atmosphere, must be stopped.	6.2.2. Ozone layer thickness
It is important to continue our measures against soil contamination.	6.2.3. Number of sites where remediation of soil contamination has been carried out in order to enable housing and/or drinking water supply (number of remediations per year and analysed between types of financing)
Maintain activities to ensure clean drinking water	6.2.4. Number of occurrences of pesticides in groundwater used for drinking water
Pathogenic micro-organisms must not be dispersed in the environment to a damaging extent.	6.2.5. Bathing areas where water quality is so poor that bathing is not recommended
6.3. Food	
<i>Objectives and activities</i>	<i>Indicators</i>
Safety assessments, risk analyses and control of chemical pollutants and chemicals in production must be continued and strengthened.	6.3.1. Level of selected incidences of chemical pollution in food
	6.3.2.a. PCBs in cod liver from Danish waters 1998-2000
	6.3.2.b Consumption of 4 heavy metals in Danish diets (number of foods) in three 5-year monitoring periods
6.4. Health and safety	
<i>Objectives and activities</i>	<i>Indicators</i>
Work-related injuries caused by exposure to carcinogenic avoided	6.4.1. Selected reported work-related disorders

7. Resources and resource efficiency

<i>Objectives and activities</i>	<i>Indicators</i>
Resource consumption must be reduced.	<p>7.1. Denmark's total consumption of selected resources (raw and ancillary materials)</p> <p>7.2. Every third year: Total consumption of material resources (TMR) per inhabitant</p>
Environmental impacts from waste must be prevented	<p>7.3. Developments in waste generation and GDP,</p> <p>7.4. Waste volume recycled in absolute figures and in relation to total waste volume in Denmark</p> <p>7.5. Waste volume in Denmark from the following 4 sectors; households, services, industry, and building and construction analysed in absolute figures and in relation to financial activity in the sectors</p>
Sustainable use of raw materials in Denmark must be achieved	<p>7.6. Recycling in the building and construction sector as a percentage of recovered raw materials.</p> <p>7.7. Known reserves in the North Sea in relation to the current annual production of oil and gas respectively</p>
Various considerations must be combined to minimise conflicts between different uses of the same piece of land. Outside urban areas, diversified use must be promoted.	<p>7.8. Development in area utilisation (km²) analysed by the following area types: nature, forest, farmland, houses, and roads in the countryside and in towns and cities</p>

8. Denmark's international activities

<i>Objectives and activities</i>	<i>Indicators</i>
In close and binding cooperation with recipient countries, Denmark contributes significant support in areas relevant to sustainable development.	<p>8.1. Assistance funds as a percentage of GNI, in total and analysed between development and environmental assistance, and assistance to neighbouring countries</p> <p>8.2. Number of developing countries and Central and Eastern European countries which receive assistance from Denmark, and which have national strategies for sustainable development.</p>
Background indicators	
<i>UN Objectives</i>	<i>Indicator</i>
Halve the proportion of people who live in extreme poverty from 1990 to 2015	Number of people who live on less than one USD a day

9. Food production – Food safety, agriculture and fisheries

9.1. Food safety

<i>Objectives and activities</i>	<i>Indicator</i>
A crucial objective is to achieve a high level of food safety.	9.1. Number of incidences of illness caused by food

9.2. Agriculture

<i>Objectives and activities</i>	<i>Indicators</i>
Agricultural loss of nitrate, phosphorus and ammonia must be brought down to a level that represents no nuisance to humans, that safeguards the aquatic environment and vulnerable natural habitats, and that promotes a rich animal and plant life.	9.2.1. Balance sheet of inputs and outputs of N and P
Agriculture and the individual farmer have an important role to play in nature management. Nature must be protected and biodiversity ensured.	9.2.2. Total imports and exports of N and P by the agricultural sector
The Danish Government is hopeful that pesticide use can be minimised within the next few years.	9.2.3. Number of farms and areas which have green accounting/environmental management
The Government wants to see further development of the organic sector on the basis of consumer demand and common EU rules.	9.2.4 Area/ha designated as particularly sensitive land areas (SFL), including proportion of area with agro-environmental schemes
In the view of the Government, it is imperative for continued economic growth to occur without a corresponding growth in environmental impacts in harmony with nature and the environment.	9.2.5. Application frequency for pesticides on conventionally cultivated areas
	9.2.6. Number and area of organic farms
	9.2.7. Index: Environmental impacts from agriculture: 3 environmental impacts, eg. energy use, frequency of pesticide application, number of livestock, methane emissions, ammonia losses, and nitrogen surpluses in relation to changes in value of production.
	9.2.8. Number of farms, size and specialisation (harmonic and unharmonic farms)

9.3. Fisheries

<i>Objectives and activities</i>	<i>Indicators</i>
Fish stocks and ecosystems in the sea must be conserved	9.3.1. The number of fish stocks where the spawning biomass is within safe biological limits and the number of fisheries operated within safe biological limits
Amounts of discards must be reduced	9.3.2. The percentage of discards compared to the total catch (landings and discards) for selected species, analysed by fishing equipment used.
Fisheries must be made more selective so that unintentional by-catches of porpoise are avoided as far as possible and undesirable impacts on the seabed can be eliminated.	9.3.3. The extent of by-catches of porpoise (estimated) by Danish net fishing in the North Sea
Size of fleet and composition that is better adapted to catch possibilities	9.3.4. Capacity of the fishing fleet (tonnage, engine power, etc.) and composition

10. Forestry

<i>Objectives and activities</i>	<i>Indicators</i>
Near-nature and environmentally friendly forestry must be promoted	<p>10.1. Forest regeneration and establishment methods. These include the proportion of regeneration material consisting of native tree species. (From 2002 also stand structure (diversity in age and species) and the volume of deadwood in production forests)</p> <p>10.2. Forests with special nature considerations</p>
The public should be more involved in decisions concerning forests, and outdoor recreational activities should be enhanced	10.3. Number of visitors to forests
The forest area will be doubled, so that forest landscapes cover 20-25 per cent of Denmark in the course of a tree generation (80-100 years).	10.4. Total forest area

11. Industry, trade and services

<i>Objectives and activities</i>	<i>Indicators</i>
An efficient green market must be created and it must be easier for enterprises and investors to document their environmental efforts	11.1. Number of licenses for eco-labelled products
In this process, more eco-labelled products on the market and adequate information will motivate consumers to change their habits.	11.2. Number of eco-labelled products, analysed as the number of trade names
Enterprises must be provided more opportunity to compete on environmental efforts	11.3. Number of EMAS and ISO registered enterprises
Growth and the environment should increasingly go hand in hand.	<p>11.4. Index for manufacturing industry's resource efficiency - selected parameters (eg. energy and water, etc.) in relation to GDP</p> <p>11.5. Changes in industrial sector emissions of CO₂, NO_x, SO₂, and changes in GVA</p>
The environmental standard of existing and new tourism areas and tourist facilities should be improved.	11.6. Number/percentage of tourism enterprises that participate in eco-labelling schemes
Blue flags are to draw public attention to clean and safe facilities at beaches and in marinas.	11.7. Number of "Blue Flag" beaches and marinas

12. Transport

Objectives and activities	Indicators
Efficient mobility must be ensured through public and private transport solutions.	12.1. Average length of trip analysed between activities
Decouple growth in the impact of transport on the environment and health from economic growth.	12.2. Traffic performed/GDP 12.3. Passenger performed work and freight performed work analysed by means of transport
Air pollution from traffic constitutes no health hazard to the population.	12.4. Transport emissions (CO ₂ , CO, PM ₁₀ , NO _x , NMVOC and SO ₂)
Transport must be safe for everyone	12.5. Number of fatalities analysed by means of transport
The supply of and demand for environmentally friendly transport options will be increased.	12.6. Average energy efficiency for passenger transport and freight transport 12.7. Average capacity utilisation and average load for lorries over 6 tonnes 12.8. Energy efficiency of new cars

13. Energy

Objectives and activities	Indicators
The aim is to bring down CO ₂ emissions by 20 per cent of 1988 levels by 2005	13.1. CO ₂ emissions in mill. tonnes actual and adjusted, and in relation to gross energy consumption
SO ₂ emissions must be reduced by approximately 30 per cent of 1998 levels by the end of 2010	13.2. SO ₂ emissions in mill. tonnes in actual figures and in relation to gross energy consumption in PJ
NO _x emissions must be reduced by approximately 45 per cent of 1998 levels by the end of 2010.	13.3. NO _x emissions in mill. tonnes in relation to gross energy consumption in PJ
Enhanced planning, coordination and prioritisation of overall energy-saving initiatives.	13.4.a Gross energy consumption in PJ 13.4.b Final energy consumption in PJ 13.5. Energy intensity for all production trades, and for agriculture and horticulture 13.6. Combined heat and power as a proportion of thermal electricity production

14. Urban and housing development

<i>Objectives and activities</i>	<i>Indicators</i>
Urban areas must be put to better use	14.1. Area for urbanisation
New urban structures must ensure efficient utilisation of the overall transport system	14.2. Proportion of recently built office facilities in the Greater Copenhagen Area, which has been built within a distance of 500 metres from an S-train station
The utility value, flexibility and quality of buildings must be enhanced	14.3. Proportion of all dwellings which have district heating, washing facilities, and toilets
We should improve the quality of urban recreation.	14.4. Proportion of the population in Copenhagen and Aalborg who have access to a green area (km²) within a distance of 15 minutes of walking
Further requirements for energy and resource consumption	14.5. Energy consumption for heating in the city as a whole 14.6. Index for changes in electricity consumption, water consumption and waste volumes in dwellings/households
The supply of housing must grow	14.7. Number of newly erected rented dwellings analysed by different types of housing

15. Instruments and knowledge base

<i>Objectives and activities</i>	<i>Indicators</i>
Decisions at all levels should be assessed in relation to the environment.	15.1. Environmental impact assessments of bills
The public sector wants to take the lead by, amongst other things, including environmental considerations in procurement policy.	15.2. Proportion of government institutions which have reported a green procurement policy
Training and education will contribute to disseminating knowledge about sustainable development	15.3. Number of schools with Green Flags 15.4. Number of nature guides
We need a solid knowledge base for making the right decisions and prioritising activities. Expenditure on research and development should be increased to a level of about 3 per cent of GDP by 2010.	15.5. Total funds for research and development

16. Public participation and Local Agenda 21

<i>Objectives and activities</i>	<i>Indicators</i>
Local Agenda 21 activities should be further promoted.	16.1. Number of counties and municipalities which have started working with Local Agenda 21

