Executive summary

Following a consultative referendum in 1982, Greenland withdrew from the European Community on 1 February 1985, when the Treaty of Withdrawal of 13 March 1984 (hereinafter "the Greenland Treaty") came into force and Greenland became one of the Overseas Countries and Territories (OCTs) associated with the Community. The Greenland Treaty emphasises cooperation and development aspects. More precisely, its preamble refers to "arrangements being introduced which permit close and lasting links between the Community and Greenland to be maintained and mutual interests, notably the development needs of Greenland, to be taken into account".

Greenland remains a special case. It is a territory remote from the Union, with a small population of 56,901 (2006) on the world’s largest island facing hugely challenging climatic conditions and a particular social and economic situation, as well as a cultural mix that is a legacy of its history and special relationship with Denmark. Greenland’s economy is characterised by a very large and predominant public sector and an underdeveloped private sector, and is highly dependent on the block grants allocated by the Danish government as well as the financial transfers from the European Community.

In 2000, the Greenland Home Rule Government (hereinafter "the Government") developed a Structural Policy Plan which was adopted by the Parliament and comprised three main pillars: a shift in subsidy policy towards a more market-oriented society, the promotion of trade and industry, and an improvement in education and labour-market policy. The main goal of this reform programme is to ensure greater economic self-sufficiency.

Against this background, the Government stressed in 2006 the need to increase the percentage of the workforce with a higher education, strengthen the housing sector in the centres of economic growth and improve workforce mobility.

Consequently, there has been a clear and concrete focus on education and training since 2004, reflected in an extraordinary increase in the budget for education and training from 2004 onwards, based on the report entitled "Progress through Education and Competency Development". In 2006, the Parliament adopted a "Greenland Education Programme" presented by the Government and which contains an overall education and training strategy up until 2020.

In view of the above, education and training is selected as the focal sector for cooperation between the European Community and the Greenland Home Rule Government outside fisheries. Community financial assistance should be granted as sector budget support, taking into account Greenland’s sound macroeconomic policy and public finance management, including against the background of its special relationship with Denmark. In the first phase of the Greenland Education Programme, emphasis is put primarily on vocational training, the
acquisition of real qualifications for jobs above unskilled level and real competence courses for unskilled persons.

This Programming Document is in line with the new Northern Dimension policy as described in the Policy Framework Document adopted at the Northern Dimension Summit of November 2006.

PART A. COOPERATION STRATEGY

Chapter 1: EC cooperation objectives

The cooperation between Greenland and the European Community permits close and lasting links to be maintained and mutual interests – notably Greenland's development needs – to be taken into account. The partnership between Greenland and the Community aims in particular at broadening and strengthening relations between them and contributing to Greenland's sustainable development. One of the partnership's objectives is to provide a basis for economic, scientific, educational and cultural cooperation founded on the principles of mutual responsibility and mutual support. This is in accordance with the purpose of the EC-OCT association, as laid down in Article 182 of the Treaty establishing the European Community: to promote the OCTs' economic and social development and to establish close economic relations between them and the Community as a whole.

Chapter 2: Policy agenda of the Greenland Home Rule Government

Overall policy

Greenland faces several particular challenges, linked not least to its remoteness, climatic conditions and small population. Only about 15% of Greenland’s land area is free of ice. The rest is covered by the world’s second-largest ice cap. Greenland is the world’s largest island, but with a population of only 56 901 (2006). This small population is scattered widely over the country: fourteen of the 18 towns have a population of over 1 000, and the capital Nuuk has a population of only 16 000. These towns account for about three quarters of the population, whereas the rest live in settlements, the majority of which have a population of under 100. Greenland’s vastness, the small size of its towns and the harsh climate and environment also entail a specific challenge in terms of infrastructure. For example, the towns are not connected by roads and are accessible only by boat or plane. This reinforces the isolation of Greenland's widely scattered population.

The increasing globalisation of trade and business also constitutes a serious challenge for large parts of Greenland’s principal business, in both the fisheries and other sectors. Compared to its competitors on the world market, the cost level in Greenland is high (salary, transport, etc.), while at the same time the productivity and educational level is low.

The need to tackle this issue is reflected in the Government's political priorities, focused on education, development of workforce competencies and structural policy reforms to improve the investment climate for the business community. However, these efforts should be seen in conjunction with challenges in other sectors, among which social, health and housing
conditions in particular that interfere with the possibility of completing education and training programmes and with labour market mobility.

In 2000 the Government drew up a Structural Policy Plan covering approximately 15 years, which was also adopted by Parliament and comprised three main pillars: a shift in subsidy policy towards a more market-oriented society, promoting trade and industry, and improving education and labour market policy. The macroeconomic restructuring and implementation of the Structural Policy Plan have, among other things, resulted in the privatisation of Government-owned companies. Privatisation was initiated for a wide range of Government-owned companies, including shipyards, supermarkets, a mineral resources service company, a publisher and a brewery/bottling plant. Another outcome of the Structural Policy Plan relates to changes in prices for, for example, electricity, water and heat. Subsidies in these areas are gradually making way for market-oriented prices. For promotion of trade and industry, a policy aimed at improved trading structures has been implemented and a venture company established to give advice on trade possibilities for small and medium-sized enterprises and to lend risk capital for innovative ideas, implying an increase in initiatives from small-sized companies on trade and industry. Greenland has also started a project to brand Greenland and its products in specified European and US markets.

Regarding the improvement of education and labour market policy, structural policy is marked by large investments in education and training, with initiatives taken together with the Danish Government and for which the Community's financial assistance is sought. In 2006, the Government stressed in its annual Political and Economic Report1 the need to increase the percentage of the workforce with a higher education, to strengthen the housing sector in the centres of economic growth and to improve workforce mobility.

The Government has adopted an integrated policy aimed at contributing to a higher standard of living and quality of life and at ensuring continuous economic progress in the increasingly globalised world economy, through provision of a critical mass of qualified, flexible and competitive workforce.

**Greenland Education Programme**

In this context, there has been a clear and concrete focus on education and training since 2002 with the overall reform of the basic primary education sector, which in 2004 naturally led to the formulation of a new policy and action plan covering post-primary education and training.2 This was followed by a more elaborate programme in 2005 that was approved by the Parliament.

The Finance Acts for 2004, 2005, 2006 and 2007 thus included extraordinary funding for education and training in the coming years, based on the report entitled "Progress through Education and Competency Development". The Finance Acts also contain projections for the years to come that reflect the importance attached to a continued extraordinary effort on education and training. In this respect it should be noted that Greenland’s Education

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1 "Political and Economic Report" (PØB), 2006.
2 Report entitled "Progress through Education and Competency Development", September 2004 (Ministry of Culture, Education, Research and the Church; Ministry of Trade, Agriculture and the Labour Market; and the Finance Ministry), PØB 2005.
Programme\textsuperscript{3}, which was adopted by Parliament in March 2006, comprises two phases, Phase 1 running until 2012 and Phase 2 until 2020.

The Greenland Education Programme is the start of a long-term strategy to contribute to Greenland's development into a more self-governing economy in which a well-educated and well-trained population is paramount. Today, the skills level of Greenland's workforce is at a critically low point. Of the potential workforce of 35 000 to 40 000 persons aged 15-62, only about one third have an education that qualifies them for a job above unskilled level and some 80% of unemployed workers are unskilled. The educational system needs to be reformed to tackle this situation, as enrolment in training or education is very low and the dropout rate high, which perpetuates the workforce’s low level of education and training in the long run. This deprives many citizens of well-being and quality of life, and it hampers sound and sustainable economic development.

Another challenge concerns the special relationship between Greenland and Denmark and the ensuing cultural mix. The majority of Greenland’s population is Inuit, but there is also a large Danish group of inhabitants (approximately 7 000 out of the total population of 56 901 were born in Denmark). The Greenlandic language, Kalaallisut, is a polysynthetic language not similar to the Danish language. Greenlandic is the main language, but a large share of the population speaks Danish and some also English. Some speak only Greenlandic or only Danish.

A lack of foreign language skills is however a substantial barrier today for young people in the educational system and for the workforce’s in-service training opportunities. Both Danish and English are compulsory school subjects and participation in the educational system today requires in general fluency in Danish, because instructors are often Danish-speaking only and educational material is mainly available in Danish and only to a very small extent in Greenlandic.

This sharply contrasts with Greenland’s 22 000 to 26 000 unskilled workers who are at a high risk of unemployment because they lack language competencies. At the same time, a significant effort to preserve and develop the Greenlandic language and the Inuit culture is a priority of the coalition Government and is part of broader international initiatives on the rights of indigenous people.

Against the background of the special relationship with Denmark, and taking into account that an increase in the number of people in the workforce in Greenland with an educational background and greater knowledge and skills is a cornerstone of the Greenland Education Programme, it is essential that expertise is retained in Greenland.

A lack of education and training takes a particularly high toll on youth and people who support families. A low level of education and training represents an especially high risk for these groups and generates high social and economic costs. Hence, the first phase of the Greenland Education Programme presents an overall strategy to strengthen two target groups (without excluding other persons), namely on the one hand public school leavers who drop out of the educational system after graduation, and on the other hand unskilled workers under 50 who are unemployed, in exposed trades and/or the family breadwinners. Moreover, the Government proposes directing a strategic initiative at the sectors that can yield economic

\textsuperscript{3} Report entitled "The Greenland Home Rule Government Proposal for an Education Plan", December 2005 (Ministry of Culture, Education, Research and the Church; Ministry of Trade, Agriculture and the Labour Market; and the Finance Ministry).
growth or where demand for specialised manpower is high, like tourism, construction, mineral resources, health, social science and education. From a gender perspective, the programme pays special attention to men, not least young men, who are the most vulnerable in relation to the economic and social challenges in Greenland. This is of course without prejudice to the attention paid to the social situation of women in the Government's overall efforts.

In Phase 2 of Greenland’s Education Programme, which covers the period 2013-2020, the focus on the unskilled workforce is maintained, but will shift to higher education and both the expansion and diversification of the provision of education and training. This logically flows from the expected results of Phase 1 of Greenland’s Education Programme. Phase 1 runs until 2012, but 2013 will be a transition year between Phase 1 and Phase 2.

Ownership and commitment

On a preliminary note, it should be stressed that Parliament has approved the overall and education & training policy presented by the Government. However, the preparation of Greenland’s Education Programme also involved stakeholders across the country, including boards and committees on the educational institutions as well as the national "Competence Development Council", which has members representing the trade unions, the employers' federations and the educational institutions. The national "Competence Development Council" continues to monitor implementation and development of the Greenland Education Programme at the Council’s four annual meetings. The association of the local municipalities "KANUKOKA" was also involved in preparing this reform.

As Greenland has a small population and few media, knowledge about national strategies is easily spread and discussed among citizens. Citizens concerned and involved with education and training are aware of the reform, and participate in the debate, for example in the national media. Greenland's politicians and citizens alike share a common belief in the Greenland Education Programme as the general answer and solution to the country’s most urgent goal of becoming a self-governing country, with a higher standard of living and quality of life through development of better education, skills and knowledge.

Institutional capacity

In charge of implementing the Greenland Education Programme is the Ministry of Labour and Vocational Training, in close collaboration with other ministries and stakeholders. To realise a project of this size, Greenland is focusing on major pre-conditions, e.g. annexes to schools are being built, along with student residence halls and local Piareersarfitt centres, which provide guidance for job seekers and applicants for admission to educational and training programmes. The Ministry of Finance is involved in all the stages of programme implementation and close links and mechanisms are already in place to ensure coordination with all the implementing government departments and with the Ministry of Labour and Vocational Training in particular.

Besides the Ministry of Labour and Vocational Training, the Ministry of Culture, Education, Research and Ecclesiastical Affairs, the Ministry of Finance, the Ministry of Health, the Ministry of Industry, the Ministry of Family Affairs, and the Ministry of Minerals and Petroleum are involved in the implementation of Greenland’s Education Programme.

There was a Government reorganisation in 2006, which was closely linked to an analysis of the institutional needs related to implementation of the Greenland Education Programme. This
led to establishing the Ministry of Labour and Vocational Training as the organisational centre of initiatives regarding the Greenland Education Programme. The aim of this reform was to ensure coherence and coordination and a continued focus on the Greenland Education Programme. The Ministry of Labour and Vocational Training has approximately 24 employees. Resources for two extra employees from 2007 onwards have been allocated to the Ministry to secure the programme's smooth implementation.

The Government’s internal steering group on the Greenland Education Programme meets approximately each month and monitors overall implementation of the Programme. The internal steering group consist of the deputy ministers of the involved ministries and the director of the association of local municipalities "KANUKOKA". The Ministry of Labour and Vocational Training functions as the steering group’s secretariat, but overall responsibility and control regarding the Greenland Education Programme is shared among the different ministries with the deputy ministers in charge.

The local guidance and introduction centres called "Piareersarfitt" work on the basis of service contracts between the local municipalities and the Government. The Piareersarfitt centres are pivotal in the efforts to achieve many of the Greenland Education Programme's goals. The Piareersarfitt centres function as local points of access for guidance on education, training and apprenticeship programmes, job placement for the unemployed and the development of individual action plans. Therefore, it is highly important that these centres function and have the adequate resources for their tasks.

The Piareersarfitt centres were established as part of the Greenland Education Programme in October 2006 and are still being developed around the country. An internal working group in the Ministry of Education and Vocational Training plans central activities and efforts regarding the centres, for example regarding courses and newsletters, and stands by for local on-demand help if needed. This internal working group meets each week.

The education sector itself comprises 24 primary and lower secondary schools in the cities, 61 primary and lower secondary schools in the settlements, three special schools at primary and lower secondary level, 11 vocational schools, five upper secondary schools and three higher educational institutions, most of them at university level. There is also a specific institution responsible for developing teaching materials, methods, techniques and courses. To satisfy the need for increased capacity that will result from the implementation of the Greenland Education Programme, funding is allocated to expand schools and build additional student residences. This is being monitored and planned within the Government’s internal steering group.

*Lessons learned*

It is difficult to draw lessons from relevant similar programmes in Greenland because until 31 December 2006 the Community’s financial cooperation with Greenland was entirely channelled through the fisheries agreement between the Community and Greenland. This cooperation was not subject to compliance with the usual budgetary rules on development cooperation, and the part of the financial compensation that could not be considered to be in return for fishing possibilities was thus never subject to any programming between the Community and Greenland. It is only under the new comprehensive partnership for the sustainable development of Greenland, from 1 January 2007, that a clear distinction is made between (a) the specific fisheries partnership agreement, negotiated according to the general
rules and principles for such agreements, and (b) cooperation in areas other than fisheries. Consequently, the new Fisheries Partnership Agreement deals exclusively with cooperation in the field of fisheries. Besides fisheries arrangements as such, it also includes budgetary support, which is, however, strictly limited to the fisheries sector.

Sector budget

Greenland’s overall budget for 2007 totals approximately EUR 700 million. Of this amount, EUR 400 million is funded by the block grant from Denmark, almost EUR 200 million by tax revenues and EUR 124 million by other revenues, factoring in the Community’s financial assistance for the sustainable development of Greenland (EUR 25 million) and the financial compensation based on the fisheries agreement between the Community and Greenland (EUR 17.8 million).

The general education budget accounts for about EUR 115 million in 2006, which corresponds to 16% of the total budget. A total of EUR 3.6 million in revenues from vocational schools under the vocational training programmes (mainly from the courses offered, but also from consultancy services provided and products manufactured) is included in this budget. The table attached in Annex 2 shows allocations to the various educational sectors in 2006 and 2007, which cover all education and training sectors, including public schools, upper secondary schools, vocational training programmes and higher educational programmes. The table also includes projections for the years 2008 until 2013. Greenland already applies a multi-annual budgeting system with three-year projections covering all budget chapters, including all the elements of the Greenland Education Programme.

It will be necessary to maintain a high level of education and training in future. As a result, expanded efforts in education and training up to 2020 will be accompanied by a continually rising level of expenditure. In time, of course, the focus may shift as the education level of the workforce rises, with an increasing percentage of the population becoming better educated. Consequently, the large chunk of funding currently intended for investment in educating and training the unskilled section of the workforce and unemployed unskilled workers will grow smaller over time, with the focus switching to other target groups. Moreover, the economic outturn of a better educated workforce will in itself gradually help fund the improved educational system.

Chapter 3: Assessment of the political, economic and social situation

Political situation

Greenland is a country with a special relationship to Denmark and – since the entry into force of the Greenland Treaty on 1 February 1985 – has been one of the Overseas Countries and Territories associated with the European Community in accordance with Part IV of the Treaty establishing the European Community. This followed a consultative referendum in Greenland in February 1982 in which 52% of the voters were in favour of altering Greenland's status in

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4 This corresponds to the conclusions of the Council of the European Union of 24 February 2003. See Minutes of the 2487th session of the Council of the European Union (GENERAL AFFAIRS and EXTERNAL RELATIONS), held in Brussels on 24 February 2003, doc. 6695/03 of 2 July 2003 and Bull. 1/2-2003, point 1.3.175.

5 The 2005 and 2006 POB reports.
the Community. Greenland’s internal status in relation to Denmark had already been changed by the Home Rule Act, which came into force on 1 May 1979 and gave Greenland the status of a distinct community with its own responsibilities and autonomy in most matters. ⁶

The Government consists of the Premier of Greenland and seven ministers, who are each responsible for one or several of the 13 ministries. ⁷ The current Government was elected in December 2005 and the next general elections will take place in December 2009 at the latest. The Government’s policy is supported by a coalition of two parties (Siumut and Atassut), ensuring its sustainability beyond the next general elections.

Greenland’s governance structure is decentralised with central Government in the capital Nuuk and 18 local municipalities across the country each covering a number of smaller settlements. The local municipalities have authority and responsibility regarding a number of tasks related to the educational and training system but support is provided by the Government in key areas. The local municipalities will undergo a reform in 2008 that will change their structure and regroup them into four larger municipalities.

**Economic situation**

Greenland has rapidly become a modern society based on the Danish welfare model. However, the strength of its economy remains dependent on external transfers and on exports, which account for 20% of disposable income, to which fisheries contribute over 90%. Thus, Denmark supports the budget with an annual transfer of approximately EUR 400 million, accounting for 56% of the national expenditure budget or 32% of total GDP, and which will be continued in the medium and long-term future.

From 2001 to 2006, the European Community contributed a further EUR 42.8 million per year on the basis the Fisheries Agreement with Greenland. The aggregate flow of approximately EUR 42.8 million from the European Community to Greenland will remain at the same level for the period 2007-2013, on the basis of the new fisheries partnership agreement (EUR 17.8 million) on the one hand, and the Community’s financial assistance for the sustainable development of Greenland (EUR 25 million) outside fisheries on the other.

Greenland’s long-term political goal is a more independent economy based on its own resources and greater integration into the world economy. While extreme climatic and geographical conditions and dependence on a limited number of natural resources make this goal challenging, they do not make it unattainable. Greenland’s economy is marked by a very large and predominant public sector and an underdeveloped private sector, dependence for its exports on a fisheries sector (formerly cod, now shrimp) that is especially vulnerable to external shocks, and a high wage level that undermines competitiveness.

However, in relative terms, Greenland fairs reasonably well in comparison to the EU. Its GDP per capita (EUR 24 000 in 2005) is below that of Denmark but is slightly above the EU average. However, one should not be misled by these figures and bear in mind that the block grants from Denmark account for 32% of Greenland’s total GDP.

Exploitation of minerals and oil could have considerable economic potential in the longer term, but no major deposits have been found yet, and even if they were the effect on employment might be quite modest. Tourism is another sector with great potential, but any

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⁶ See Appendix to the Act on Greenland Home Rule, where the areas of responsibility are defined.
development of this sector will have a very low starting point. The remainder of the business sector is almost exclusively directed at the domestic market and contributes less than one percent to total exports.

The Government publishes an annual political and economic report. Among other things, the recent reports pointed out that there has been economic growth in Greenland since 2004. The fisheries sector made a positive contribution to growth due to slightly higher revenues from shrimp fisheries in 2006 (despite an unchanged quota and low prices) and higher 2006 quotas for Greenland halibut. Growth is also expected in tourism and mineral resources exploitation. Consequently, overall growth is expected for 2006, albeit at a lower level. Against this background, the real GDP growth rate is expected to be 2 to 3% in 2006. As the terms of trade are expected to continue to deteriorate, albeit at a lower rate, primarily because of trends in oil prices, and because the block grant will basically remain unchanged in real terms, real disposable income is expected to grow slightly less than real GDP.

The 1999 OECD report on Greenland’s economy can be considered to be an important milestone for the country’s economy. As a follow-up to that report, the Government developed its Structural Policy Plan in 2000, which was adopted by Parliament that same year. As mentioned above, the plan aimed at shifting subsidy policy towards a more market-oriented society, promoting trade and industry and improving education and labour-market policy. This reform programme's main goal is to ensure greater economic self-sufficiency.

The main achievements of the macro-economic restructuring included, among other things, housing-benefit reform, privatisation, simplification of business development legislation, strengthening of the Competition Board in order to ensure a competitive environment, improvement of primary and secondary education and reduction in subsidies, launching training programmes linked to remote and mobile instruction, establishing the enterprise board to assist in provision of venture capital for new businesses or business takeovers, and provision of business advice for small and medium-sized enterprises through "Greenland Tourism Business Consulting" and its associate network.

The Government is fully committed to maintaining economic stability in the future and to continuing its commitment to the economic reform programme. Efforts are being made to increase productivity and competitiveness and diversify the economy into areas such as exploitation of mineral resources, tourism and the creation of small and medium-sized enterprises.

Social situation

The extreme climatic and geographical conditions in Greenland, its low population density and the economy's dependence on the fisheries and public sector and the block grants from Denmark also have a direct impact in social terms. They all put a strain on the willingness and motivation of people in low-income groups to work and study to achieve better living conditions. These people often do not have the necessary social network, personal abilities and relevant knowledge, while facing employers' high expectations and limited future prospects.

As a result of the recent economic growth unemployment has considerably dropped (from 1 950 people in 2003 to 1 550 in 2006). This favourable trend is expected to continue in 2006 and 2007, just as the unemployment rate is expected to decline even further. However, even if unemployment is declining, it should be stressed that unemployment in Greenland greatly
varies with the seasons and there are very significant discrepancies between the towns and the settlements, where employment opportunities are even further limited. It should also be noted that long-term unemployment does not figure in statistical data (at least for the time being, pending improvement of the statistical system), as the line between long-term unemployment and social dependency is very thin. Unemployment is concentrated among low- and unskilled workers and an expected decrease in employment in fisheries will primarily affect unskilled workers.

Because of insufficient education and skills (including in terms of languages), lack of self-responsibility and motivation, various personal and social problems, insufficient and inaccurate educationally relevant guidance, the most vulnerable people are school drop-outs – mostly young men – and people who support families. As indicated above, this corresponds to the two target groups under Phase 1 of the Greenland Education Programme. Their lack of success in achieving a higher standard of living is often perpetuated because of their social situation, including, for example, difficulties caused by poor housing conditions when they actually do take up education or training but have to move outside their hometown or settlement to do so.

**Environmental situation**

The main environmental challenges for Greenland relate to climate change and the melting of the ice cap (which will in the long term have a major impact on the world’s sea level but also in Greenland itself), the widespread presence of contaminants, in particular heavy metals and persistent organic pollutants in the Arctic environment generally and Greenland in particular, and concerns about conservation and the sustainable use of the Arctic fauna in Greenland. The elements have implications for the sustainable development of Greenland, not only because of their impact on the environment as such, but also because of their impact on society (in terms of, for example, internal migration, emigration and the loss of livelihoods from hunting, fishing and herding) and the economy (because of, for instance, the dwindling of fisheries and other coastal and marine resources and the deterioration of infrastructure built on permafrost soil).

The impact of climate change is both of local and global interest. With the world's second-largest ice cap, Greenland plays a crucial role in relation to global warming. The melting of the ice cap, which has already thinned visibly around its southern and eastern margins, would entail a significant rise in sea level worldwide. Moreover, the freshwater from the ice cap may also affect the thermohaline circulation in the oceans and by doing so cause further disruptive effects for the climate, ecosystems and marine life.

Trans-boundary pollution is brought to the Arctic region and Greenland by airstreams and rivers. Moreover, the very low population density and the fact that there are no roads between the towns complicate the management of waste using modern facilities. Even though the level of contamination – mostly from trans-boundary pollution – is relatively low, persistent organic pollutants and heavy metals are of particular concern, as they are bio-accumulating in the food chain and may represent a risk in particular to animals near the top of the food chain (such as marine mammals, birds and polar bears) and to the people that consume these animals (like fish and whales).

As far as the sustainable use of natural resources is concerned, the Government has recognised that a number of marine mammals and birds whose populations have been declining need greater protection.
Public finance management

In general, public finance management in Greenland is based on the Danish system and is transparent, comprehensive and accountable. The Government's budget structure is largely built on the Danish Government’s budget model and applies the same modern budgetary principles and discipline as the most advanced European countries. Main chapters are broken down by Ministry, which are again subdivided into main areas of actions showing in each case a full breakdown of salaries/wages, other recurrent expenditures and revenues. Activity tables for all recurrent expenditures within the budget highlight expected activity levels. The capital budget is found in a separate chapter but carries a clear reference to corresponding recurrent expenditures (e.g. expenditures for maintenance).

The Government is obliged by law to present the Treasury's audited accounts for the previous fiscal year (from 1 January to 31 December) to Parliament, no later than the autumn session. The accounts are audited by a firm of state-authorised public accountants selected by Parliament, supported by the Government’s internal audit service. The Government subsequently prepares a written report with comments on recommendations and remarks.

The accounts are presented to Parliament by the Minister of Finance and are then submitted to the Treasury Audit Committee. The Committee assesses the soundness of public finance management, comments on the external audit report and any criticism raised and may suggest improvements to the Treasury accounting system. The Committee reports back to the Parliament no later than the autumn session. Treasury Audit Committee recommendations ensure compliance with the Finance Act, with expenditures reflecting political priorities and monitoring and control of expenditure. Discretionary expenditures within the Greenland budget are kept to a minimum and the release of these funds is subject to strict approval procedures by the Ministry of Finance and the Parliament.

The Budget Law was approved by the Home Rule in 1999 and followed by a specific clarified budget regulation in 2002. This act lays down stringent principles for the management and control of budget expenditure, giving each minister the responsibility for sound financial management. The act is seen as an important development, and in the period from 2002 to 2005 resulted in the resignation of some ministers. According to the law, the Government must present the Treasury budget for the future fiscal year no later than the end of the spring session of Parliament of the year preceding the fiscal year in question.

As a result of accumulated deficits in the Greenland Treasury in the 1980s, a tight fiscal policy was pursued from 1988 onwards. A tight expenditure policy was maintained after 1990. A considerable increase in public expenditure from 1991 to 1992 resulted from the transfer of health services from Denmark to Greenland. This rise was offset by a corresponding increase in the Danish block grant.

From 1989 to 1997 the treasury accounts showed a surplus and repayment of foreign debt was initiated. Greenland has no foreign debt today. From 1998 an increase in public expenditure and an increasing absorption of some of the costs traditionally borne by the block grants from Denmark led to deterioration in Treasury results. This trend was altered in 1999, and the Treasury accounts have shown a small surplus ever since.

Compared to previous plans, the Finance Acts of 2002 and of 2003 introduced a tightening of fiscal policy. These were based on the Government decision to use fiscal policy as a counter-
cyclical equalisation instrument, as opposed to the former use of expansive fiscal policy as an economic recovery tool.

Whilst the annual budget has remained stable, the Ministry of Finance points out that the ability to maintain grants to specific sectors (construction, mining and fisheries) has been possible as a result of repayments of capital and interest from accrued loans. A further substantive repayment is expected in 2009 from the energy sector following a period of extensive investment. After 2009 there will be no further injections of capital. It should be noted that until 2005 the block grants from Denmark had been provided without conditions on the allocation of funding. For the first time, the grant for 2005 specified budgetary allocations for "education and the promotion of industry". It is expected that, as the grant comes under further scrutiny by the Danish Parliament, increased budgetary conditions may be imposed. It is likely, however, that fund allocations will be consistent with the Government’s societal and social expenditure.

Greenland's system of public finance management is not only comparable to the Danish system, although slightly simplified in line with the size of Greenland's overall budget, but there is also a certain form of scrutiny by Denmark. However, following the agreement in 2004 to earmark funds from the block grants for education and the promotion of industry, the Danish Government expressed confidence in Greenland's budget procedures to the extent that reporting on the full use of these funds will only take place every three years with the first report due at the end of 2007.

A detailed description of Greenland’s budget and accounting system is attached in Annex 4.

Chapter 4: EC response strategy

Given the situation outlined in Chapters 2 and 3, the following elements are the principal factors for consideration in the EC response strategy:

- The challenges presented by globalisation and Greenland’s unique geographical, climatic, demographical and socio-economic situation, which require innovative approaches.

- The Government's implementation of a medium-term strategy adopted by Parliament to reform the entire educational and training sector in order to increase the percentage of the workforce with a higher education and to improve workforce mobility.

- The Government's overall policy to respond to the challenges faced by Greenland in order to favour Greenland’s economic growth and integration in the world economy, ensure its self-governance and improve its population's standard of living and quality of life.

- The special relationship between Greenland and Denmark.

- Full complementarity with measures undertaken by the Greenland Home Rule Government and the contributions from the Government of Denmark.

Focal sector

Taking into account the initiatives being funded by the Greenland Home Rule Government and the Government of Denmark in connection with Greenland's most pressing needs and in
view of the Greenland Education Programme, Community financial assistance for the sustainable development of Greenland, covering the period 2007-2013, is to be used to support the ongoing reform of the education and training sector, with a particular focus on the education and training actions aimed at youth and at unemployed and unskilled workers.

**Consistency with EC policy objectives**

In this respect, it should be noted that under the so-called "Kayak Agreement" Greenland expressed a priority interest for future cooperation, besides fisheries, in the field of education and training. In this connection, Article 1(2)(c) of Council Decision 2006/526/EC of 17 July 2006 on relations between the European Community on the one hand, and Greenland and the Kingdom of Denmark on the other\(^8\) (hereinafter "the Greenland Decision") indicates that one of the objectives of the partnership between the Community and Greenland is to provide a basis for educational cooperation. Article 4(a) of the Greenland Decision also lists education and training as one of the possible areas of cooperation in support of sector policies and strategies. Moreover, the joint declaration of 27 June 2006 on the partnership\(^9\) confirms the intention of the Community and Greenland to strengthen their partnership and cooperation in, among other areas, education and training and to develop resources that have the potential to contribute towards the sustainable development of Greenland's economy and to remedy its structural problems. Consequently, supporting the reform of the education and training sector is consistent with the relevant EC policy objectives.

Although Community financial assistance for the sustainable development of Greenland for 2007-2013 focuses solely on education and training, the other areas of cooperation covered by the comprehensive partnership between the Community and Greenland are in no way neglected. On the one hand, cooperation in fisheries is dealt with under the new Fisheries Partnership Agreement, which is henceforth – as mentioned before – clearly distinct from cooperation for the sustainable development of Greenland in other areas.

On the other hand, Greenland is covered by the Overseas Association Decision.\(^10\) It participates actively in the EU-OCT partnership and dialogue and also has access – like all other OCTs – to a number of thematic budget lines and horizontal Community programmes. In this context, concrete possibilities are being, and will be, explored with the European Commission and also with the other OCTs, in particular in relation to cooperation in the field of environment and research (research on mineral resources, energy and climate change would be particularly relevant for Greenland and the EU, as well as research in the social sciences and participatory research with Inuit communities about development of viable economic activities adapted to their interests and contexts, with special attention to niche markets and speciality branding that can benefit from the investment in various types of education and training).

The fifth and sixth EC framework programmes for research have funded several important projects that were directly related to the understanding of climate change, environment and health in the Arctic region. Even if Greenlandic partners were not necessary part of them,
these projects have greatly helped in assessing and forecasting the extent of climate change and atmospheric sciences in this area (e.g. CONVECTION, GLIMPSE, GreenICE, ASOF, TRACTOR, SPICE, CRYOSTAT, RAMAS, etc). Some are still ongoing, like the large DAMOCLES Integrated Project that specifically focuses on the potential for a significantly reduced sea ice cover, and the impacts this might have on the environment and on human activities, both regionally and globally. Under the seventh EC framework programme for research, an important place has already been dedicated to fund a large Integrated Project on the stability of the thermohaline circulation, a key parameter for Greenland's climate. In the field of environment and health also, several projects are tackling issues relevant in Greenland, like reproductive toxicity of organochlorine pollutants (INUENDO) and the effect of brominated flame retardants in the food chain (FIRE).

Regarding food safety, the question of veterinary arrangements for the import of fisheries products from Greenland into the Community is also being examined with the European Commission.

Furthermore, the Northern Dimension Policy Framework Document adopted at the Northern Dimension Summit of 24 November 2006 in Helsinki is the basis of the new Northern Dimension policy shared by the European Union, the Russian Federation, Norway and Iceland. The geographical area defined for the Northern Dimension policy is from North-West Russia in the East to Iceland and Greenland in the West. The extensive Arctic and Sub-Arctic regions are considered one of the priority areas. Research, education and culture are listed among the Northern Dimension priority sectors listed in the Policy Framework Document. Furthermore, the Policy Framework Document states that this policy will continue to address several objectives of specific relevance in the North, i.e. its fragile environment, indigenous peoples' rights, cultural diversity, health and social well-being.

Funds available

The Financial Perspectives 2007-2013 have earmarked an amount of up to EUR 25 million per year (2006 prices) for cooperation for the sustainable development of Greenland. This amount, to be granted by means of budget support, allows the Community to make an essential contribution to the extraordinary effort to reform the education and training sector in Greenland, alongside the Government's efforts and Denmark's contribution.

Sector and partner coordination

The Danish Government also supports the Greenland Education Programme with an annual amount of EUR 3.3 million. The allocation of the 2005 and 2006 block grants from Denmark specified budgetary allocations for "education and the promotion of industry". Moreover, this support for education and training has already been fixed for the years 2008 to 2010, with amounts increasing to around EUR 6 million.

The Community’s financial assistance for the sustainable development of Greenland and the earmarked funding from the Danish block grants form part of the Government's total financing of the Greenland Education Programme, as part of an extraordinary effort to expand the existing educational and training system by increasing the volume of existing educational and training programmes and launching new educational and training initiatives. Coordination and consistency between measures taken by the Greenland Home Rule Government and the contributions from the Government of Denmark and the Community are therefore guaranteed. Greenland does not receive financial assistance from other sources.
PART B. INDICATIVE PROGRAMME

Chapter 5: Indicative programme

Objectives and expected results

Based on the strategic analysis in Chapter 4, the general objective of the programme for the sustainable development of Greenland for 2007-2013 is to contribute to a higher standard of living and quality of life in Greenland through developing better education, skills and knowledge. The programme's specific objectives are:

- To ensure Greenland’s continuous economic progress in the increasingly globalised world economy through provision of a critical mass of qualified, flexible and competitive workforce.
- To support the Government in its effort to reform the education and training sector, to be able to respond rapidly to the changing demands of the labour market.
- To focus on education and training opportunities for the most vulnerable target groups: youth, unskilled and unemployed workers.
- To retain expertise in Greenland and to recruit a larger share of the workforce locally.

It is expected that the programme will yield the following results:

- Improved planning, management, monitoring and evaluation of education and training provision, especially in the area of post-primary, vocational and skill training.
- Adequate financing for education and training with special focus on post-primary, vocational and skill training.
- Increased access to vocational education and skills training for both youth and unskilled and unemployed workers.
- Higher number and better quality and relevance of courses available for the target groups.
- Target groups motivated to take up and complete education and training offered.

Financing envelopes

The indicative allocations set aside for 2007-2013 amount to EUR 25 million per year (2006 prices, subject to indexation). Since the present programme does not provide for non-focal activities, the indicative amounts will be entirely used for the sector budget support programme in the field of education and training, without prejudice, however, to the fact that within the annual overall amount an indicative amount of at most 1% will be used to cover the resources required for the Commission to effectively administer the assistance.

Focal area

As indicated above, the focal area for the cooperation for the sustainable development of Greenland over 2007-2013, outside fisheries, is education and training, and no non-focal activities are scheduled to be funded in the context of this cooperation.
The above results will be achieved through implementing the following broad groups of activities:

- Organisation and development of preparatory educational courses and out-of-school remedial training.
- Organisation and development of courses offered to unskilled workers to increase their qualification to skilled level combined with job placement services (*Piareersarfiit* centres).
- Development of advanced-skills vocational training in strategic areas such as health, social, fisheries, tourism, mineral resources, etc.
- Provision of financial incentives, including grants systems.
- Further implementation of special measures to improve the completion rate and reduce the drop-out rate through better counselling, structural supervision, boarding school environments and sharing best practices between education and institutions.
- Expansion of two vocational schools and student dormitories and maintenance of educational facilities.
- Development and strengthening of the Government’s capacity to plan, monitor and supervise education provision, including the match between the supply of education/training programmes and the needs of industry and public sector, at both local and central level.

**Financing modalities**

The amount of EUR 25 million per year will be entirely used for sector budget support in the field of education and training. Article 11 of the Greenland Decision already stipulates that the Community’s financial assistance for cooperation with Greenland in sectors other than fisheries covering the period 2007-2013 is granted by means of budgetary support. Moreover, the Commission’s Communication of 4 April 2006 on a new comprehensive partnership with Greenland\(^\text{11}\) states that up to EUR 25 million per year has been earmarked for this purpose under Heading 4 of the Financial Perspectives 2007-2013, and that these funds should be granted to Greenland as sector budget support. It should be noted that Greenland is undertaking a comprehensive reform of its education and training sector, which started in 2002 and is set to be completed by 2020. Greenland’s eligibility for sector budget support can be confirmed, taking into account its sound macroeconomic policy and public finance management, including against the background of the special relationship with Denmark.

A first fixed tranche will be released for 2007. For the following years, fixed and variable tranches will be released in accordance with the degree to which results are achieved in the focal sector as measured against identified targets, monitoring indicators and sectoral policy commitments. The conditions for disbursement will be agreed between the Commission and the Government, on the basis of a list of possible sector indicators (see below). The assessment of attainment of these conditions will be based on annual implementation reports.

to be drawn up by Greenland and to be submitted to the Commission in accordance with the timetable to be set out in the financing agreements to be concluded each year between the Commission and Greenland. The programme is subject to a mid-term review in 2010 covering the cooperation outside fisheries between Greenland and the Community as a whole.

**Risks and assumptions**

Structural changes of local authorities may lead to a lack of attention being paid to establishment and development of the Piareersarfiit centres, which are primarily managed by local authorities but service the Ministry of Labour and Vocational Training on a contract basis. However, the Ministry of Labour and Vocational Training stands by to deliver on-demand assistance to the Piareersarfiit centres.

It is assumed that the local authorities and the Piareersarfiit centres will have the capacity to collect data for planning and monitoring purposes. In this respect, it should be noted that full establishment and development of the Suliaq system (see below) will lead to greater efficiency, reliability and coherence of data collection. The Ministry of Labour and Vocational Training is currently participating in the Government’s overall effort to unify statistical systems.

The expansion of the educational system will also increase the demand for teachers providing education and training. This might lead to a recruitment problem given the low unemployment rate in Denmark, but the Ministry of Labour and Vocational Training is monitoring the situation closely and efforts are being made to maximise the use of the existing human resources.

In accordance with current trends in industrial development, companies in Greenland might become increasingly reluctant to accept apprentices, which may lead to an insufficient number of apprenticeship places, in particular when the need for such places becomes greater as a result of the reform of the education sector. The Government is therefore including clauses on the acceptance of apprentices in the contracts it concludes with domestic and foreign companies. Moreover, the Ministry of Labour and Vocational Training has launched a campaign aimed at associating businesses with its efforts in the vocational training field.

**Performance monitoring**

The partnership based on the Greenland Decision provides an appropriate framework for continuous sector dialogue, in the sense that the Commission, Greenland and Denmark have to consult each other on the results of the partnership. This is also reflected in the fact that the annual implementation report to be drawn up by Greenland must be the fruit of a joint exercise. These reports will also constitute the basis for monitoring the programme, including as regards coordination and consistency between measures taken by the Government and Greenland and the contributions from the Government of Denmark and the Community.

So far performance measurement of the educational and training sector in Greenland has been based on the data collected by the Fund of Study Grants, Statistics Greenland and directly from the educational institutions. The data have been adequate and valid up to now, but will not be sufficient for the overall performance measurement of Greenland’s Education Programme. Therefore, the Ministry of Labour and Vocational Training has been developing a performance monitoring system called "Suliaq", which will cover Greenland's entire population and include key information about the labour market and the educational system.
**Suliaq** will be based on reliable statistical information from official government sources, Statistics Greenland and the local municipalities. The **Suliaq** system will be implemented in 2007.

In addition, the Ministry of Labour and Vocational Training will also evaluate implementation of Greenland’s Education Programme in relation to the expected change in the public’s perception of the value of good education, training and employment.

The above considerations demonstrate that the Government is willing to monitor sector performance and use performance as the determining criterion in the disbursement of budgetary support funds. Furthermore, there is currently an overall political focus on ensuring valid statistics on the labour market and the educational system as a whole. Other stakeholders, such as the national "Competence Development Council" and the local authorities, will also participate in monitoring the implementation of Greenland’s Education Programme.

**Indicators**

In view of the above, attention should be paid in particular to the following indicators when monitoring, reviewing and evaluating progress under the Greenland Education Programme:

1. The number of apprentices with a training place or school traineeship.
2. The number of students receiving study grants in post-elementary education.
3. The number of participants attending practical skills courses.
4. The percentage of the education sector budget in the overall budget.
5. The development of a fully fledged Medium-Term Expenditure Framework.
6. The average drop-out rate in post-elementary education.
7. Improvement of the performance monitoring system.

In parallel with the sector budget support programme being clearly outlined, the indicators will have to be further developed at the time of drafting the Financing Proposal, i.e. they will have to be quantified and time-bound. In accordance with Article 12 of the Greenland Decision, the conditions for disbursement will be agreed upon between the Commission and the Government in the annual financing agreements. In this respect, it is not required to translate all the indicators listed above into conditions for disbursement to be fulfilled each year.

**Cross-cutting issues**

Regarding gender, the Greenland Education Programme is aimed at the two most vulnerable target groups, both women and men, but will also pay special attention to men, not least young men, who are most affected by the economic and social challenges in Greenland. Moreover, the Government pays attention to the social situation of women in its overall efforts.
As regards the rights of indigenous people, a significant effort to preserve and develop the Greenlandic language and the Inuit culture is a priority of the coalition Government and is part of broader international initiatives on the rights of indigenous people. The Greenlandic language is an essential element considered in the Greenland Education Programme. Learning content should be contextualised by combining traditional Inuit knowledge and culture with scientific methodologies and knowledge.

Regarding the environment, environmental awareness is likely to increase as a result of improvements in general education levels, whereas the negative effect of student mobility from remote settlements to schools will to some extent be counteracted by efforts to promote e-learning. The main environmental challenges for Greenland relate to climate change and the melting of the ice cap (which will in the long-term have a major impact on the world’s sea-level but also in Greenland itself), the widespread presence of contaminants, in particular heavy metals and persistent organic pollutants in the Arctic environment generally and Greenland in particular, and concerns about conservation and the sustainable use of the Arctic fauna in Greenland. These issues are examined in an environmental profile drawn up by external consultants and attached in Annex 5. Greenland plays a central role in discussions between the European Commission, the OCTs and the related Member States on environmental issues and climate change, in the context of a Partnership Working Party established in accordance with Article 7 of the Overseas Association Decision. The purpose of these discussions is to formulate an integrated strategy on the environment in the OCTs (including Greenland), which should also be reflected in regional cooperation programmes between the OCTs, to be supported as part of the OCTs' association with the European Community in general.

In terms of institutional capacity development, the necessary measures are being taken by the Government to ensure strengthened capacities throughout the education sector, which is required for proper implementation of the Greenland Education Programme. The special relationship with Denmark and Greenland's adherence to the same modern principles as the most advanced European countries means that governance is not an issue.

Against this backdrop, the Community's support for the Greenland Education Programme does not involve cooperation on curriculum development. It should, however, be noted that issues such as Inuit culture and language, the environment and research form part and parcel of the Government's overall policy, and that several ministries are involved in implementing the Greenland Education Programme. These issues should therefore feature in education and training activities in Greenland.

Annexes

1. Summary data on Greenland
2. Greenland’s education sector budget
3. Organisational Chart of the Greenland Home Rule Government
4. Overview of Greenland’s budget and accounting system
5. Environmental Profile for Greenland
### Annex 1: Summary data on Greenland

<table>
<thead>
<tr>
<th>Subject</th>
<th>Result</th>
<th>Comments</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (km²)</td>
<td>2,166,086 km² (81% is covered by ice)</td>
<td></td>
<td>Statistics Greenland</td>
</tr>
<tr>
<td>Geographic region</td>
<td>In North Atlantic Ocean; latitude 60° south to 83° north and longitude 72° west to 11° west</td>
<td></td>
<td>Statistics Greenland</td>
</tr>
<tr>
<td>Membership of international organisations</td>
<td>Compare the list of organisations mentioned below</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population growth (average % past five years)</td>
<td>0.3%</td>
<td>2000-2004</td>
<td></td>
</tr>
<tr>
<td>Life expectancy at birth (years)</td>
<td>63.7 years for men; 70.0 years for women</td>
<td>2004</td>
<td>Statistics Greenland. Population 2006:2. Population movements 2004, Table 15</td>
</tr>
<tr>
<td>Illiteracy, total</td>
<td>n.a.</td>
<td>Compulsory education in more than 100 years.</td>
<td></td>
</tr>
<tr>
<td>Illiteracy, women (% age 15 and above)</td>
<td>n.a.</td>
<td>Compulsory education in more than 100 years.</td>
<td></td>
</tr>
<tr>
<td>Primary enrolment (% of relevant age group)</td>
<td>100%</td>
<td>Compulsory education, minimum 9 years.</td>
<td>KIIP</td>
</tr>
<tr>
<td>Secondary enrolment (% of relevant age group)</td>
<td>28.7%</td>
<td>Relevant age group: 16-19. Total: 3478 persons</td>
<td>SIIP, Study Grant Administration, Statistics Greenland</td>
</tr>
<tr>
<td>Secondary enrolment, women (% of relevant age group)</td>
<td>approx. 35%</td>
<td></td>
<td>SIIP, Study Grant Administration, Statistics Greenland</td>
</tr>
<tr>
<td>Poverty rate (% population below poverty line)</td>
<td>n.a.</td>
<td>No official poverty line.</td>
<td></td>
</tr>
<tr>
<td>HIV incidence (per 1000 persons)</td>
<td>2.4 (total of 137 are HIV infected)</td>
<td>2004 (year-end)</td>
<td>Annual Report from the Chief Medical Officer in Greenland 2004, p. 33</td>
</tr>
<tr>
<td>Main natural resources (items)</td>
<td>Gold, olivine (fish, shrimp, seals, whales, reindeer)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation rate (average past three years)</td>
<td>2.2%</td>
<td>Consumer price index, average of 2003-2005, 1995=100</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------</td>
<td>--------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>GDP growth (average % past five years (1999-2003))</td>
<td>0.5% (2.6%)</td>
<td>2000-2004. Constant prices (current prices)</td>
<td></td>
</tr>
<tr>
<td>Value added in agriculture (% of GDP)</td>
<td>n.a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value added in industry (% of GDP)</td>
<td>n.a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value added in services (% of GDP)</td>
<td>n.a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports of goods and services (% of GDP)</td>
<td>23.9%</td>
<td>2005. Goods only = DKK 2,436,173,000</td>
<td>Statistics Greenland: Foreign trade 2006:3. Greenland's foreign trade 2005 (preliminary figures), Figure 1</td>
</tr>
<tr>
<td>Imports of goods and services (% of GDP)</td>
<td>35.1%</td>
<td>2005. Goods only = DKK 3,584,143,000</td>
<td>Statistics Greenland: Foreign trade 2006:3. Greenland's foreign trade 2005 (preliminary figures), Figure 2</td>
</tr>
<tr>
<td>Number of tourists</td>
<td>33,082</td>
<td>2005</td>
<td>Statistics Greenland. Tourism 2006:1. Air passenger statistics for 2005, Figure 1</td>
</tr>
<tr>
<td>External debt (% of GDP)</td>
<td>n.a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign direct investment, stock</td>
<td>n.a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed-line and mobile phones (per 1000 people)</td>
<td>42.8% (fixed-line), 81.6% (mobile phones: subscription or prepaid)</td>
<td>2005 (year-end): fixed-line phones = 24,403; mobile phones (subscription) = 14,329; mobile</td>
<td>TELE POST. Annual Report 2005, p. 3, Index numbers, Business data</td>
</tr>
<tr>
<td>Personal computers (per 1000 people)</td>
<td>370 (490 access home or work)</td>
<td>Survey data 2001/2002</td>
<td>Statistics Greenland. Statistical Yearbook 2006, Figure 5.9</td>
</tr>
<tr>
<td>Internet users (per 1000 people)</td>
<td>360 (home or work)</td>
<td>Survey data 2001/2002. (2001: 7344 subscriptions; 2005: 16,513 subscriptions)</td>
<td>Statistics Greenland. Statistical Yearbook 2006, Figure 5.9</td>
</tr>
</tbody>
</table>

**Membership of international organisations**

- Agenda 21
- Arctic Leaders' Summit
- Arctic Parliamentarians
- Arctic Winter Games
- Arctic Council
- Basel Convention
- Biodiversity Convention
- Brussels Convention
- Children's Convention
- Canada-Denmark, on ocean pollution
- Canada-Denmark, on the continental shelf
- Canada-Greenland, on fisheries
- Canada-Greenland Joint Commission on the Conservation and Management of Narwhal and Beluga (JCNB)
- CEDAW
- CITES
- COSPAR/SARSAT
- DANIDA
- EBCD
- ECOSOC
- EPB
- Espoo Convention on Environmental Impact Assessment
### Population growth in the past 5 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Percentage Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>56969</td>
<td>1.287226</td>
</tr>
<tr>
<td>2004</td>
<td>56854</td>
<td>0.202272487</td>
</tr>
<tr>
<td>2003</td>
<td>56676</td>
<td>0.314065919</td>
</tr>
<tr>
<td>2002</td>
<td>56542</td>
<td>0.236991971</td>
</tr>
<tr>
<td>2001</td>
<td>56245</td>
<td>0.528046938</td>
</tr>
<tr>
<td>2000</td>
<td>56124</td>
<td>0.215594042</td>
</tr>
</tbody>
</table>

### Growth in GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
<th>Growth during the period</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>9546</td>
<td>20.93%</td>
</tr>
<tr>
<td>2002</td>
<td>9389</td>
<td>0.102997663</td>
</tr>
<tr>
<td>2001</td>
<td>9040</td>
<td>0.080478387</td>
</tr>
<tr>
<td>2000</td>
<td>8633</td>
<td>0.03669521</td>
</tr>
<tr>
<td>1999</td>
<td>7894</td>
<td>0.044034252</td>
</tr>
</tbody>
</table>

### Secondary enrollment

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>825</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>173,25</td>
<td>28.7</td>
</tr>
</tbody>
</table>
Annex 2: Greenland's education sector budget

The yearly budget allocations and projections

<table>
<thead>
<tr>
<th>(mio. €)</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Budget</strong></td>
<td>717,9</td>
<td>736,1</td>
<td>795,4</td>
<td>782,2</td>
<td>772,0</td>
<td>749,1</td>
<td>749,1</td>
<td>749,1</td>
<td>749,1</td>
</tr>
<tr>
<td><strong>Of which education budget:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational Training</td>
<td>31.6</td>
<td>1,8</td>
<td>33.4</td>
<td>32.2</td>
<td>4,1</td>
<td>36.2</td>
<td>41.1</td>
<td>7.6</td>
<td>48.7</td>
</tr>
<tr>
<td>Primary School</td>
<td>22.5</td>
<td>22.5</td>
<td>19.8</td>
<td>0.5</td>
<td>20.3</td>
<td>19.5</td>
<td>0.6</td>
<td>20.1</td>
<td>19.5</td>
</tr>
<tr>
<td>Higher Education</td>
<td>19.0</td>
<td>0.2</td>
<td>19.2</td>
<td>20.9</td>
<td>1.0</td>
<td>21.8</td>
<td>21.4</td>
<td>1.6</td>
<td>22.9</td>
</tr>
<tr>
<td>High schools (Gymn.)</td>
<td>12.9</td>
<td>0.2</td>
<td>13.1</td>
<td>14.7</td>
<td>1.6</td>
<td>16.3</td>
<td>15.3</td>
<td>1.9</td>
<td>17.2</td>
</tr>
<tr>
<td>Building, Inst.</td>
<td>13.6</td>
<td>13.6</td>
<td>16.0</td>
<td>1.8</td>
<td>17.8</td>
<td>17.3</td>
<td>2.7</td>
<td>19.9</td>
<td>14.4</td>
</tr>
<tr>
<td>Reserve</td>
<td>2.1</td>
<td>2.1</td>
<td>3.4</td>
<td>3.4</td>
<td>2.1</td>
<td>5.3</td>
<td>5.3</td>
<td>0.0</td>
<td>8.3</td>
</tr>
<tr>
<td><strong>Total education budget:</strong></td>
<td>102.8</td>
<td>3.6</td>
<td>106.4</td>
<td>105.6</td>
<td>9.0</td>
<td>114.7</td>
<td>114.5</td>
<td>19.9</td>
<td>134.4</td>
</tr>
<tr>
<td><strong>Education in % of Total budget</strong></td>
<td>14.8%</td>
<td>15.8%</td>
<td>16.9%</td>
<td>17.8%</td>
<td>18.7%</td>
<td>20.3%</td>
<td>20.7%</td>
<td>20.7%</td>
<td>20.7%</td>
</tr>
<tr>
<td><strong>Danish Government</strong></td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>EU annual</strong></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>25.0</td>
<td>25.0</td>
<td>25.0</td>
<td>25.0</td>
<td>25.0</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>EU in %</strong></td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>16.6%</td>
<td>17.0%</td>
<td>17.3%</td>
<td>16.1%</td>
<td>16.1%</td>
<td>16.1%</td>
</tr>
</tbody>
</table>

Note: the grey area shows an unofficial extrapolation (by senior civil servants in Greenland administration) of the official projections 2007-2010 as reflected in the 2007 Budget.

Explanations:
*"Base" is the original budget projections allocated to education prior to the 2004 reform
*"Add" is the additional budget allocations and projections directly resulting from the 2005 reform
*"Vocational training" includes skills training courses

Annex 3: Organisational chart of the Greenland Home Rule Government
ANNEX 4
OVERVIEW OF GREENLAND’S BUDGET AND ACCOUNTING SYSTEM

The Budget cycle
The Budget Law was approved by the Home Rule in 1999 and followed by a specific clarified budget regulation in 2002.

The Budget preparation process in Greenland generally follows the same pattern every year. This is illustrated below through a description of the preparation of the Budget for the year 2008. Preparation of the Budget for 2008 began in early 2007, shortly after November 2006, when Parliament approved the Budget for 2007, and whilst the spending ministries were finalising the fiscal accounts for 2006.

This indicates that, from the first preparations of the Budget proposal, it takes about one year before Parliament decides on the Budget and about two and a half years before the fiscal accounts can be presented to Parliament.

In addition, multi-year Budget estimates for the fiscal year have been presented in the appendixes to the Budgets of the previous three years. The overall schedule is illustrated in the following table:

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td>The Ministry of Finance examines the basis for the Budget and proposes overall Budget targets</td>
</tr>
<tr>
<td>February-March</td>
<td>The Government’s Budget seminar</td>
</tr>
<tr>
<td>March</td>
<td>Breakdown of overall Budget targets into ceilings for consumption and income transfers for each ministry</td>
</tr>
<tr>
<td>End of May-June</td>
<td>The Government receives the proposals for consideration</td>
</tr>
<tr>
<td>Early June</td>
<td>Line ministries hand in their Budget alterations to the Ministry of Finance</td>
</tr>
<tr>
<td>15-25 June</td>
<td>The Government discusses the final proposal for approval</td>
</tr>
<tr>
<td>Mid-August</td>
<td>Presentation of the Budget Proposal to Parliament, public, etc.</td>
</tr>
<tr>
<td>Mid-September</td>
<td>Autumnal equinox begins; the first parliamentary discussion on the Budget Proposal</td>
</tr>
<tr>
<td>Early November</td>
<td>Third and final parliamentary discussion on the Budget Proposal</td>
</tr>
<tr>
<td>Mid-November</td>
<td>End to political negotiations on the Budget Proposal – adoption of the declaration</td>
</tr>
</tbody>
</table>

Institutions in the Budget process

The central government budget in Greenland is prepared in cooperation between several levels of government. The various authorities play their own special roles: not only in preparing the Budget Proposal, but also in implementing the Budget and controlling the outcome.

This presentation provides an introduction to the various authorities and their role in Greenland’s budget and appropriations system.
**Parliament**
The Parliament (Landstinget) is the central appropriations authority. It cannot prepare its own budget proposal, but is entitled to make changes to the Government’s Budget Proposal before finally adopting the Budget.

The Parliament’s Finance Committee functions as the appropriations authority during the fiscal year. It is also the Finance Committee that discusses the detailed contents of the Government’s Budget Proposal. Usually the Parliamentary debate on the Budget Proposal follows a broader perspective on economic policy.

Once the Budget Proposal has been adopted by Parliament and the fiscal year has begun, changes to the appropriations in the Budget can be implemented through applications to the Finance Committee. Such applications must contain a full explanation of why a change is necessary and how it will be financed, e.g. through cuts in other appropriations or reserves. Also, the Ministry of Finance must approve an application before it can be sent to the Finance Committee.

This procedure makes the Greenland appropriations system highly flexible: most applications to the Finance Committee are dealt with within one or two weeks. All applications approved by the Finance Committee during the fiscal year are combined in one supplementary appropriations act at the end of the fiscal year.

**Ministry of Finance**
The Ministry of Finance coordinates the Budget process. It is the Minister of Finance who presents the Budget Proposal to Parliament on behalf of all Cabinet ministers. Under the Greenlandic system, no Cabinet minister can contact the Parliament or its Finance Committee on appropriation issues without the prior consent of the Minister of Finance.

The functions of the Ministry of Finance in the Budget process can be divided into four main tasks:

- To draw up guidelines and instructions to be used by the spending ministries when drafting the Budget.
- To collect draft budget proposals from the ministries and combine them into the final Government Budget Proposal.
- To follow up on Government revenue and expenditure and make economic forecasts and calculations in preparation for Government decisions on economic policy.
- To check ministry/agency accounting and present the fiscal accounts after the end of the fiscal year.

The first three functions are necessary to ensure that the Minister of Finance has the background to present a coherent economic policy based on actual projections of the fiscal balance for the central government.

**Spending ministries**
All government administration in Greenland is based on the act laying down the responsibilities of each Cabinet minister. The act determines that each minister is politically responsible for all decisions taken within his/her purview, but it does not prohibit the delegation of decision-making power to lower levels within the ministry. As a result, all appropriations decided by Parliament are given to a minister. From this it also follows that every spending decision by an agency is the relevant minister’s responsibility.
Thus the spending ministries have two major functions in the Budget process:

- They must present a draft Budget Proposal for the ministry and all its agencies to the Ministry of Finance.
- They must follow up on the actual Budget and take action if an agency has difficulty remaining within the limits of its appropriations.

If a spending ministry finds it necessary to apply for a change to an appropriation during the Budget follow-up process, the Ministry of Finance must approve the application and funding before it can be submitted to Parliament.

*Home Rule accounting, legislative basis*

**The act on public accounting**

The public accounting system is governed by Greenland Parliament Act No 23 of 3 November 1994 on Greenland Home Rule Public Accounts, Etc. This act lays down the general guidelines for public accounting.

The act specifies that accounts must be presented during the Greenland Parliament’s autumn session. The accounts must be laid out in a way that is compatible with the Finance Act and the Supplementary Appropriations Act. Furthermore, the accounts must comprise all revenues and expenditures as well as all assets and liabilities.

All ministries and institutions included in the Finance Act must comply with the accounting rules.

The Home Rule Cabinet lays down specific rules on public accounting, taking into consideration not only security and public order, but also the need for economic planning, management and control.

All ministries and institutions affected by the act must provide the information needed by the Cabinet to present the Treasury’s accounts.

**Home Rule executive order**

The provisions of the act are explained in greater detail in Home Rule Executive Order No 8 of 27 February 1995.

The order states that public accounting must help ensure effective economic management through the registration of information that can be used in connection with economic planning, management and control of activities on all levels. Accounting must be carried out in such a way that it is possible to prepare interim accounts and annual accounts.

All acts, orders, etc. containing provisions on public accounting must be submitted to the Ministry of Finance for approval. The Ministry manages all the financial assets and liabilities of the Greenland Home Rule authorities and is also in charge of raising loans. It is also the Ministry of Finance that decides who can draw funds from central bank accounts and determines the maximum amounts permitted in the bank accounts of individual units.

The Ministry of Finance develops, operates and maintains the central Home Rule accounting system. All public institutions must use this system. In addition, the Ministry of Finance issues regulations and user instructions and provides support to units on accounting matters.
Each individual unit must prepare accounting instructions for the organisation of accounts and information about responsibilities and competencies within the unit. These instructions must be approved by the auditors.

The Greenland Home Rule Cabinet lays down specific rules relating to the above provisions. These rules are collated in an accounting manual.

**Audits**


The Parliament appoints this external auditor for a term of one year. The selection of the accountant is a separate item on the Parliament’s session agenda. The auditor must check the correctness of the accounts and make sure that the various transactions covered by the accounts are in keeping with the Finance Act, the Supplementary Appropriations Act and other parliamentary acts and regulations, as well as applicable agreements and common practice.

There are two firms of state-authorised public accountants in Greenland. They are both associated with firms of international standing: PriceWaterhouseCoopers and Deloitte. In the past thirty years, Parliament has selected Revisionsaktieselskabet Deloitte as its external auditor of public accounts.

The Home Rule authorities also have internal auditors who, on an ongoing basis, check all department and institution reconciliations of items on the balance sheet. In addition, the internal auditors audit the institutions by agreement with the external auditor.

The internal and external auditors also agree on audits of the individual departments. The external auditor audits the Home Rule Treasury’s consolidated annual accounts and issues an auditor’s report. The report has always been clean, i.e. without supplementary remarks or reservations. The external auditor also audits the Home Rule accounting system. This work is performed by specialists from Deloitte.

**Accounting system**

The Home Rule accounting system covers all accounting needs in the Home Rule system. The accounting system applies to all ministries and public institutions.

For reasons of security, the system is divided so that only the Ministry of Finance can see all accounts and entries. Individual ministries only have access to their own information and information relating to the institutions for which they are responsible. Individual institutions only have access to their own information but may decide to divide the accounts even further so that accounts are prepared for the individual departments of each institution.
Important notice: The European Commission financed the compilation of Environmental Profiles for all the OCTs. This study was carried out by consultants. The opinions expressed are those of the consultants and do not represent the official view of the European Commission or of the Governments of the OCTs involved.
0. Summary

Greenland is a self-governing territory of Denmark, the world’s largest island with an Arctic clim occupied by a population of 56,000. Most of the island is covered by the world’s second largest ice-sheet (after Antarctica). The island has a large indigenous population, and the predominant economic activities are fishing and hunting. The interchanges between the global climate and the Arctic system are such that the region is particularly sensitive to the changes which are occurring, and the impact of climate change already making itself felt. The ice-sheet is already shrinking and calculations suggest that this trend is likely to accelerate, which in the long-term (centuries) will have a major impact on the world’s sea-level. However, climate change will also have great effects in Greenland, including major changes to ecosystems as a result of milder temperatures, greater precipitation, reduction in sea-ice, greater irradiation. The melting of the permafrost in some areas may cause problems for the existing infrastructure. These factors will in turn impact on people’s livelihoods and ways-of-life. Another environmental challenge is also outside Greenland’s direct control, is the widespread presence of contaminants in the Arctic environment generally. Greenland in particular. Although this contamination is relatively low-level, because of the long food chains it bio-accumulates in the tissues of birds and the higher mammals such as seals, whales and polar bears, and may reach high levels in humans who consume these animals. Little is known, however, of the effects of these contaminants on humans or animals. There are also concerns about decline: certain species of marine mammal and bird, due to or exacerbated by overexploitation.

1. Background information

1.1 Key facts and statistics

<table>
<thead>
<tr>
<th>Name of Territory</th>
<th>Greenland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>North Atlantic</td>
</tr>
<tr>
<td>Land area</td>
<td>2,166,000 km² (410,000 sq km ice-free, 1,755,000 sq km ice-covered)</td>
</tr>
<tr>
<td>Exclusive economic zone</td>
<td>territorial sea: 3 nm, continental shelf: 200 nm or agreed boundaries or median line exclusive fishing zone: 200 nm or agreed boundaries or median line</td>
</tr>
<tr>
<td>Population</td>
<td>56,000 (2005 est.), i.e. 0.025 / km²</td>
</tr>
<tr>
<td>GNP/capita</td>
<td>€22,600 / capita</td>
</tr>
<tr>
<td>Literacy rate</td>
<td>100%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>10% (2000, est.)</td>
</tr>
<tr>
<td>% below poverty line</td>
<td>NA</td>
</tr>
</tbody>
</table>
1.2 Constitution

Greenland has been a self-governing overseas administrative division of Denmark since 1979. The Home Rule Act provides that the Danish government retains responsibility for foreign policy, defence and security policy, the legal and judicial system and monetary policy. Greenland participates actively in international agreements which relate to it. It has a 31-member unicameral parliament (Landsting) and a premier and sends two representatives to the Danish Folketing. The Home Rule Government is elected by the Landsting based on the strength of the parties. Around half of all Greenland’s public expenditure is covered by a block grant of about €370 million from the Danish state. This amount, agreed by the Danish Folketing, is transferred to Greenland Home Rule to be administered by the Greenland government.

Greenland joined the European Community with Denmark in 1972 but withdrew in 1985, when it was given OCT status. Greenland and the EU also negotiated a fisheries agreement which allows the EU fishing quotas in exchange for a fixed payment and allows Greenland duty-free access of its fishery products to the EU market so long as the EU has a satisfactory fisheries agreement with Greenland.

1.3 Physical geography

Greenland (Kalaallit Nunaat, Greenland) is the largest island in the world, and is related geologically to North America. Two-thirds of the island lies within the Arctic Circle. It is surrounded by the Arctic Ocean in the north; the Greenland Sea in the east; the Denmark Strait in the southeast; the Atlantic Ocean in the south; and Davis Strait and Baffin Bay in the west.

Most (80%) of the island is covered by the Greenlandic ice sheet: a collection of ice caps and glaciers covering respectively mountains and valleys. In its central part the Greenlandic ice sheet can be 3 km thick. The thickness decreases towards the ocean, and on the fringes it is only a few hundred meters thick. The weight of the ice sheet has depressed the central land area to form a basin, parts of which lie more than 1,000 ft [300 m] below sea level. Two drilling operations on the highest part of the ice sheet in 1992 and 1993 both reached bottom, with the deepest core measuring 3,033 m from surface to bottom. Studies of the composition of the Ice cores have permitted new insights into the climatic history of the last 200,000–300,000 years. The ice moves outward from the centre, entering the sea in walls or debouching in glaciers, of which Humboldt Glacier is the largest and Jakobshavn Glacier the most calving productive. These glaciers calve large icebergs, notably into the Davis Strait, through which they frequently reach Atlantic shipping lanes. The thickness of the ice sheet is slightly increasing, but the surface area as a whole is decreasing as the ice is melting at the fringes, with chunks of ice breaking off the sheet.

More than 50% of the ice-free area of Greenland consists of Precambrian rock, mostly granites and gneisses. Mountain chains run along Greenland’s east and west coasts, Mt. Gunbjørn (3700 m) in SE Greenland being the highest peak. The entire coastline of Greenland is deeply indented by fjords. There are many offshore islands, of which Disko, on the west coast, is the largest. The extreme northern peninsula (Peary Land) has no ice sheet but does have local ice caps.

Much of the soil in Greenland is characterised by permafrost, the layer of earth which is perpetually frozen. Only the surface thaws during the summer. This phenomena, found in all of northern Greenland and in parts of South Greenland, can make construction difficult, but the integrity of some infrastructure also depends on the permafrost.

Large parts of the sea around Greenland freeze over for greater or shorter parts of the year. Normally it is only the western coast, between Sisimiut and Paamut, that remains free of ice all year round.

1.4 Flora and fauna

Greenland’s ecosystem is influenced by the Arctic climate: low temperatures, low humidity, long dark winters, light summers and permafrost. Greenland lies north of the tree line. There are no forests in
Greenland; dwarf trees are found in the southern coastal areas. Forest-like brush exists in many places. The sunniest valleys in South Greenland have stands of strong, upright birch trees up to 7 metres in height. Greenlandic ash and various species of willow, evergreen, fern and several species of herbs also grow in South Greenland. Other vegetation includes mosses, lichens, heather, crowberry, grasses and sedge.

Some 500 species of wild plants are found in Greenland. The little plant cultivation that exists is confined to the southwest.

Birds constitute by far the majority of species of fauna, about 210. There are about 125 species of fish. There are 25 species of marine mammal and eight species of land mammal. Sledge dogs and imported mammals are also found.

The polar bear, musk ox, polar wolf, lemming, Arctic hare, and reindeer are the chief land mammals. Marine mammals include walruses, various species of seal and whale.

The Greenland National Park, covering 956,000 km² and established in the north and northeast of Greenland in 1974, is the largest National Park in the world and includes a marine component. In addition to the National Park, there are nine other protected areas (marine and terrestrial) in Greenland (Home Rule legislation no. 11 of 12 November 1989), covering about 8100 km². Furthermore executive orders for the protection of three more areas are expected to enter into force in 2007.

1.5 Demography, socio-economy

Nearly all Greenlanders live along the fjords in the south-west of the main island, which has a milder climate. About 85% of the people are Inuits, locally born people of European descent or mixed; the balance are mainly Danish. The population is currently estimated to be declining slightly, partly as a result of a net outward migration (8.4/1000 in 2005). Social change has been rapid, and there has been a considerable exodus from small communities into towns.

Fishing is the mainstay of the Greenlandic economy, and accounts for 94% of all exports. Arctic fisheries are among the most productive in the world. It is estimated that about 2,500 people are employed directly in fishing with a further 3,000 employed in the fish processing industry, in addition to part-time workers and those employed in derivative businesses. The most important fishery resource is now shrimp, and the once important cod has now virtually disappeared. Some of the world's largest shrimp beds are in Disko Bay. Shrimp fishing seems to have peaked with an annual haul of just over 70,000 tonnes. Halibut stocks have been more stable and are now an important resource. Salmon and redfish are also important. Of the varieties of shellfish found, shrimps, crabs and scallops are also harvested.

Many processing plants have been constructed in the southern and south-western areas. Royal Greenland Ltd. is both the largest company involved in fishing and fish processing in Greenland and the country's largest company with over 3,000 employees.

The fisheries for prawns and Greenland halibut are regulated by quota and license regulations decided on by the Cabinet on the basis of the biological advice regarding sustainability.

Greenland has always been a hunting society, and hunting continues to be a very important economic and cultural activity. There are some 2,700 professional hunters in Greenland and 8,300 people hold a recreational hunting permit. Hunting is of great importance to the population, especially in the settlements and in outlying districts. The primary targets for hunters are seals, birds and mountain trout. Other important, although limited, resources are large and small whales, reindeer and musk ox. Hunting in Greenland requires a professional hunting permit or a recreational hunting permit, both subject to a range of conditions. All specimens caught must be reported. Furs and sealskins are exported.

In the past mining was important in Greenland, and deposits of cryolite, iron, zinc, and lead, have largely been worked out. Uranium, copper, coal, and molybdenum have also been detected, but are difficult to
extract. Considerable exploration activities have taken place in West and South-West Greenland where, since the middle of the 1990s, and the region between Kangerlussuaq and Maniitsoq has emerged as promising for diamonds. Deposits of gold have been discovered in several areas, and there is also potential for zinc, lead and silver. In the past mining was important in Greenland, and deposits of cryolite, iron, zinc, and lead, have largely been worked out. Uranium, copper, coal, and molybdenum have also been detected, but are difficult to extract. Considerable exploration activities have taken place in West and South-West Greenland where, since the middle of the 1990s, and the region between Kangerlussuaq and Maniitsoq has emerged as promising for diamonds. Deposits of gold have been discovered in several areas, and there is also potential for zinc, lead and silver. Two mines have opened in West Greenland in the last couple of years and 3 more mines may be opened in Greenland within the next 3 – 4 years. Oil exploration is going on in the offshore areas west of the capital Nuuk in Greenland, and drillings may take place in 2008. Greenland has just completed a licensing round in the Disko-Nuussuaq offshore region in West Greenland. 4 of the worlds largest oil companies have applied for licences in the area. Exploration in the Disko-Nuussuaq region will commence in the summer of 2007.

The government wishes to expand the tourism industry. Air transportation and telecommunications have greatly improved in recent years. Tourists can buy a temporary license to fish or hunt. Paid trophy hunts for musk ox and polar bears are envisaged. The prospects for tourism are however limited due to a short season and high costs.

Little agriculture is possible. The growing season is too short to allow even wheat to mature. There is some cultivation of horticultural and greenhouse vegetables and husbandry of sheep and reindeer.

Other industries include handicrafts, hides and skins and small shipyards. Many Greenlanders are employed in the service sectors.

1.6 Other

The Arctic countries generally, and Greenland in particular, regard sustainable development as having a fourth ‘pillar’ in addition to the economic, social and environmental pillars, and that is that opportunities must be taken to protect and enhance the culture and health of indigenous communities.

2. Main environmental challenges

2.1 Overview

Greenland is a large island with a very low overall population density. There is very little industry or (for the time being) mineral extraction on the island, and vehicle ownership is low (since there are no roads between settlements). Although there is no treatment of waste water, so that raw sewage is pumped out into the sea untreated, the quality of the air, surface waters, groundwater (often permafrost) and soil are generally relatively free of contamination, although there is an issue of low-level but generalised pollution by various contaminants brought into the area from the mid-Northern latitudes and which are accumulating in the food chain. Greenland intends to deal with its waste by a network of incinerators situated in the various communities. 80% of energy is used for space heating. Many houses are relatively poorly insulated, but a programme is in progress to refurbish and improve the energy performance of the housing stock. Greenland intends to expand its hydropower capacity.
2.2 Main challenges

**Challenge 1 Climate change**  SEVERE

Climate change is already having an impact in the Arctic region generally and Greenland in particular. Many observations of environmental change in the Arctic show a trend consistent with climate change models. In the last century temperatures over some land areas have increased by about 5°C. Greenland's ice sheet has thinned dramatically around its southern and eastern margins. Arctic sea-ice extent decreased by approximately 3% per decade between 1978 and 1996.

The Arctic region is extremely vulnerable to a change in climate—major physical, ecological, sociological, and economic impacts are expected. Because of a variety of positive feedback mechanisms, and because of the phase change liquid ↔ solid which H₂O undergoes at 0°C, the Arctic is likely to respond more rapidly and severely than other areas, with effects on ice cover, sea-ice, permafrost, and hydrology. Furthermore the fate of the Greenland ice sheet plays a crucial role in the global impact of climate change. Its total melt would mean a global sea-level rise of over 7 metres. The additional flux of fresh and low-saline water may change the major marine currents, thereby having other effects on the global climate which are difficult to predict.

**DIAGRAM: IMPACT OF CLIMATE CHANGE IN GREENLAND**

**PRESSURES**
- GHG emissions
- Global deforestation

**STATE**
- Higher air and water temps

**PHYSICAL IMPACTS**
- Melting ice-sheet
- Changes in drainage / hydrology
- Changes in ecosystems / habitat
- Loss of sea-ice
- Changes in permafrost

**GLOBAL IMPACTS**
- Rising global sea-level
- Thermohaline circulation
- Wildlife loss

**SOCIO-ECONOMIC IMPACTS**
- Impacts on fisheries
- Impacts on society, traditional customs
- Opening of new navigational possibilities
- Impacts on infrastructure
- Miscellaneous other effects (including some beneficial)
Surveys conducted from 1993 to 1998 showed the ice sheet in southern Greenland to be shrinking by about 8 km² each year, although ice cores collected in the area suggest that similar changes may have occurred in the past. From 1996 to 2004 the amount of ice melting each year in Greenland increased by a factor 2½, leading to concerns that the sea level may rise significantly, even during the 21st century. The summer melting of the Greenland ice sheet at its margin is likely to continue. If warming continues, the Greenland ice sheet will shrink considerably, as occurred in previous interglacial periods, and if the warming is sustained, the ice sheet will melt completely.

Changes in temperature, in hydrology, in ice cover and sea-ice will have major impacts on ecosystems and habitats including, importantly for Greenland, fisheries. Changes in ocean currents will affect the availability of nutrients and the disposition of larval and juvenile organisms, thereby influencing fish stocks. Greenland turbot, a species more adapted to a cold climate, is likely to decline further. Cod stocks may recover however. Projected climate change could favour some species, decimate others; some fisheries may disappear, and other new ones may develop. More warmer water species will migrate northwards and compete for existing niches, and some existing populations may take on a new dominance. These factors may change the population distribution and value of the catch. This could increase or decrease local economies by hundreds of millions of euros annually, and have important social repercussions.

There will be a substantial loss of sea-ice in the Arctic Ocean and seas around Greenland. Projected losses in sea ice are likely to have considerable impacts on Arctic biology through the entire food chain. Sea-ice is a vital habitat for seals and other marine mammals. Seal species use ice for resting, pup-rearing, and moulting, and their polar bear predators are particularly at risk. If break-up of annual ice occurs too early, seals will be less accessible to polar bears. Changes will occur in the distribution, age structure, and size of populations of marine mammals. This will in turn affect indigenous peoples and their traditional ways of life. People who rely on marine systems for food resources are particularly at risk because Arctic marine food chains are long. When sea ice is late in forming, certain forms of hunting are delayed or may not take place at all. When sea ice in the spring melts or deteriorates too rapidly, it greatly decreases the length of the hunting season.

The loss of sea-ice will have major implications for trade. A more open ocean will favour increased shipping along high-latitude routes and could lead to faster and cheaper ship transport between eastern Asia, Europe, and eastern North America. It will also have defence implications. Coastal erosion and retreat as a result of thawing of ice-rich permafrost are already threatening communities. The capacity of permafrost to support buildings, pipelines, and roads has decreased with atmospheric warming, so pilings fail to support even insulated structures.

**Challenge 2 Transboundary pollution of the Arctic environment**

**PRESSURES**

- Emissions from power stations, incinerators and other industrial installations.
- Runoff of agrochemicals from agricultural lands.
- Natural contamination, nuclear waste installations, etc.

**STATE**

- Contaminants in the Arctic environment

**IMPACTS**

- Contaminants accumulate in biota and in humans

- Health effects in humans??

- Reductions in vitality and size of animal communities??

Many animals in the Arctic have elevated levels of heavy metals (particularly mercury and cadmium) and persistent organic pollutants (POPs) in their tissue. Heavy metals tend to accumulate in specific organs.
such as the liver, whereas POPs accumulate in organisms’ fatty layers. This tendency is particularly pronounced in animals near the top of the food chain such as marine mammals, birds, and polar bears. POP concentrations in ringed seals are close to the threshold limit value. Although much higher values have been measured in seals in the Baltic, this is not such a problem because seal does not form an important element of the human diet there. Polar bears, which eat only the fat of the ringed seals, get big doses of POPs. Studies done in Svalbard have suggested that the immune systems of the polar bears are under pressure as a result of PCB concentrations. Mercury levels in Arctic ringed seals and beluga whales have risen by between 2 and 4 times over the last 25 years in parts of Greenland. Many marine birds also have high POP levels. The kitiwake, which spends the winter on the coasts of North America, has high POP. The black guillemot, on the other hand, which spends its whole life in the Arctic, has lower values.

Many people whose diets are rich in these animals ingest more cadmium and mercury than international limit values. One Greenlander in six has potentially harmful blood-levels of mercury from eating contaminated fish and whales. 16% of people in northern Greenland have levels above that which can be toxic to non-pregnant adults (UNEP Earthwatch website). Little is known, however, about health effects in Greenland.

Metals occur naturally in the earth’s crust and are introduced into the environment by weathering and other natural processes. But studies indicate that much of the contamination by heavy metals and POPs come from the middle latitudes of the Northern Hemisphere, and that these substances are transported to the Arctic by sea currents and winds. The watershed of the Arctic is enormous (see map beside) and includes many industrial areas in Northern Eurasia (particularly Russia) and North America. Because of cold condensation, Arctic waters are likely to serve as a major sink for contamination released around the world.

Radioactive contamination is also a concern in the Arctic, including Greenland.

It is not known whether contamination in the Arctic is rising or falling. There are some places where concentrations have fallen over time and other places where no conclusions can be drawn. In a few places, concentrations appear to be rising.

### Challenge 3 Conservation and sustainable use of Arctic fauna

#### PRESSURES
- Overhunting
- Changes in ecosystems due to climate change (see above)
- Environmental contamination (heavy metals, POPs, etc.)

#### STATE

- Threats to animal communities

#### IMPACTS
- Impact on tourism??
- Impact on hunting, livelihoods
Greenland’s main commercial marine resources (shrimps and Greenland halibut) are holding up reasonably well in recent years despite the crisis in fisheries elsewhere in the Atlantic. However, populations of a number of marine mammals and birds have been declining, and the Greenland Home Rule has recognised that they need greater protection. These include the beluga whale, narwhal, walrus, common seal, porpoise, polar bear, common murre (common guillemot), thick-billed guillemot (Brünnich’s Guillemot), eider, king eider and Arctic tern. All of the mammals in this list are classified by the IUCN as ‘vulnerable’ species, and they are all hunted in Greenland. In some cases a hunting licence is required and the species may be subject to a quota. In some cases populations are being stressed by other phenomena shown in the diagram (changing climatic conditions, pollution bio-accumulating in their bodies), but it is widely accepted that for the species listed, overhunting has contributed to declining populations.

Although hunters and conservationists have a common interest in ensuring that wildlife stocks are sustainable, they often do not agree on the status of and trend in the populations, and therefore on the measures such as hunting quotas necessary to guarantee this. The hunters are more optimistic than the biologists. The Home Rule government believes it would be lacking in legitimacy to impose the recommendations of the scientific community on hunters, and that a consensus should be achieved among all sections of the community.

There has been considerable criticism of Greenland’s management of its living resources. In November 2003 the WWF published a report (Hjarsen, 2003) arguing that Greenland was failing to meet its conservation obligations under the multilateral MEAs with which it is associated. Greenland has recognised there is a problem with some species, and has taken measures to increase protection. A new Nature Protection Act was enacted in December 2003, AND legal protection and quotas have been introduced for birds, for the narwhal, the beluga, the polar bear and, shortly, for the walrus.

However, some hunting quotas being set still fall well short of scientific advice. So for example, although the Canada/Greenland Joint Commission on the Conservation and Management of Narwhal and Beluga (JCNB) has expressed grave concern about the size of the beluga harvest, and recommends that the Greenland annual take be reduced to 100 in order to halt the decline (JCNB, 2006), the quota is currently 310 (quota exceeded for 2005/6). A similar situation applies with regard to the narwhal.

The thick-billed murre is an important game bird in Greenland, and contributes between EUR 300,000 and 1 million a year to the Greenlandic economy. This bird has been overexploited locally by hunters. In some parts of the country the colonies have declined drastically. An estimated 50-90% of some colonies has disappeared, others have vanished entirely (Greenland Institute for Nature, 2003). The breeding behaviour of this bird is such that, once depleted, populations take a long time to recover.

The problem is not only related to the absence of adequate legal controls or over-generous quotas. There is also a problem with enforcement (see section 3.6).

The IWC Scientific Committee has pointed the absence of documentation on counts of large whales in Greenlandic waters. Similarly there is insufficient knowledge of other stocks (e.g. polar bears) to permit scientifically sound hunting quotas.

If declines in the populations of the relevant species are not halted, there could be adverse impacts for the burgeoning tourist industry.

**Other challenges**

1. The requirement for EIA applies only to the oil, gas and minerals industries.
3. Concerns about pumping of untreated sewage into the sea?

3. Environmental policies and institutions

No questionnaire received from Greenland, and it was not possible to find in the public domain the data needed to complete this chapter fully.

3.1 Institutional structure, manpower and budgets

The Department of Environment and Nature is responsible for environmental and conservation policy. The Department of Fisheries and Agriculture is responsible for fisheries policy and for agriculture. The Bureau of Minerals and Petroleum has a service for environmental matters which coordinates its work with the Danish Environmental Agency, in the Danish Ministry of the Environment.

The Institute of Natural Resources, set up in 1994, is charged with establishing the scientific foundation for the sustainable use of living resources in and around Greenland and safeguarding the environment and biological diversity. The Institute has a staff of 40, of which more than half are biologists.

3.2 Policy instruments

The legislation most relevant to environmental protection in Greenland is indicated in the table below.

<table>
<thead>
<tr>
<th>Item of legislation</th>
<th>Comments / detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature Protection Act</td>
<td>Approved by Greenlandic parliament in December 2003 This allows the government to create regulations on the protection of the living resources, regulate or protect species or stocks, restrict periods where hunting is permitted, set quotas, prohibit catching and hunting or any activity in geographically defined areas as well as work out wildlife management plans.</td>
</tr>
<tr>
<td>Executive order for protection of birds</td>
<td>January 2004</td>
</tr>
<tr>
<td>Executive order for protection of narwhal</td>
<td>February 2004</td>
</tr>
<tr>
<td>Executive order for protection of beluga</td>
<td>February 2004</td>
</tr>
<tr>
<td>Executive order for protection of polar bears</td>
<td>2006</td>
</tr>
<tr>
<td>Executive order for protection of walruses</td>
<td>July 2006</td>
</tr>
<tr>
<td>Orders settling hunting quotas</td>
<td>June 2004</td>
</tr>
<tr>
<td>Executive order on CITES</td>
<td>Came into force in September 2004</td>
</tr>
<tr>
<td>Conservation (Nature and Ancient Relics) Act</td>
<td>Allows protected areas to be established. Administered by the Department of Environment in close collaboration with the Danish Ministry of Environment.</td>
</tr>
</tbody>
</table>

There is currently no detailed EIA legislation in Greenland, although the 2003 Nature Protection Act does provide that an EIA is required for infrastructural projects.

A major information campaign was waged in Greenland during 2002-2004 on the sustainable use of living resources. This included programmes on TV and radio, factsheets and brochures distributed to schools, hunters' groups, etc., seminars and discussions for stakeholders, administrators and the general public.
3.3 Monitoring

Environmental quality monitoring is mainly carried out in cooperation with other Arctic countries under the auspices of AMAP, in which Greenland/Denmark participates.

Conservation monitoring is the responsibility of the Greenland Institute of Natural Resources.

3.4 Enforcement

Enforcement poses great problems in a country with the extraordinarily low population density of Greenland. The country has only eight police officers to enforce conservation and hunting regulations. Greenland cannot rely on enforcement and therefore has to rely on legitimacy and consensus.

4. International cooperation

4.1 Cooperation with Denmark

In 1980, Denmark passed responsibility for environmental protection to the Home Rule Government, and in 1992, the Home Rule Government gained jurisdiction over the marine environment around Greenland within the three-mile inshore limit.

Since this time the Danish and Greenlandic environment ministers have signed joint declarations on cooperation and launched a number of initiatives on nature and the environment in Greenland. There is also a contact group involving the Ministry of Environment and Nature in Greenland, and the Danish Environmental Protection Agency and the Danish Forest and Nature Agency, which meets once a year to discuss common problems and share experiences.

Since 1994, Denmark has focused particularly on Greenland as an element of its environmental assistance to the Arctic, and has cooperated with the Home Rule Government of Greenland. Greenland finances and attends to the interests of the Danish Kingdom with respect to the framework of CAFF, while Denmark funds the Greenland contribution to AMAP (see 4.5). Activities have included developing technological solutions to specific environmental problems in Greenland, including waste management and ensuring clean drinking water, developing environmental standards for the oil and mining industry, mapping things left behind after earlier exploration for mineral resources, military activities, expeditions, etc., and clarifying and incorporating Greenlandic factors in the preparation and implementation of international agreements and conventions. The initiatives are usually in the nature of pilot or demonstration projects and can, for example, cover physical installations, information activities and administrative tools.

The Danish EPA also evaluates the sector programme for low-energy housing refurbishment in Greenland based on an agreement between the two governments.

4.2 Cooperation with the EU

When Greenland withdrew from the EC in 1985, the parties concluded the agreements on fishing. The agreements gave Greenland duty-free access to the European market for fish products and gave fishing rights to EU countries in Greenland waters in exchange for agreed remuneration. It also included Greenland as an OCT whereby Greenland products were given duty-free access to the EU market. However, Greenland was not given access to the EDF. During 2001 - 2006 Greenland received €42.8 million/year from the EU.
A new Fisheries Partnership Agreement was recently signed between Greenland and the EU, effective from January 2007. The annual EU financial contribution will be €15.8 million, of which 25% is earmarked for support to the Greenlandic fisheries policy. The new protocol decreases the EU catch to reflect the state of the stocks and the needs of the Greenlandic fishing industry. A further €2 million is expected from EU shipowners in the form of licence fees. Greenland will also receive €25 million from the EU for cooperation in areas other than fisheries. Greenland will therefore receive the same amount as it does under the current fisheries protocol.

The Council Decision on the association of the OCT with the EEC, which governs EU-OCT relations, also emphasises co-operation and development aspects, but due to per capita income limits, Greenland only qualifies for relatively small amounts of support. No other Community support funding is forthcoming (also not under EDF) except for the compensation provided under the fisheries agreements.

### 4.3 MEAs

Greenland participates in the following MEAs:

<table>
<thead>
<tr>
<th>MEA</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity Convention</td>
<td>Greenland has started implementation by elaborating a National Red List and a Strategy and Action Plan for the Biodiversity Convention.</td>
</tr>
<tr>
<td>Ramsar Convention</td>
<td>Protection of wetland and coastal ecosystems. Greenland has 11 Ramsar sites. The 2003 Nature Protection Act provides a legal framework for implementation, but Greenland has not yet begun to develop management plans and improve the conservation of the ecosystems of the designated sites, or seek designation for other sites meeting the Ramsar criteria.</td>
</tr>
<tr>
<td>CITES</td>
<td>In September 2004, the Greenland Home Rule government approved a CITES executive order, thereby creating a legal framework for a national implementation of CITES. The Institute of Natural Resources, the designated CITES scientific body, has now begun to assess the influence of the trade on the wild population as required by the Convention. This work has been carried out for the export of narwhal, and resulted in a ban on the export of narwhal products from Greenland in 2006.</td>
</tr>
<tr>
<td>International Whaling Commission (40 countries)</td>
<td>Minke, fin and other large whales. Greenland has a quota for fin and minke whales under the Aboriginal Subsistence Whaling provision. However, Greenland has not provided data on stocks to support the quota. In 2006 the IWC Scientific Committee recommended to the IWC that it dramatically cut the fin whale quota. Greenland responded by agreeing to implement a voluntary limit of 10 fin whales a year.</td>
</tr>
<tr>
<td>Joint Commission on Narwhal and Beluga JCNB</td>
<td>Greenland has set quotas for the narwhal and beluga considerably higher than the JCNB recommendations. (Greenland and Canada only)</td>
</tr>
<tr>
<td>NAMMCO: North Atlantic Marine Mammal Commission</td>
<td></td>
</tr>
<tr>
<td>Oslo Convention</td>
<td>Polar bears</td>
</tr>
<tr>
<td>NAFO: Northwest Atlantic Fisheries Org.</td>
<td>Agreement on fisheries covering the northwest Atlantic outside the 200 nautical mile zones</td>
</tr>
<tr>
<td>ICES: International Council for the Exploration of the Sea</td>
<td>Advises on fishing in waters between Greenland and Iceland</td>
</tr>
<tr>
<td>International Murre Conservation Strategy</td>
<td>Polar common guillemot</td>
</tr>
</tbody>
</table>

In July 2004 the Ilulissat ice fjord was appointed World Heritage Site by the IUCN. Greenland is also a member of the PAME (Protection of the Arctic Marine Environment) programme of the Arctic Council. PAME has produced Arctic Offshore Oil and Gas Guidelines.
4.4 Funding by international community for environmental projects

None identified.

4.5 Other international cooperation on the environment

Environmental cooperation in the Arctic between Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden and the USA was formalised in 1991 with the adoption of the Arctic Environmental Protection Strategy (AEPS). This arose from a growing concern for the Arctic environment, in particular about transboundary pollution from the industrialized countries and their accumulation in the food chain. One of the main purposes of the AEPS is to provide the Arctic governments with scientifically based advice on necessary measures to improve the state of the environment in the Arctic. The scientific evidence is mainly procured through a joint Arctic Monitoring and Assessment Programme (AMAP), which each country is responsible for implementing in its Arctic region.

In 1996, the Arctic Council was established, due to a wish that cooperation should be extended to include other dimensions of sustainable development. The AEPS environmental cooperation and working groups continue as before under the framework of the Arctic Council.

Conservation of Arctic Flora and Fauna (CAFF) is a working group of the Arctic Council. It is a forum of Arctic professionals and indigenous people’s representatives which addresses circumpolar Arctic conservation issues. It advises Arctic governments on conservation matters and sustainable use issues. The CAFF Working Group has sponsored a number of projects, including circumpolar conservation strategies for murre birds (guillemots) and eiders, and the Circumpolar Protected Area Network (CPAN) Strategy and Action Plan. Greenland will chair CAFF for the next two years (2007 and 2008).

PAME (Protection of the Arctic Marine Environment) is another programme of the Arctic Council. Its workplan for 2004-2006 includes: Improving knowledge on the Arctic marine environment, Determining the adequacy of applicable international/regional commitments and promoting their implementation and compliance, Facilitating partnerships, programme and technical cooperation and Supporting communication, reporting and outreach both within and outside the Arctic Council. PAME has produced Arctic Offshore Oil and Gas Guidelines.

5. Recommendations on future cooperation between EU and Greenland

5.1 Climate change

Ultimately there are two types of response to the challenge of climate change, i.e. mitigation (reducing impacts by reducing pressures, i.e. reducing emissions of or creating new sinks for greenhouse gases) and adaptation (taking measures which recognise that the climate is changing, but reduce the impacts).

In so far as mitigation is concerned, climate change is a global problem: all that matters is the total global emissions of greenhouse gases. It does not matter where the emissions occur. This means that international awareness, cooperation and a sense of urgency are necessary. The amount which any country can do on its own is very limited, and this applies very much to Greenland which probably accounts for less than 0.001% of the world’s anthropogenic GHG emissions. However Greenland can put its weight behind efforts to mobilise the world community to take action on climate change. Greenland can leverage these efforts by virtue of being the site of the Greenland ice-sheet, the potential impact of the melting of which is gaining considerable attention worldwide, and the pivotal role of the Arctic environment generally on global climate. Another important strategy will be for Greenlandic institutes to seek full involvement in research programmes seeking to gain an understanding of the impact of global

\[2\] This is not to say that Greenland should not try to minimise its own GHG emissions. Apart from its obligations under the UNFCCC and Kyoto Protocol, this is important to provide legitimacy to its efforts towards global emissions reductions.
warming on the Greenland ice-sheet. Measures which reduce uncertainties about the impacts will make it more likely that international decision-makers will take appropriate action. Because Greenland is not responsible for its foreign affairs, this work will have to be done in concert with Denmark and its partners in other regional bodies such as the Arctic Council.

Adaptation will in any case also be needed. In the Arctic this must take into account the especially sensitive and vulnerable natural and human systems of the region. Special attention will need to be paid to strengthening the adaptive capacities of Arctic residents. The successful long-term occupation of the Arctic by indigenous peoples has been possible, in part, owing to their adaptive capacity (in social, economic, and cultural practices) to adjust to climate variation and change. Today however, Arctic peoples cannot adapt, relocate, or change resource use activities as easily as they could in the past, because most now live in permanent communities with more constrained social and economic situations. Their hunting and herding activities are determined to a large extent by resource management regimes, land use regulations, and by local and global markets.

Recommendations for areas of cooperation between the EU and Greenland
(At present Greenland does not benefit from EDF funding)
• Technical assistance in reducing GHG emissions, particularly where there are synergies with other economic or social goals, i.e. particularly through improved energy-efficiency in the residential housing stock and an increase in hydro-power.
• Support projects which involve working closely with Arctic residents, including indigenous and local communities, to help them to adapt to and manage the environmental, economic and social impacts of climate change: research, better information, participation in decision-making.
• Research to provide that new opportunities provided by climate change, such as increased navigability of sea routes and access to resources, are identified, developed and managed sustainably, including consideration of environmental and social impacts and appropriate measures to protect the environment, local residents and communities.
• Natural and social science research on impacts and adaptation, including studies to enhance understanding of fundamental processes, procedures for integrating indigenous and local knowledge into scientific studies and partnerships between indigenous peoples, local communities, and scientists in defining and conducting research and monitoring associated with the Arctic climate.
• Seek to ensure that relevant data from research, observation, monitoring and modelling activities are made available to local, national and international research and monitoring programmes.

5.2 Transboundary pollution of the Arctic

Apart from general concerns about the contamination of a pristine environment, there are specific concerns relating to high levels of contaminants in Arctic fauna and in the people who consume them. A significant proportion of inhabitants of Northern Greenland have blood-levels of mercury and POPs in excess of WHO guidelines. However no health effects have been specifically observed and little is known about whether health or animal communities are being affected. In the first place research is needed into this phenomenon.

Recommendations for areas of cooperation between the EU and Greenland
• Support research projects either in Greenland or in cooperation with Greenland’s Arctic partners in, for example the Arctic Council, into the health impact of transboundary pollution: sources, pathways, body levels of key contaminants in the “critical group” (i.e. those with high dietary intake of marine birds and mammals), health surveys, intake, relationship between intake (ingestion) and uptake, etc.

5.3 Conservation and the sustainable use of the Arctic fauna in Greenland

An important bottleneck appears to be the absence in some cases of adequate mechanisms to obtain the basic data needed for wildlife conservation, i.e. reliable community censuses and time series which allow trends to be identified, or in other cases the failure to find common ground between hunters and biologists about estimates made.
Recommendations for areas of cooperation between the EU and Greenland

- Support for projects to quantify populations and trends of the critical species of Arctic wildlife. The focus should be on methods which win consensus across all strands of society, for example by integrating community-based networks, hunters’ associations and indigenous groups into the scientific work, applying standardised, agreed methodologies.