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ARCTIC FINLAND

FINLAND'S STRATEGY FOR THE ARCTIC REGION

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I Summary

Finland's vision is to be an active and responsible Arctic player

Finland's updated strategy for the Arctic region is based on the Arctic policy, adopted in the 10 October 2012 government evening session, which also forms the foundation for Finland's Arctic vision:

Finland is an active Arctic player with the ability to reconcile the limitations imposed and business opportunities provided by the Arctic environment in a sustainable manner while drawing upon international cooperation.

Underlying the review of Finland's Strategy for the Arctic Region is the increased significance of the region and a growing perception of the whole of Finland as an Arctic country. Finland possesses diversified Arctic expertise and it is very much in its interests to be involved in the development of the region. The new strategy is a reflection of the drive to pursue these ambitions.

The Government Programme of Prime Minister Jyrki Katainen's Government, announced on 22 June 2011, makes reference to the Arctic strategy by foreseeing intensified efforts to implement it. While the previous strategy from 2010 focused on external relations, the new strategy is more wide-reaching in scope. It examines the possibilities for bolstering Finland's position regarding the Arctic region; the creation of new business opportunities; the Arctic environment and the region's security and stability; the position of the northern parts of Finland; international cooperation; and Arctic expertise in the widest sense of the term.

Inherent in the perspectives created by the new strategy are the four pillars of policy outlined by the Government: *an Arctic country*, *Arctic expertise, Sustainable development and environmental considerations* and *International cooperation*. Together, these elements define Finland's role in the Arctic region. It is Finland's objective to promote growth and actions to enhance competitiveness in the region with due regard to its environment.

Environmental objectives and the framework for action dictated by the environment are the key considerations in the efforts to promote economic activity and cooperation, while at the same time ensuring a sustainable use of natural resources.

The Strategy for the Arctic Region will be implemented through sector-specific measures in accordance with the central government spending limits and budget. EU funding will be allocated to the projects subject to EU Programmes and the conditions established for EU support. Aside from direct financing from the State budget, the funding required for the actions and regional development will be raised from a variety of sources. Project-based funding and combinations of private and public financing will be used where possible. Some projects may be exclusively funded from private sources.

The strategy is broken down into thematic sections with the objectives and actions following the same division.

Finland leads the way in the sustainable development of the Arctic region

Currently, the Arctic region is undergoing a number of rapid, conflicting developments. Arctic areas are witnessing the effects of global warming more dramatically than any other part of the world; new transport routes are opening up; energy resources and minerals are being exploited; and tourism is on the increase. Combating climate change and managing its impact are vital for the stability and security of the Arctic region and serve as the central point of departure for the activities being carried out there. All this is significant from Finland's perspective as it seeks to lead the way in the sustainable development of the region.
In terms of the natural environment, the Arctic region is one of the purest and best preserved in the world. However, it is under considerable pressures for change. One of the most significant developments is climate change, whose impact on the Arctic region will have repercussions on the global scale. In autumn 2012, the extent of Arctic sea ice reached an all-time low since the start of satellite monitoring.

At the same time, economic activity and transport operations are increasing in the region. The Arctic region is greatly affected by a wide range of global changes. This makes it necessary to pay increased attention to actions to mitigate climate change; conserve and protect the natural environment; promote the welfare of the local population; and secure the viability of the traditional cultures of the indigenous people. Actors planning to launch operations in the area must have the capacity to evaluate and manage the risks and potential outcomes of their activities.

Finland's role in the transition that the Arctic region is currently undergoing is to promote sustainable development and stability, both nationally and internationally. At the same time, Finland is engaged in the general efforts to exploit the economic opportunities emerging in the northern regions. These two goals are not mutually contradictory or exclusive, as long as economic development is pursued within the limitations imposed by the natural environment and in a manner that is sustainable from the vantage point of the communities in the vulnerable Arctic regions.

Finland boasts a long tradition as a proactive operator in the Arctic region

Finland is an international Arctic operator in a number of different fora such as the Arctic Council, the Barents Euro-Arctic Council, the European Union, the United Nations and many of its sub-organisations, research and expert networks as well as in bilateral relations. Arctic issues play in important part in Finland's foreign policy and international role and in its efforts to create a unique brand as a country.

Finland has been an active member of the Arctic community for a long time. It played a key part in calling the first ever minister-level meeting for Arctic countries (1991), which marked the beginning of international environmental cooperation in the region, to be followed by the 'Rovaniemi process' which eventually led to the establishment of the Arctic Council. The initiative for the Northern Dimension policy, subsequently adopted by the European Union, was presented in Rovaniemi in 1997.

Finland will build on this foundation and continue to pursue a proactive and responsible role in the context of international cooperation in the Arctic.

The whole of Finland takes a keen interest in the Arctic region

There are various definitions of the Arctic region for various uses, one being the area demarcated by the Polar Circle. Although Finland has no coastline on the Arctic Ocean, much of its territory lies north of the Polar Circle. Lapland, Finland's northernmost province, is an essential projection of Finland's Arctic image. However, as far as the economy, skills and competence, education and training and research are concerned, there is nationwide interest in the region. This is the approach that the new Arctic strategy is based on. 60. Of all the people living north of the 60th parallel, nearly one third are Finns.

In the context of international cooperation, Finland's Arctic objectives are associated with its general policies regarding the promotion of stability, cooperation and sustainable development. At the same time, they are linked to the interests of Finnish business and research communities.

For the Finnish economy, the Arctic region represents a growth market close to home where Finland enjoys a natural edge to be active and succeed. This is an area where Finland's geographical, cultural and competence-based advantages come to the fore. However, success calls for long-term, visionary cooperation and close networking between the authorities and private companies both at the national and international levels.

Finland is in a position to assume a key role, open up new opportunities and innovate in areas such as Arctic and cold climate expertise, construction, technology, product development, business operations, research as well as in value-added products drawing upon the northern environment.

Finland is a leading expert in the Arctic maritime industry and shipping

Finland has a strong national interest to retain its position as one of the global leaders in the training, research, product development, operations and business activities related to Arctic maritime technology and shipping. Multi-disciplinary cold climate expertise and Arctic maritime technology are directly linked to the business opportunities offered by the region.

Finland has long traditions and leading expertise in winter navigation; Finnish ice-reinforced vessels have been operating for years in the Arctic, including the North-East Passage. Finland's ambition is to be a leading expert in Arctic maritime industry and shipping – as it is, Finnish companies are already actively involved in projects to develop Arctic sea areas. Finland also manufactures advanced, state-of-the-art Arctic ice-breakers. Important export markets for Finnish maritime technology include Canada, Norway, Russia, the United States and China.

To reinforce Arctic navigation skills and expertise, coordinated action is called for to develop training, research, administrative cooperation and, in particular, cooperation with the other Arctic countries. Owing to the nature of the competition and markets in the sector, contacts with the government agencies of other countries are essential. Often, the best practices developed in the Baltic region prove to be highly suitable export products for the Arctic market. Moreover, Finland is in a position to offer new types of services to facilitate safe transportation and contribute to the preservation of the marine environment. Finland possesses first-rate expertise in mechanical oil recovery in ice conditions – a technology that is also highly suitable for Arctic sea areas.

Finland is a pioneer in sustainable mining in the Arctic

Mining in the Arctic region is expanding in Finland as well as in other Arctic countries. This development is offering Finnish operators new international business opportunities both in terms

of mining technology and the increasing transport volumes in the Arctic region. A prime example of this is the growing demand for ice-breakers. Environmental and social sustainability considerations are also highlighted in the planning and implementation of the actions. Expertise in mine water management and geotechnological engineering will be further underlined in the face of climate change.

Finnish companies are able to offer new services and solutions for the exploitation of Arctic natural resources with due regard to the principles of sustainable development.

Finland's objective is to attract further foreign investments in its growing mining industry. There are several mines currently operating in northern Finland with plans in place to open new ones. However, prospects for the mining industry have been weakened by the uncertainty of the global economy and the movements in the price of minerals.

For Finland, it is vital to maintain a sufficient level of training and research, the availability of labour and the adequacy of the resources and competencies of the regulatory authorities in this field of activity. At the same time, the areas north of the Polar Circle should be assessed from the perspective of a single Nordic labour market.

Arctic developments impact future transports

The foreseen growth of the mining industry, tourism, the growing energy industry in the Barents region and the opening of the North-East Passage have highlighted issues such as the need to develop transports and logistics, and establish new transport routes in the Arctic. Many potential investment and transport projects involve a cross-border dimension.

As the costs of any investments will be extremely high, the transport system must be addressed as a whole. Finland's near-term measures are based on the Finnish Transport Agency report on the transport needs in northern Finland. An understanding with the neighbouring countries needs to be reached on any decisions on potential new connections from Finland to the Arctic Ocean, and to Sweden, Norway and Russia. The Northern Dimension Partnership on Transport and Logistics provides a useful platform for the development of northern transport services.

Finland offers advanced energy expertise

The oil and gas reserves in the Arctic region are of global significance. It is estimated that 13 per cent of the world's undiscovered oil reserves and 30 per cent of all natural gas reserves are located there. As a result, they attract keen international attention and involve major economic interests. A large part of these reserves lie relatively close to Finland in the area between Norway and the Yamal Peninsula in western Siberia. Finland has a strong interest in participating in the energy business operations in the Arctic region, which will also have an impact on demand for various products and services.

In the energy business, risk identification and risk prevention are of primary importance. Oil drilling in the Arctic, in particular, involves a number of risks. The Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic creates opportunities for utilising Finnish oil recovery know-how. Additionally, multilateral Arctic projects allow Finland to promote the export of Finnish environmental expertise. At the same time, increased attention should be paid to contingency planning and the prevention of oil spills.

To promote the export of Finnish Arctic energy expertise and to initiate cooperation, inter-company cooperation is called for, particularly with companies in Norway and Russia.

Finland possesses special expertise in energy efficiency and the use of renewable energy sources, especially wood energy. The Arctic region needs new electricity transmission lines and decentralised energy production. As a result of the increased economic and industrial activity in the region, the natural environment will be subjected to greater stresses which, in turn, will create a need to develop public utilities. At the same time, it will offer opportunities for Finnish cleantech expertise and companies engaged in this line of business.

Finland will intensify the efforts to promote its special areas of expertise in order to boost exports. This calls for an active contribution both from Government and private companies as well as cooperation between the various actors involved.

Arctic cooperation calls for regional operators and interregional contacts

From Finland's perspective, Arctic operations fall into three categories: international, national and regional. Geographically, Lapland, Finland's northernmost province, is an Arctic region and like all Arctic areas it is characterised by sparse population and long distances. Hence, it is often in Lapland that the strategic objectives related to tourism, renewable energy sources, land use, mining operations, transport, culture and indigenous peoples, etc., are felt most tangibly.

As well as Lapland, the Barents Regional Council covers the regions of Oulu and Kainuu, with Northern Karelia holding an observer status in the Council. The regions and regional operators play a crucial role in cooperation in the Barents region and in the use of certain funding instruments related to cross-border cooperation. Additionally, the northernmost municipalities of Finland are part of the Saami Homeland. The rights of the Saami will be promoted through active participation in the international cooperation geared to enhance the legal and actual protection of indigenous peoples.

Aside from cooperation in the context of the Barents region, regions and municipalities are not truly represented in Arctic cooperation. Finland endorses a policy of finding a natural role for them as Arctic actors.

For Finland, the structural funds of the European Union and the aid for sparsely populated areas are central instruments in facilitating the regional development of northern and eastern Finland. The programme areas defined in the partnership agreement between the EU and Russia should be extended to cover the Barents region cooperation area in its entirety.

Welfare and local population

The necessary prerequisites for the welfare of the people living Finland's northern parts must be secured. Welfare encompasses mental and material well-being, access to work, efficient basic services, equality, security and education. Additionally, a thriving local population contributes to economic stability and enhances competitiveness. Aside from the more conventional business models, information and communication technology offers new possibilities to improve civic welfare, for example through electronic services.

Lapland boasts an efficient infrastructure, and the international developments described in the strategy offer bright prospects for the local economy. This creates favourable conditions for securing a high quality of life for the people living in the northern environment.

The Saami are the only indigenous people in the European Union. In Finland, the status of the Saami is guaranteed by the Constitution. Finland is committed to further reinforcing the position of the Saami language and culture, and securing the availability of services in the Saami language. At the international level, Finland seeks to ensure the participation of indigenous peoples when issues affecting their status are addressed. Finland finds it important to guarantee that the organisations of the indigenous people represented in the Arctic Council are able to participate in the work of the Council at the various levels.

Technological applications, innovations and efficient services called for

Aside from efficient transport services, reliable, high-capacity information networks and digital services are instrumental in boosting economic activity in northern Finland as well as improving competitiveness in the country as a whole. The adoption and utilisation of smart solutions drawing upon advanced communications technology need to be promoted in all sectors.

The sources of livelihood in the north depend on smooth air, road and railway transport services, which are also necessary to respond to the need for international connections. Other elements essential to housing, services and government actions are to improve risk management, and to secure sufficient data communications capacity and performance in the sparsely populated northern regions.

Electronic communication networks and digital services are of key importance to the efficiency of society and the welfare of the citizens. As the markets for ‘cloud services’ are estimated to expand considerably, Finland is striving to establish itself as a hub in the cloud service industry. The Nordic climate is ideal for computer centres that require efficient cooling. Finland’s geographical location in the northern latitudes may improve its edge in the competition for information-intensive industries.

The growth in adventure and nature tourism is reflected in Lapland’s position as a leading Arctic tourist destination. To succeed in developing and increasing tourism, it is necessary to cherish the natural scenery, environment and the uniqueness of the local culture. And since the infrastructure, level of service, research and training related to tourism should be of the highest standard, all efforts should be made to ensure access to sufficient data on the industry.

Additionally, solutions conducive to a good quality of life and specifically tailored for northern conditions are called for. One such solution is Arctic design, which refers to design that draws upon an understanding of the Arctic environment and circumstances, while giving due consideration to the peoples’ adaptation to Arctic conditions. On the whole, Arctic livelihoods require innovations and greater added value in production.

At the same time, the mere fact that the Arctic environment in itself is highly challenging may offer business opportunities. For example, Lapland has served for years as a major winter testing ground for the automobile industry. As far as satellite reception is concerned, Lapland’s geographic location is ideal. Satellite services could be upgraded on the public-private partnership basis into a new type of service catering for international and domestic customers. The investments made in the Arctic Research Centre of the Finnish Meteorological Institute enable a substantial expansion of these operations.

Arctic operations call for a dialogue and sustainable development

To support decision making and reconcile the various viewpoints in areas such as land use, a more active dialogue is required between the parties representing the research community, business and industry, local communities and the civic society - internally and with the public sector. Finland advocates and applies an interactive approach throughout the Arctic regions at both national and international levels.

For the Arctic regions, it is vital to be able to reconcile traditional livelihoods with the modern industrial-scale exploitation of natural resources. For example, reindeer husbandry is of deep-seated social and cultural significance while at the same being a source of income. For the Saami, reindeer husbandry is an integral part of the indigenous language and culture. Yet the area designated for reindeer husbandry in Finland is much larger than the Saami region extending far south of the Polar Circle.

Lapland has an extensive network of national parks and nature preservation areas with natural assets of global importance. While representing significant assets in the Arctic context, these areas are also important to reindeer husbandry and tourism.

As far as the sustainable use of the renewable natural resources in the Arctic region is concerned, there are a number of ways to accomplish this – from the gathering and use of natural resources to the forest industry and bioenergy production. Aside from projects of major economic importance, small-scale, nature-based businesses, crafts and local food production are important in shaping local identities and diversifying the range of local livelihoods. Additionally, the importance of solutions relying on local, renewable wood materials is highlighted in energy production. Nature assets are also important in terms of well-being and recreation. Favourable operating conditions need to be secured for the game and fishery industries as well as for the preservation and survival of Arctic species.

The forest and wood-based industries are currently undergoing a transition. The forest sector plays a crucial role as a driver of the low-carbon bioeconomy in providing a basis for new products, materials, services and forms of energy. In 2013, forestry and the forest and timber industry employed directly a total of 3,200 people in Lapland. Additionally, forestry provides a supplementary source of income to numerous forest owners. In Lapland, the forest sector accounts for a much larger percentage of the overall economic activity than in the rest of Finland. New businesses making use of wood fibre as well as immaterial forest assets and ecosystem services are emerging to complement the more traditional ranges of products. Nature tourism is growing at a brisk pace. Apart from this, other service production will also benefit from Lapland’s unique forest environment, directly or indirectly.

Expertise in wood processing and its productisation creates opportunities, especially for small and medium sized enterprises. They have access to a high-quality raw material grown in the harsh northern conditions, which also provides a sound basis for building up Finland’s international image.

The need for research, education and training as well as access to and the transparency of information is highlighted

Finland’s extensive and in-depth Arctic expertise is a result of its highly advanced education system, where its position as an Arctic country is taken into account at all levels of tuition. Arctic and cold climate research is carried out and training provided at several universities and research institutes in many academic disciplines. Finnish Arctic expertise is maintained and developed with the ambition of achieving the highest international level. It calls for investments

in education, training and research; the ongoing development of and support for Arctic expertise in higher education institutions; and closer collaboration between the various Arctic operators from both within and outside the academic framework. In this respect, international networks, contacts and mobility are of great and ever increasing importance. Finnish actors play a visible and proactive role in this area.

Research also is important in providing information in support of decision making and the Arctic policy. Research may also help companies drive their business operations in the region.

From the standpoint of Finland's Arctic objectives, broad-based access to and transparency of Arctic knowledge are of key importance. This need is further emphasised by the rapid transition that the Arctic region is currently undergoing, accompanied by a growing international interest. It is vital for society as a whole, including the policy makers, to understand what this transition in the Arctic is all about.

Finland's position as an Arctic Member State of the European Union offers it an opportunity to generate and disseminate comprehensive information on the Arctic sorely needed by the Union. Finland is working for the establishment of an EU Arctic Information Centre under the auspices of the Arctic Centre at the University of Lapland. At the same time, Finland is making use of the communications and exhibition activities of the Arctic Centre to promote the visibility and availability of Finnish Arctic expertise. Once launched, the EU Arctic Information Centre would serve the Arctic information needs of the entire European Union.

Environmental issues are an integral part of a bigger picture

Climate change will have serious implications for the entire planet. While the evidence of change is visible everywhere, the process is particularly dramatic and fast in the Arctic region where it affects the very essence of the region in the quality and quantity of the ice and snow cover. The increasing level of atmospheric carbon dioxide is already accelerating the acidification of the seas. The changes will have a multitude of effects on the environment and living conditions in the Arctic. Moreover, the developments in the Arctic region will be reflected in other areas – the melting of the polar ice cover and permafrost will further accelerate global warming so undermining the stabilising influence that the polar ice cap has on global climate change.

Arctic countries – many of them economically powerful nations – have a particular responsibility in the efforts to reduce the emissions of greenhouse gases and short-lived climate pollutants, such as black carbon and methane, which speed up the climate change. In global climate negotiations, Finland advocates ambitious emission reduction targets by highlighting issues related to climate change in the region.

There is a growing need to deepen the dialogue between governments and the scientific community on the global cause-and-effect relationships of climate change. Finland's policy in adapting to climate change and its activities in the region should pay more attention to the evaluation and management of the risks of climate change; the promotion of the measures required to develop livelihoods based on renewable natural resources; and the use and stewardship of water resources.

Finland advocates both the protection as well as the ecologically sustainable economic and social development of the Arctic land and sea areas. Ecological sustainability should be closely integrated into economic and social development. To accomplish this, a sound knowledge base,

close collaboration between the various administrative sectors and harmonised policies are called for. Further development of the network of nature conservation areas in the region is a more pragmatic and faster way than legislation in improving the protection of the Arctic environment and clarifying the framework for economic activity.

The risks associated with the operations in the region and potential legal and other consequences must also be evaluated in terms of corporate social responsibility. Further efforts are called for to develop the methodology of environmental impact assessment and risk management specifically for Arctic conditions.

Climate change poses a serious immediate risk to biodiversity. Special attention must be paid to the vulnerability of the natural environment and the need to foresee developments threatening biodiversity. Closely linked to biodiversity is the preservation of the traditional knowledge possessed by the indigenous peoples. The network of conservation areas in the Arctic region, particularly in the sea areas surrounding the North Pole, must be developed both in order to promote nature preservation and to clarify the framework for economic activity.

A stable and secure operating environment benefits all

The security and stability of the operating environment is of great importance to all activities in the Arctic region. Finland promotes stability and security in the region in line with its foreign and security policies. As security challenges are complex and closely linked with more far-reaching security considerations, is vital to improve the situational awareness regarding the region and monitor its security developments. Finland's policy is to respond to security challenges as part of a wider security policy context. This necessitates a high level of overall preparedness to be achieved through cooperation between the authorities, business and industry, NGOs as well as through international cooperation.

Finland works for the peaceful resolution of pending issues and potential disputes in the Arctic region in accordance with international law.

All the branches of Finland's defence forces have considerable cold climate expertise and Arctic capabilities. As a result, Finland is well-placed to offer Arctic training and exercise activities to international partners, which will also improve the Finnish military's collaborative capabilities. Security agencies are able to assist with search and rescue operations and help mitigate natural disasters and environmental damage. Exercises aimed at improving collaboration between various rescue services agencies, such as the Barents Rescue Exercise, are also important.

The best practices in situational awareness and inter-agency cooperation developed for the Baltic Sea can also be employed in the Arctic region. Similarly, the best practices in crime prevention and fight against organised crime developed in the Nordic countries and the Baltic Region can also be applied.

Collaboration between crime prevention authorities is highly efficient in the Circumpolar region encompassing the northern parts of Finland, Sweden and Norway.

The Arctic dimension is an important part of Finland's foreign policy

International cooperation in the Arctic is an essential element of Finnish foreign policy. Increasing attention is being paid to Finland's Arctic role in the context of diplomacy and the efforts to build up the country brand by making use of the Team Finland approach, among

others. Finland's objective is to bolster its position as an Arctic country and to reinforce international Arctic cooperation.

Finland considers the Arctic Council as the main forum for addressing Arctic issues. Finland is in favour of the Council engaging in an open dialogue with external operators and supports, in principle, the inclusion of new observers who are expected to commit to the goals of the Council.

The Arctic Council's institutional role has been growing following the establishment of a permanent secretariat, the conclusion of binding international agreements and the extension of the Council's agenda. Finland supports the continuation of this development and the recognition of the Arctic Council as a treaty-based international organisation.

The Arctic Council is engaged in valuable efforts that deserve public recognition; what is more, full use should be made of the information produced by the Council in support of decision making. However, there is still a need to increase the visibility of the Council.

As of autumn 2013, Finland will hold the presidency of the Barents Euro-Arctic Council (BEAC) for a two-year term. Barents cooperation will introduce a regional perspective to the Arctic policy and has played a part in establishing permanent networks for cross-border cooperation.

The geographic areas covered by the BEAC, the Northern Dimension and related partnerships partly overlap since the Northern Dimension focuses on the Baltic and the Barents region. Barents cooperation and Northern Dimension partnerships represent major potential in view of the entire Arctic region. As well as the Nordic countries, both the EU and Russia are involved in this cooperation. Increasing mutual consistency and links between Barents cooperation and Northern Dimension policies will create attractive opportunities, for example in the environment and transport sectors. Finland pursues a proactive role in fostering Northern Dimension Partnerships. Arctic cooperation in the context of the Nordic Council of Ministers largely supports the activities of northern regional councils, all in line with Finland's national interests.

In 2010, Finland launched an Arctic partnership with Russia, which represents a strong economic and practical approach responsive to the needs of enterprises operating on a commercial basis. Finland is also considering other bilateral Arctic partnerships as well as multilateral partnerships with Norway and Sweden.

The European Union plays a key role in Finland's Arctic policy. Finland cooperates with Sweden and Denmark to clarify and reinforce the European Union's Arctic policy. The European Union's observer status in the Arctic Council serves this purpose.

II Elements of the Arctic strategy

1. Vision for Arctic Finland

Vision: Finland is an active Arctic player with the ability to reconcile the limitations imposed and business opportunities provided by the Arctic environment in a sustainable manner while drawing upon international cooperation.

The new policies under underlying Finland's current Arctic strategy were adopted by the Government on 10 October 2012:

Finland as an Arctic expert

- **Finland is an Arctic country**

The Finn's Arctic identity has been shaped by climate, nature, geography, history and experience. Finland as a whole is a truly Arctic country: after all, one third of all the people living north of the 60th parallel are Finns. The Saami's position as the only indigenous people within the European Union is duly recognised and their participation in the handling of affairs affecting their status as indigenous people is ensured. The northern parts of Finland must remain a stable and secure operating environment.

- **Finland is an Arctic expert**

The Arctic region is undergoing a major transition. Finland possesses the top-level expertise and the know-how it takes to understand, adapt to and even make use of this transition. Maintaining and developing a high standard of expertise and research are of primary importance. Finland's ambition is to set an example as an Arctic expert both in research and in the responsible commercial exploitation of such expertise.

- **Finland complies with the principles of sustainable development and respects the basic conditions dictated by the Arctic environment**

Understanding the global effect of climate change, the sustainable use of natural resources as well as recognising the basic conditions imposed by the Arctic environment lie at the very core of Finland's Arctic policy.

- **International cooperation in the Arctic**

Reinforcing its Arctic position, promoting international cooperation and maintaining stability in the Arctic region remain Finland's key objectives.

1.1. Background for updating the strategy

In accordance with its Programme, the Government decided on 16 May 2012 to review its Arctic policies by autumn 2012 and update Finland's Strategy for the Arctic Region by summer 2013. The Arctic policies were adopted by the Government on 10 October 2012.

The strategic review was prepared by a working work appointed by the Prime Minister on 31 October 2012, in which all the ministries were represented.[1] This network of designated civil servants involved in the task was chaired by Ambassador Hannu Halinen. Work on the strategy was overseen by the permanent secretaries of the key ministries under the supervision of State Secretary Olli-Pekka Heinonen. Additional support for the efforts was provided by the Arctic Working Group appointed by the Prime Minister's Office and chaired by State Secretary Heinonen.

Finland's first Strategy for the Arctic Region announced in 2010 focused on external relations as required in its brief. It defined objectives for Finland's Arctic policy and the means for advancing these objectives nationally and in various international and regional fora within the context of the European Union, Nordic cooperation and bilateral relations. The updated strategy is based on a comprehensive approach and consideration of the big picture. Finland seeks to formulate a coherent and reliable assessment of and vision for the Arctic region. Underlying this approach is the perception that Finland has major interests to look after in the Arctic. It involves aspects related to business, expertise, international cooperation, Finland's northernmost parts, overall reinforcement of the country's Arctic position, and efforts to promote sustainable development in the region.

The previous strategy outlined the primary objectives and proposed measures for attaining them. The current strategy gives a more comprehensive presentation of the measures necessary for achieving these goals based on partly revised objectives.

[1] See Appendix: Decision on updating Finland's Arctic strategy and allocation of resources

1.2 International operating environment

No single, unambiguous definition exists for the Arctic region. Its boundaries vary according to academic disciplines or political agreements. Similarly, for the purposes of the present strategy, the Arctic region is to be understood flexibly in the given context. About one quarter of Finland's territory lies in Lapland north of the Polar Circle. The fundamental assumptions underlying the strategy are that Finland possesses a wide range of expertise related to the Arctic and that the region is of great relevance to the whole of Finland.

Interest in the Arctic has also grown in countries outside the region. Its economic potential and the foreseen new transport routes underline the strategic importance of the region in a way that

will also have implications for security policy. An increasing number of nations will display a keen interest in the area in the future.

Underlying all these developments is the accelerating climate change. At the same time, the position of the Arctic region is affected by the shift to Asia in the focus of the global economy. The transition in the Arctic will take place concurrently with the changes in the re-division of powers in international politics.

While the growing interest shown by an increasing number of countries in the Arctic is motivated by the new opportunities emerging in the region and its growing importance, it is also a result of these nations' enhanced international position and improved capabilities for action.

[Alla oleva taitetaan tekstilaatikoksi]

International cooperation and international treaties also lay the foundation for Finland's activities in the Arctic.

- Finland regards the ***Arctic Council*** as the primary cooperation forum on Arctic matters.
- **The Barents Euro-Arctic Council and the Barents Regional Council** introduce a regional perspective to the more general Arctic policies.
- ***The European Union*** *is closely involved with the Arctic region through political, geographical, economic and scientific developments as well as through* ***the Northern Dimension****.*
- ***The Nordic Council of Ministers*** *has a programme in place for Arctic cooperation.*
- ***The Nordic countries*** have also intensified their mutual cooperation in **Arctic affairs**.
- ***The United Nations (UN)*** and various UN bodies promote international cooperation in several areas important to the Arctic region.
- ***The International Maritime Organization (IMO)*** is preparing regulations for vessels navigating on Polar seas.
- Multilateral cooperation is complemented by ***bilateral Arctic partnerships***.

1.3 Policies adopted by other Arctic countries

Over the past few years, all the countries in the Arctic region have prepared Arctic strategies or issued position papers outlining their policies for the region.

For many years now, *Norway* has invested heavily in the northern regions and the country strives to be on the front line in all issues concerning the Arctic region. *High North* occupies a central stage in Norwegian politics. Economic cooperation with Russia plays an important role in Norway's Arctic policy. Norway is also active in encouraging its partners to commit to the issues related to the northern areas.

Canada holds large land and sea areas in the Arctic where it underlines its sovereignty. Canada has played an important role in the Arctic Council and is a leading country in Arctic research. Canada announced its Arctic strategy in summer 2009 followed by a position paper in 2010.

Iceland adopted a resolution on its Arctic policy in March 2011, which underlines the importance of regional and multilateral cooperation. Iceland finds that it will benefit from its geographical location once the necessary preconditions for Arctic sea transports improve.

Sweden announced its Arctic strategy in May 2011. Sweden's priorities include climate and the environment, economic development and the human dimension. A major theme running through the strategy is environmental protection, which is addressed from a wide range of perspectives. By mitigating climate change and preserving biodiversity, it is possible to secure adequate living conditions for the local inhabitants and promote economic growth.

Denmark is an Arctic country because of Greenland, whose autonomy Denmark has been reinforcing. The Arctic strategy of the Kingdom of Denmark was published in August 2011. Along with Finland and Sweden, Denmark holds a significant position within the context of EU cooperation concerning Arctic issues.

The United States announced its Arctic strategy signed by the President in May 2013. It is a concise political document designed to highlight the USA's priorities in the Arctic region and intensify the focus on Arctic issues particularly at the national level. The strategy addresses security, a peaceful, balanced and responsible development of the region, and the promotion of international cooperation.

Russia announced its new Arctic strategy approved by the President in February 2013. Its lists six priorities: overall socio-economic development of the Arctic zone; the creation of an advanced ICT infrastructure; the assurance of environmental safety; international cooperation in the Arctic region; the assurance of military security; and defence of the state borders in the Arctic region.

2. Finland's Arctic population

2.1 Social sustainability, a well-functioning society and working conditions

The Arctic region has a total of population of about four million, of whom indigenous peoples account for about 10 per cent. There are over 180,000 inhabitants in Finnish Lapland.

As a result of global warming and increased economic activity, the conditions in the Arctic have changed in a way that will have implications for health, well-being and the living environment as well as the call for action to adapt.

Sustainable development requires economic, social and ecological sustainability.
From the standpoint of Finland's northern parts, it is imperative to secure the necessary prerequisites for a good quality of life for the local inhabitants. Welfare includes access to work, wellness at work, efficient basic services, equality, security and education. Life in northern Finland is complicated by long distances, an ageing population, labour market issues and the inadequacy of the resources necessary for providing government services. Increased economic activity will create new opportunities while at the same time presenting a number of challenges. In all operations, due consideration must be given to the local inhabitants. The security of the people and the operating environment is critical in terms of providing a competitive edge.

When a well-functioning infrastructure, the Arctic experience accumulated in Lapland and the network of operators is combined with the bright economic prospects offered by the

development of the Arctic and Barents regions, Lapland has every chance of providing an attractive living environment in the future.

Electronic communication networks and digital services are of key importance to the efficiency of society and the welfare of the citizens. As provided in the Government Programme, the introduction of smart solutions across administrative boundaries based on advanced information and communications technology will be promoted in all sectors of society. To manage this process, all ministries are currently preparing smart strategies for their respective administrative sectors.

As the livelihoods important to the Arctic develop and the northern cities grow, new jobs will be created and the demand for labour will increase. However, as it is challenging to find skilled labour in a sparsely populated area, the opportunities and problems associated with the mobility of the workforce will be felt more tangibly than further south. Familiarity with the Arctic conditions and knowledge of the Scandinavian languages, Russian and English would offer employment opportunities for job-seekers across the entire Arctic region. Arctic experts are just as much in great demand in Rovaniemi, Inuvik, Murmansk as they are in Hammerfest. For this reason, Finland finds it important to promote the mobility of labour in the Arctic region.

In particular, the availability and free mobility of labour and businesses are of vital importance to economic growth and investments in the Nordic countries. As the Nordic countries are the main trading partners for one another, they benefit from mutual expertise, development and transparency. As neighbouring countries, Finland, Sweden and Norway can advance in many areas important to the Arctic by facilitating the movement of experts and employees proficient in languages across the national borders. The Nordic Common Labour Market Agreement, signed in 1954, has contributed to the mobility of labour in the Arctic border areas.

Another factor promoting mobility between Nordic countries is commuting. To make more efficient use of commuting, smooth transport services and flexibility on the part of the employers are called for.

The Nordic Mining School, jointly launched by the Universities of Oulu and Luleå, serves as a prime example of how the efforts to respond to the challenges of the future labour market should begin already in education.

In tourism, seasonal work and career development can be facilitated in the north by working together with the Arctic neighbours. For example, by combining the summer-intensive tourist season in Norway with the quieter season in Finland and, conversely, Finland's busy winter season with Norway's low winter season it is possible to offer opportunities, particularly for young people, to find permanent employment in the north.

The Arctic conditions – low temperatures, harsh weather and the seasonal variations in the amount of daylight – impose special occupational safety requirements. As it is, the number of people working in Arctic conditions is increasing as a result of the growth of the mining, energy, tourist and adventure industries. All this will increase the volume of traffic and the provision of ancillary services.

Finland possesses special expertise in research into Arctic working conditions and in the provision of a safe working environment. For years now, the Finnish Institute of Occupational Health has been engaged in close cooperation with similar agencies in Northwest Russia. Additionally, cooperation in this area is promoted through the Northern Dimension Partnership in

Public Health and Social Well-being. Sharing special expertise and exchanging experiences between experts in occupational safety and health in Arctic conditions are highly efficient. Finland seeks to advocate the Nordic wellness-at-work model through regional cooperation.

2.2 Finnish Saami population and other indigenous peoples in the Arctic

Indigenous peoples are represented in the Arctic Council as Permanent Participants through six organisations. The Saami people residing in Finland, Sweden, Norway and Russia are represented on the Arctic Council by the Saami Council. In the Working Group of Indigenous Peoples of the Barents Euro-Arctic Council, the Finnish Saami are represented by the Saami Parliament.

The rights of indigenous peoples are one of the priorities of Finland's international human rights policy. Finland seeks to improve the living conditions of indigenous peoples so as to allow communities and cultures to survive and evolve on their own terms. Finland underlines the need

to consult indigenous peoples and to offer them adequate opportunities to be involved in various actions, particularly when they have a direct impact on their living conditions.

The Saami are the only indigenous people in the European Union. In Finland, the status of the Saami as an indigenous people is secured by the Constitution. The Saami have the right to preserve and develop their language and culture as well as practise their traditional livelihoods.

As provided in the Government Programme, the rights of the Saami people will be promoted through active participation in the international cooperation geared to enhance the legal and actual protection of indigenous peoples. Finland finds it important to secure active participation by the indigenous peoples in this cooperation.

Prime Minister Jyrki Katainen's Government Programme singles out the ratification of ILO Convention No. 169 on Indigenous and Tribal People as one of its objectives for the electoral period 2011–2015. Work is in progress to explore the preconditions for such ratification.

For several years now, the Saami language and culture have experienced a renaissance. The Government has supported these developments by allocating additional resources for teaching Saami and for projects aimed at reviving the knowledge of the language among children. Of the three Saami languages spoken in Finland, Inari and Skolt Saami are threatened by extinction. In March 2012, a working group appointed by the Ministry of Education and Culture submitted its proposals for a programme to revive the Saami language. Efforts to reinforce the Saami language and culture need to be continued.

The Saami people

- *An indigenous people living in the territories of Finland, Sweden, Norway and Russia.*
- *The Saami population is 82,000–97,000.*
- *The Saami in Finland number about 10,000, of whom less than 40 per cent live in the Saami Homeland.*
- *Saami Homeland: the municipalities of Enontekiö, Inari and Utsjoki and the area covered by the Reindeer Owners' Association of Lapland in Sodankylä.*
- *The Saami languages spoken in Finland are northern Saami, Inari Saami and Skolt Saami.*
- *The Saami living in the homeland enjoy autonomy afforded by the Finnish Constitution as of 1996.*
- *The duties related to autonomy are managed by the Saami Parliament elected by public ballot.*

3. Education and research

3.1 Finland's Arctic expertise

Finland's extensive and in-depth Arctic expertise is a result of its highly advanced education system, where its position as an Arctic country is taken into account at all levels of tuition. Finland invests in expertise and research related to northern areas. Diversified Arctic research is carried out both at universities and research institutes. Expertise is also possessed by many companies.

Because of Finland's northern location, nearly all areas of research are in some way linked to cold climate expertise and accordingly Arctic conditions. Universities and research institutes engaged in Arctic research and their respective special fields are listed in the Ministry for Foreign Affairs' publication 'Arctic Expertise in Finland'[2].

Change in the Arctic is specifically related to climate change, the exploitation of natural resources and land use. As they affect both the environment and society, an inter-disciplinary approach is required. Additionally, knowledge of the Arctic nature and the special features of the geophysical environment require long-term basic research and field work. Operating in the Arctic calls for broad-based research into and the development of technology suitable for cold-climate conditions.

The research carried out in Finland – especially in monitoring the state of the environment and renewable resources, and in collecting long-term research data – is of world-class relevance. Prime examples of this are Finland's special expertise in areas such as determining the composition of snow, ice and air where it of the highest international calibre. Similarly, research plays a key role in the area planning, licensing procedures and evaluation of risks and threats in connection with the various activities. These data are needed for adapting to Arctic climate change and for utilising the opportunities offered by the region.

In the Arctic region, research involves an important social dimension, while at the same time its importance to the Finnish economy is growing.

As a result, the significance of the efficient use of broad-based and diversified knowledge is highlighted in the Arctic region. An important source of Finnish Arctic expertise is familiarity with the local conditions. An active dialogue between the various parties is of great importance when research and surveys are carried out. Moreover, the new knowledge generated by research needs to be actively disseminated to support decision making, expand business opportunities and increase general awareness of the Arctic among the public at large.

By investing in education and research, Finland will be able to consolidate its position and increase its appeal as a leading world-class expert in the Arctic. However, to maintain Finland's expertise and make it possible to reach the top international level, the Arctic expertise of universities and polytechnics needs to be developed and supported on an on-going basis and the cooperation between Finnish Arctic actors intensified. Communications and collaboration between research institutes and universities involved in research and offering Arctic instruction must be increased and improved. Networking plays a crucial role in this context since research data on the Arctic are still limited and fragmented. Broad-based international cooperation between countries both within and beyond the Arctic region is of paramount importance.

Many Finnish universities are engaged in Arctic research. At the universities of Lapland and Oulu and the Rovaniemi University of Applied Sciences (as of 1 January 2014, the Lapland University of Applied Sciences), Arctic and northern priorities are laid out in their strategies. Additionally, the Technical Research Centre of Finland VTT operates an extensive network of sites and field stations in northern Finland. Of all the research establishments, the Finnish Meteorological Institute, in particular, places great emphasis on Arctic research.

[2] http://www.kopijyva.fi/ejulkaisut/ulkoasiainministerio/arktinen_osaaminen/

Finland possesses first-rate Arctic research capabilities and infrastructure in Sodankylä and Pallas, among other places. In Tiks, Siberia, research projects are carried out in collaboration with Russia and the United States.

The knowledge base of Finnish Arctic expertise needs to be strengthened in applied, inter-disciplinary and basic research. To accomplish this, it is necessary to develop synergies, allocate additional resources as well as to enhance the research environments, researcher training and research cooperation.

A national strategy for maritime research is nearing completion. It will, among other things, highlight the importance of inter-disciplinary maritime research in the Arctic.

The ice-breakers operated by Arctia Shipping are also suitable for research use. To this end, the vessels have carried researchers studying the ice conditions in the North-East Passage and on the Beaufort and Chukchi Seas.

Examples of Finnish Arctic research and education

- **Aalto University's Department of Engineering:** Arctic technology is recognised as one of the priorities. The research efforts focus on ice, snow, ground frost and their impact on structures and means of transport. One key area of research is related to Arctic maritime technology and winter navigation, both important to Finland in offering major business opportunities for companies engaged in international trade. Aalto University's Aalto Ice Tank, a multipurpose ice testing tank, also makes it possible to study a wide range of hydrodynamic phenomena in ice-free conditions. In particular, the tank is ideal for vessel maneuverability testing. The tank can be used for generating waves and studying the behaviour of offshore structures in heavy seas.

- **University of Helsinki: accounts for a considerable percentage of Finnish Arctic research**, for example in the fields of geology, geography and physics. The universities of Helsinki, Oulu and Turku operate research units in northern Finland.

- **University of Lapland:** is the northernmost university in the European Union. It conducts research on Arctic populations, communities, the environment, and art and design and their interaction. Additionally, it is assigned nationwide responsibility for social and legal research related to the Saami nation. **The Arctic Centre of the University of Lapland** is concerned with global change, sustainable development and environmental and minority law in the region. Its nationwide role includes the dissemination of scientific information, exhibition activities and expert duties related to the Arctic and Barents Euro-Arctic Council. The Arctic Centre is seeking to establish itself as the EU Centre for Arctic Information. The University of Lapland also houses the **University of the Arctic International Secretariat**, which is responsible for the administration of the cooperation network between the universities, polytechnics and other educational organisations of the Arctic countries. The universities belonging to the network promote the exchange of researchers, students and teachers in the northern regions.

- **The University of Oulu** is an international science university engaged in research into northern and Arctic issues in several fields of science. The university's **Giellagas Institute** is assigned nation-wide responsibility for the provision of education in the Saami language and culture. Research is carried out on Saami history and society. **The Thule Institute Research Centre** is engaged in research into the environment, natural resources and northern fields of activity. For this purpose, it operates a Centre for Arctic Medicine and the NorNet network coordinating environmental and natural resources research. The Oulu Mining School and the Nordic Mining School, established in collaboration with the University of Luleå, respond to the growing needs of the mining industry. **The Sodankylä Geophysical Observatory** is a national special institute subordinated to the University of Oulu.

- **Finnish Meteorological Institute:** Arctic research is one of the institute's strategic priorities. The FMI Arctic Research Division studies the various layers of the polar atmosphere, biosphere and the surface of the earth generating accurate data on the atmosphere, climate and the environment. The Arctic Research Centre is located in Sodankylä, Lapland. Sea ice research focuses on the methodology and development of remote sensing and ice modelling. Additionally, the institute possesses advanced expertise in hydrography.

- Geological Survey of Finland: geological, geochemical and geophysical research and natural resources exploration in northern regions.

- **Agrifood Research Finland** (MTT), the Finnish Forest Research Institute (Metla) and the Finnish Game and Fisheries Research Institute (RKTL) operate in their respective fields in the north. The three institutes will combine to form a **Natural Resources Institute** responsible for the coordination and integration of research.

- **The Rovaniemi (Lapland) University of Applied Sciences** specialises in the research, training and development of sustainable forest use; the coordination of the use of natural resources; and the management of low-temperature conditions. **The Multidimensional Tourism Institute** is an expert in the Arctic tourism and hospitability industry operated jointly by the University of Lapland, Rovaniemi University of Applied Sciences and the Lapland Tourism College.

- **The Saami Education Institute (Sámi oahpahusguovddáš)** is a multi-disciplinary institute of education providing instruction in the Saami language and culture as well as offering a wide range of vocational training.

- **The Finnish Environment Institute SYKE** is in involved in a range of Arctic Council projects to gather data on environmental toxins, climate change and short-lived climate forcers (SLCF). The institute's expertise ranges from the preparation of control schemes and the evaluation of effectiveness and risks to the assessment of the lifecycle impacts of consumption and production. Additionally, the institute possesses extensive expertise in the field of marine ecology, ice research, shipping and the northern environments.

- **Radiation and Nuclear Safety Authority (STUK):** its regional laboratory in northern Finland is the northernmost laboratory in the European Union to monitor radioactivity. It is also part of the environmental monitoring and assessment network for Arctic areas.

- Finnish Institute of Occupational Health: the institute's Oulu Unit studies working at low temperatures and the effect of cold on the capacity for action and carries out research into the evaluation and management of the detrimental impacts of low temperatures.

- Technical Research Centre of Finland (VTT): low-temperature research, low-temperature technology.

Finnish institutes engaged in Arctic research:
http://www.arcticcentre.org/Suomeksi/TUTKIMUS/Arktinen_tutkimus_Suomessa.iw3

4. Finland's business operations in the Arctic

4.1 Arctic business opportunities

Because of the challenges facing the global economy and the great significance of exports and economic relations to Finland, it is extremely important for Finnish business and industry to seek

growth in all areas where the prospects are favourable, and where Finnish companies have a chance of success. Such prospects are offered by the Arctic region.

Finnish Arctic expertise has long traditions and enjoys a good reputation. It is based on close familiarity with Arctic conditions and the efficient application of this knowledge. Perhaps the best example is provided by Arctic marine technology and related business operations, solutions and services. According to companies engaged in this line of business, competition is becoming increasingly globalised and, as a result, the relative competitive edge achieved in the past is about to crumble unless strong action is taken. At the same time, the Arctic region is offering a wide range of new business opportunities attractive to numerous companies, even in areas other than marine technology. For these reasons, business and industry takes a keen interest in Finland's Strategy for the Arctic Region, which foresees a range of measures for combining the common interests of the State and the business community.

Global competition is of great interest and concern to business and industry. In the Arctic region, it will mean both major growth opportunities and extremely intense international competition. The Arctic projects being planned and implemented in Canada, Norway, Sweden, Denmark, the United States and Russia are attractive to investors, large corporations and networks of companies across the world. Additionally, the growing presence of China and other Asiatic countries and companies in the Arctic is a fact of life that needs to be taken into account.

The extensive Arctic expertise possessed by Finland and Finnish companies creates an excellent basis for generating new business. Special efforts are needed to upgrade this expertise and wealth of experience into sound business opportunities. The extreme conditions prevailing in the Arctic region – ice cover, the Arctic cold and strong winds – impose a number of additional challenges to operations. Finland possesses extensive experience from operating in the cold areas in northern latitudes, which offers companies excellent possibilities for seizing the new business opportunities opening up in the Arctic.

Finland promotes the export of environmental expertise to Arctic areas. Multilateral projects offer the opportunity to increase these kinds of exports in areas such as water and wastewater management; the management of hazardous waste; oil spill prevention; and energy efficiency and energy saving. Finland's competitive edge lies in environment-friendly solutions and the ability to carry on business operations with due regard to the limitations imposed by the natural environment. The utilisation of natural resources calls for broad-based cooperation between nations and companies. Finland advocates the clarification of the environmental conditions for business through the adoption of common principles based on broad agreements.

For Finland and Finnish companies, it is important to get involved in new projects or those that are already underway in the Arctic region. The international projects designed to develop the region and utilise natural resources are truly extensive. To participate in these projects, Finnish companies need to able to form alliances and offer a broad range of solution-type products and services. This calls for a new type of expertise and may also require umbrella organisations that allow companies to offer their services to international Arctic projects as part of a wider network. A further challenge to Finnish companies is posed by the financing of the necessary investments.

The mere size of the projects – as well as the special nature of the operating environment – may require State support and involvement. The State's role may consist of creating networks, launching and supporting reference projects or organising visits by corporate delegations. While this is of special importance with Russia, it is also useful in dealings with other Arctic countries.

Access to emerging projects calls for long-term efforts and a broad-based commitment to regional development and local presence.

Major energy and other investments in Finland's neighbouring areas and their multiplier effects generate extensive business opportunities for Finnish companies. Aside from industry and technology, this holds true for services - for example, when land-based infrastructure is required to support an offshore field.

The consumption of bioenergy is steadily increasing. The next significant breakthrough in this respect, also in the Arctic region, will be made in motor fuels. In the future, biochemicals, biomaterials, medicine and cosmetics will be derived from wood. Further refinement and the marketing of timber grown in Arctic areas will offer new opportunities for small and medium sized companies.

Finnish companies have solid expertise in construction in Arctic conditions and wishes to harmonise the relevant standards.

Mastery of Arctic conditions and Arctic testing are further examples of Finnish expertise. Over the past few decades, Lapland has become an increasingly important development and testing ground for the international vehicle industry, which has given a boost to the European low-temperature technology worldwide.

As one of the three centres of excellence singled out in the Design Finland Programme (Ministry of Employment and the Economy/Ministry of Education and Culture 2012), the University of Lapland is foreseen to assume responsibility for Arctic design as its chief competence area. It refers to design stemming from a profound understanding of the Arctic environment and conditions, in which due consideration is also given to human adaptation. Design services are needed in a wide variety of areas from services, new products and production techniques to ice-breakers where designers need to be familiar with the Arctic conditions, opportunities and environmental limitations.

Arctic expertise and its commercialisation is also addressed in Finland's Strategy for Maritime Transport, currently being prepared under the supervision of the Ministry of Transport and Communications and due for completion by the end of 2013.

Areas of Finnish Arctic expertise

- *Offshore industry*
- *Maritime industry*
- *Shipping*
- *Carriage by sea*
- *Weather and ice information services*
- *Forestry*
- *Mining and minerals*
- *Metals*
- *Tourism*
- *Traditional livelihoods*
- *Low-temperature expertise*
- *Winter testing*
- *Metrology*
- *Generation and distribution of electricity and thermal energy*

- *Energy saving and energy efficiency*
- *Wind power technology*
- *Construction and infrastructure*
- *Environmental technology*
- *Management of environmental impacts*
- *Sustainable social concepts*
- *Arctic environmental expertise*
- *Health and well-being in the Arctic*
- *Waste management technology*
- *Information technology*
- *Public e-services*
- *Innovation-driven development*
- *Cold climate research*
- *Bio- and nano-sciences*
- *Risk analyses*
- *Oil spill prevention technologies*
- *Materials technology*
- *Water management*

4.2 Energy industry

According to the U.S. Geological Survey, 13 per cent of the world's undiscovered oil resources and 30 per cent of natural gas resources are located in the Arctic. Even higher figures have been proposed. This underlines the need for oil production systems and related solutions designed for Arctic conditions.

Exploiting these gas and oil resources calls for an efficient infrastructure. All oil drilling and production structures in the Arctic must be specifically designed for the prevailing conditions and stringent requirements met to withstand the action of ice, wind and waves, for example. The risks associated with the utilisation of the oil resources must be identified and evaluated, and due precautions taken to manage them.

Finland's expertise in structural and materials engineering makes it possible to participate in these projects. Aside from actual oil and gas drilling, the construction of the infrastructure required for transport and port facilities offer new business opportunities.

As far as energy is concerned, Finland possesses special expertise in the energy efficiency of buildings; district heating networks; the use of renewable energy sources and peat as a fuel; the co-generation of heat and electricity; and power grids. Bioenergy and Arctic wind power technology are further areas in which Finland has gained substantial expertise and is involved in major business operations. A number of growth companies with major potential operate in the solar power and recycling sector while others possess advanced expertise in hydroelectric power.

Since Russia is the main market for Finnish Arctic energy expertise, exports necessitate close cooperation between Finnish and Russian companies. This can be promoted through pilot projects and investment schemes, such as the energy-efficiency projects launched within the context of the Northern Dimension Environmental Partnership. Additionally, it is necessary to

make use of the opportunities offered by international financing institutions[3]. Closer interaction is also required between the energy ministries of the two countries and at the local level. Partnerships are being established between research institutes, technology centres and private companies.

New transmission lines and decentralised generation are required for electricity production in the Arctic region. Moreover, the existing power transmission lines in and between Norway and Russia need to be upgraded, offers interesting business opportunities for Finnish expertise. Advanced solutions based on decentralised generation are also needed by communities located in the northern parts of Canada and the United States. With the introduction of technologies based on renewable energy sources, there is a growing interest in local decentralised energy production. Such solutions are both competitive and ecologically sustainable. The growth of this sector creates a market for bioenergy, hydropower and Arctic wind power expertise. Attractive prospects are also offered by the energy efficiency of the built environment and the production and distribution of district heat to communities.

Over the past few years, Finland has gained special expertise in utilising low thermal flow and the northern bedrock for the production and storage of heat, particularly as part of solutions combining several forms of energy. Geothermal energy offers great research, innovation and business potential also in the Arctic environment.

[3] e.g. NEFCO, NIB, EBRD, IFC

4.3 Arctic maritime industry and shipping

As an expert in shipbuilding for Arctic conditions, shipping, winter navigation and maritime and offshore technology, Finland is one of the leading countries in the world. Finland manufactures advanced state-of-the-art Arctic ice-breakers and specialised offshore vessels. Similarly, maritime equipment manufacturers represent the highest standard of technology. A number of leading engineering firms in Finland design and develop solutions for maritime logistics, offshore applications and a range of Arctic vessels. Special expertise is also available in winter navigation and related logistics, ice-breaking, the monitoring and control of sea transports as well as weather and ice information services.

The main export markets for Arctic maritime technology include Canada, Norway, Russia, the United States and China. These countries need new equipment and fleets capable of operating offshore oil and gas fields as well as mining under Arctic conditions.

Intense competition in the sector – and to some extent protected markets – calls for continual efforts to improve competitiveness and develop liaisons with the governmental actors of other

countries. Also, foreign ownership of key companies poses a challenge to the development of Arctic maritime industries in Finland and the implementation of the programmes prepared with a view to national interests. Consequently, efforts should be made to market the Finnish operating environment to global corporations while underlining Finland's logistically ideal geographic location.

The Arctic region continues to involve a range of risks and presents a challenging environment in terms of weather and ice conditions. These elements impose a number of special requirements, such as in the potentially extensive use of the North-East Passage, which is only navigable in summer and autumn. It would only be navigable in summer and autumn. As goods need to reach their destination at a predetermined time, the predictability and reliability of transports are of critical importance. If this challenge can be met, it would offer new business opportunities for Finnish companies. Finnish fleets are ice-reinforced and the crews are skilled in navigating in ice conditions. Some shipping lines have been operating in the Arctic region for years, for example in Greenland and Spitsbergen and along the North-East Passage. Exporting this expertise offers major potential for Finland.

Finnish Arctic navigation skills have also been utilised in North America, particularly in ice-breaking. The objective is to intensify cooperation with the United States and Canada in enhancing the capabilities to perform under Arctic conditions and securing fast response times in the event of impending accidents. Opening the North-East Passage will increase the importance of the Bering Straits in the future. Similarly, the North-West Passage may be increasingly used for shipping in the long term. The sea transport monitoring systems in use in the Gulf of Finland could serve as a useful example for operations in North America and the Arctic region in general.

Aside from navigation skills and technology, new types of services are required to facilitate safe transportation and contribute to the preservation of the marine environment. Forecasting models based on the environment, weather, ice movements and the climate create a basis for commercial services which, in turn, help reduce the uncertainties and risks associated with the Arctic maritime environment.

In addition to ship design, construction and operation capabilities, environmental and oil spill prevention, and control technologies, Finland is in a position to offer a range of off-the-shelf export products based on the best practices developed on the Baltic Sea, such as a vessel traffic service, a vessel reporting system, the utilisation of an automatic vessel identification and communications system, ice-breaking services and the weather and ice information services provided by the Finnish Meteorological Institute.

To improve maritime safety, Finland has studied and developed monitoring and information systems that make use of satellite observations. The best of these systems offer major commercial potential in terms of services.

Arctic satellite monitoring by networking with the satellite and space agencies of other countries will give Finland new commercial opportunities and enable the research and monitoring of Arctic snow, ice and biosphere conditions.

4.4 Renewable natural resources

Business operations utilising the abundant and diverse natural resources of the Arctic region will also enhance the welfare of the local population, prevent depopulation and give a boost to development. Tourism, foodstuffs and handicrafts are prime examples of trades suitable for local entrepreneurs who draw upon the environmental and natural resources. However, the use of renewable resources in these areas involves a number of economic, social and ecological aspects.

Reindeer husbandry is important to the development of the livelihoods and the preservation of the language and culture of northern nations. At the same time, it involves a significant social and cultural dimension for all communities, for which reindeer herding represents a considerable source of income. In total, some one thousand families in Finland earn all or part of their livelihood from reindeer husbandry.

When efforts are made to develop reindeer herding, due consideration must also be given to the capacity of natural pastures in order to adapt herding to an ecologically sustainable level. Additionally, stocks of large carnivores should be managed with due regard to the impacts on reindeer husbandry.

It is important to guarantee the preservation and viability of natural fish stocks and other Arctic species in the rivers discharging into the Arctic Ocean and the watercourses flowing into the Baltic Sea. In particular, the preservation of salmon stocks calls for efficient fisheries management and the sustainable use of fish stocks.

Biodiversity and the preservation of the ecosystem services based on this diversity must be secured through the careful planning of the use of natural resources and land areas. Further development of the network of nature conservation areas in the Arctic region is a pragmatic way of improving the protection of the Arctic environment and clarifying the framework for economic activity. In the efforts to protect global biodiversity, the region plays a significant role since it offers a nesting area for the majority of the world's goose population and for more than half of all the waders, for instance. The migration routes of the Arctic migrant bird populations should be considered as a whole because their overwintering areas extend from the south of the Baltic Sea all the way to Central Africa.

The Finnish State holds a considerable percentage of all the forest assets in Lapland, which are also of major importance to private businesses. While the total forest area is over nine million hectares, four million hectares of this consist of land in forestry use. Over the past few decades, forest growth has clearly accelerated due to the increasing share of young, fast-growing forests.

In recent years, the forest sector has accounted for 8 to 17 per cent of the overall economic activity in Lapland, exceeding the national average by a wide margin. Roundwood removals (averaging 4.2 million cubic metres) represent 38 per cent of annual growth. Most of the harvested timber is used by industry. In 2010, the total value of the output of wood-processing companies was estimated at EUR 1.4 billion. Greater local demand needs to be created and new uses found for the growing volumes of timber. The use of wood-based fuels in energy production has been increasing throughout the 2000s. Improving the competitiveness and profitability of forestry in the special northern conditions while at the same time giving due consideration to other forms of land use poses a major challenge to the national forestry policy.

In exploiting the forest resources, the various uses of forests and the reconciliation of the conflicting needs must be taken into account. The alternative uses of forests are only highlighted in northern regions. The forest environment offers opportunities for a range of

activities from game hunting and picking berries and mushrooms to extensive tourism. Lapland's annual berry harvest is estimated at 350 million kilograms. Nature conservation areas and the outdoor and recreation services organised by the State increase the appeal of nature tourism in the region. Worldwide, nature-based tourism is generally regarded as the fastest growing sector in the tourist industry.

4.5 Mining industry

Because of its vulnerability, the Arctic environment poses a number of requirements as to how to manage the overall process of utilising natural resources. For example, it is not enough that efforts are made to handle oil drilling in a way that is sustainable from the environmental point of view. The same must also apply to mineral or oil exploration and discovery, transports to reprocessing facilities and landscaping upon the termination of operations.

Mining in Arctic areas is increasing in Finland and the neighbouring countries, and Finland is seeking to attract foreign investments in this sector. Finland participates in the work of *NordMin*, a Nordic network of expertise for a sustainable mining and mineral industry in the Nordic region. Similarly, increasing attention is being paid to environmental issues in the projects launched by the Russian mining industry, a direction that also offers major business opportunities for Finnish operators. Moreover, there is a keen interest in Greenland's mineral resources. The growing mining industry in the Arctic region creates a need for a larger ice-breaker fleet and its operation. With the changing climate, expertise in mine water management and geotechnological engineering will increase in importance.

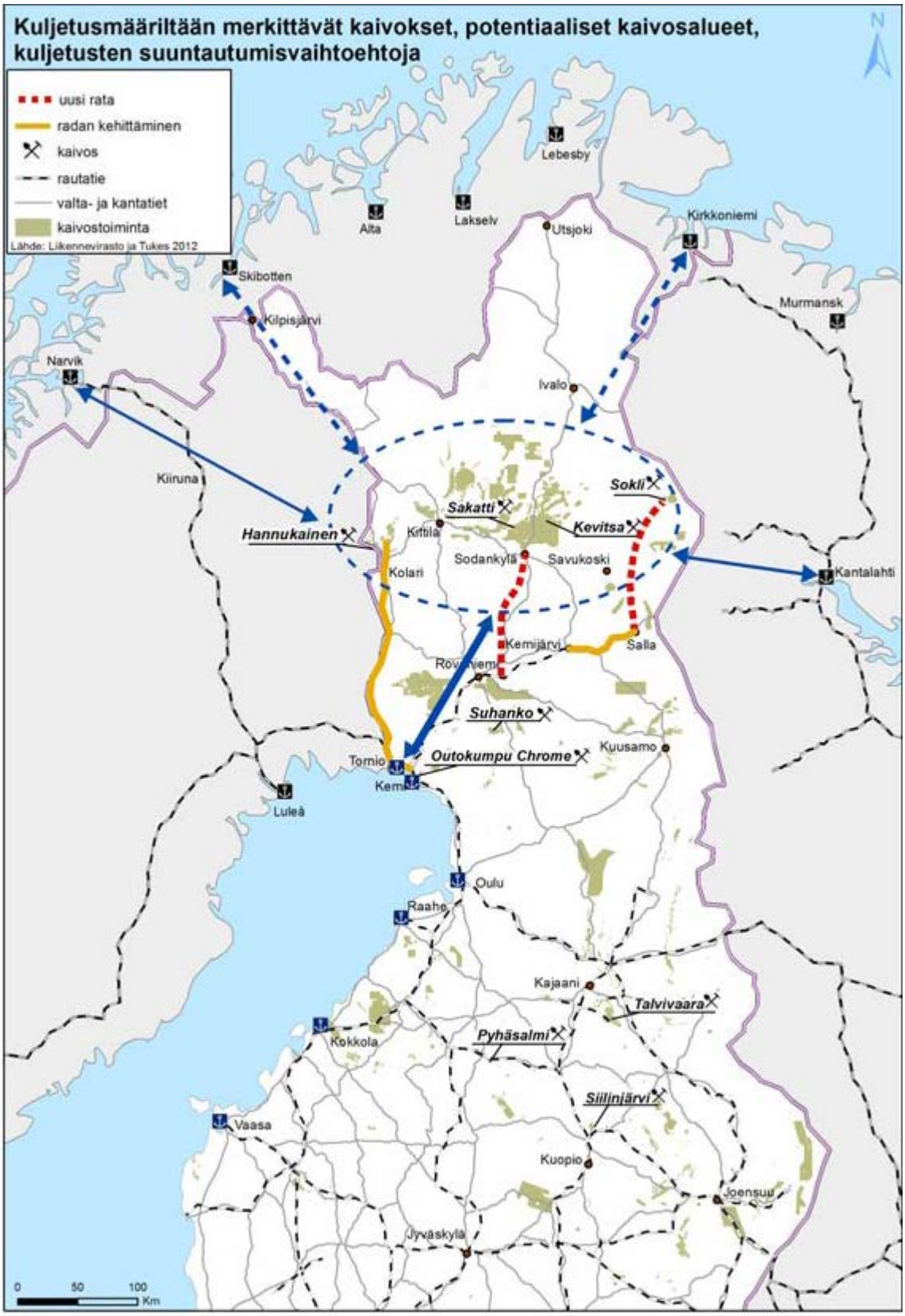
Finland's ambition is to become a global pioneer in an eco-efficient mineral industry by 2020, an objective supported by the 2011–2016 Green Mining Programme launched by Tekes, the Finnish Funding Agency for Technology and Innovation. Finland, for its part, can contribute to eco-efficient mining in Arctic projects by advocating the practices outlined in the guide *Best Environmental Practices in Metal Mining Operations*. Verification of eco-efficiency calls for long-term research and monitoring of the environmental impacts of mining.

For Finland, it is vital to ensure the availability of labour and the adequacy of the resources and competence of the regulatory authorities. It is estimated that up to 5,000 new jobs will be created in the mining industry over the next few years. One mining job creates indirectly two to three other jobs.[4] Forecasts for the mining industry involve a number of uncertainties related to the world economy, environment and the demand for and the price of minerals, as a result of which demand for labour may fall short of expectations.

One of the biggest challenges to the growth of the mining and minerals industry is access to qualified labour.
For training and research purposes, the cluster covers the entire value chain from mines to metals, materials recycling, technology exports, the construction rock industry, technology industry and the service sector. Mining expertise is developed through the joint efforts of the universities located in northern Finland.

[4] Suomen kaivosteollisuuden tilannekatsaus vuonna 2012 (Overview of the Finnish Mining Industry 2012), TEM Raportteja 23/2012.

A report entitled *The Transport Needs of the Mining Industry* (Finnish Transport Agency, 2013) presents the views of companies and the authorities regarding the transport needs of the mining industry in northern Finland and the preferred short- and long-term transport routes with due regard to the transport and travel needs of other businesses.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4.6 Clean technology (Cleantech)

The new developments in the Arctic region offer major opportunities for Finnish cleantech expertise and companies engaged in this line of business. With the increasing economic activity, growing industry and rising population, the environment is subjected to greater strains and thus utilities, such as water processing technology - an area that Finland possesses solid expertise in - need to be developed.

Among others, Russia is paying increasing attention to resource efficiency and the improvement of energy efficiency in industry and society at large. Finnish expertise is of the highest standard and widely recognised in Russia; for example, Finnish technologies permit sustainable mining in the Arctic environment.

Finnish environmental technology is suitable for cleaning up the environment in the Arctic and ensuring the efficiency of production facilities and a low level of emissions. This provides a direct link to improvements in cost-efficiency.

Oil spills represent the greatest risks associated with Arctic shipping and oil drilling. When it comes to mechanical oil recovery in ice conditions, Finnish companies are at the leading edge of technology. This expertise relate both to research and technology.

4.7 Tourism

The changing of seasons, untouched wilderness, cultural contrast and other unique features offer great potential for expanding tourism in northern Finland. Other factors contributing to growth include the uncertainty of snow in central Europe and the proximity of Russia.

Many of the holiday resorts in northern Finland have evolved into hubs of versatile activities. Additionally, tourism ensures a wider range of better services for the local population and helps maintain the basic infrastructure which, in turn, enables the development of other businesses. Tourism will remain a labour-intensive field of activity in which jobs cannot be relocated.

The infrastructure, level of service, international orientation as well as tourism research and education are of the highest standard in Finnish Lapland. Competitiveness in Arctic tourism is based on the utilisation and sustainable use of the natural environment; cooperation and mutual trust between operators; a spirit of locality and appreciation of local culture; security; efficient risk management; and forward-looking and innovative product development and service design. This expertise can be utilised and developed as other forms of tourism increase in the Arctic.

Tourism can draw upon the unspoilt landscapes, peace and quite, well-managed game and wildlife stocks and unique cultural features. To a certain extent, the interests of the various activities –mining, forestry and investments in tourism – are contradictory. A balanced evolution of regional livelihoods calls for sustainable cooperation between the individual fields and a close control of the environmental and social repercussions. All livelihoods need to be perceived as a whole in relation to one another.

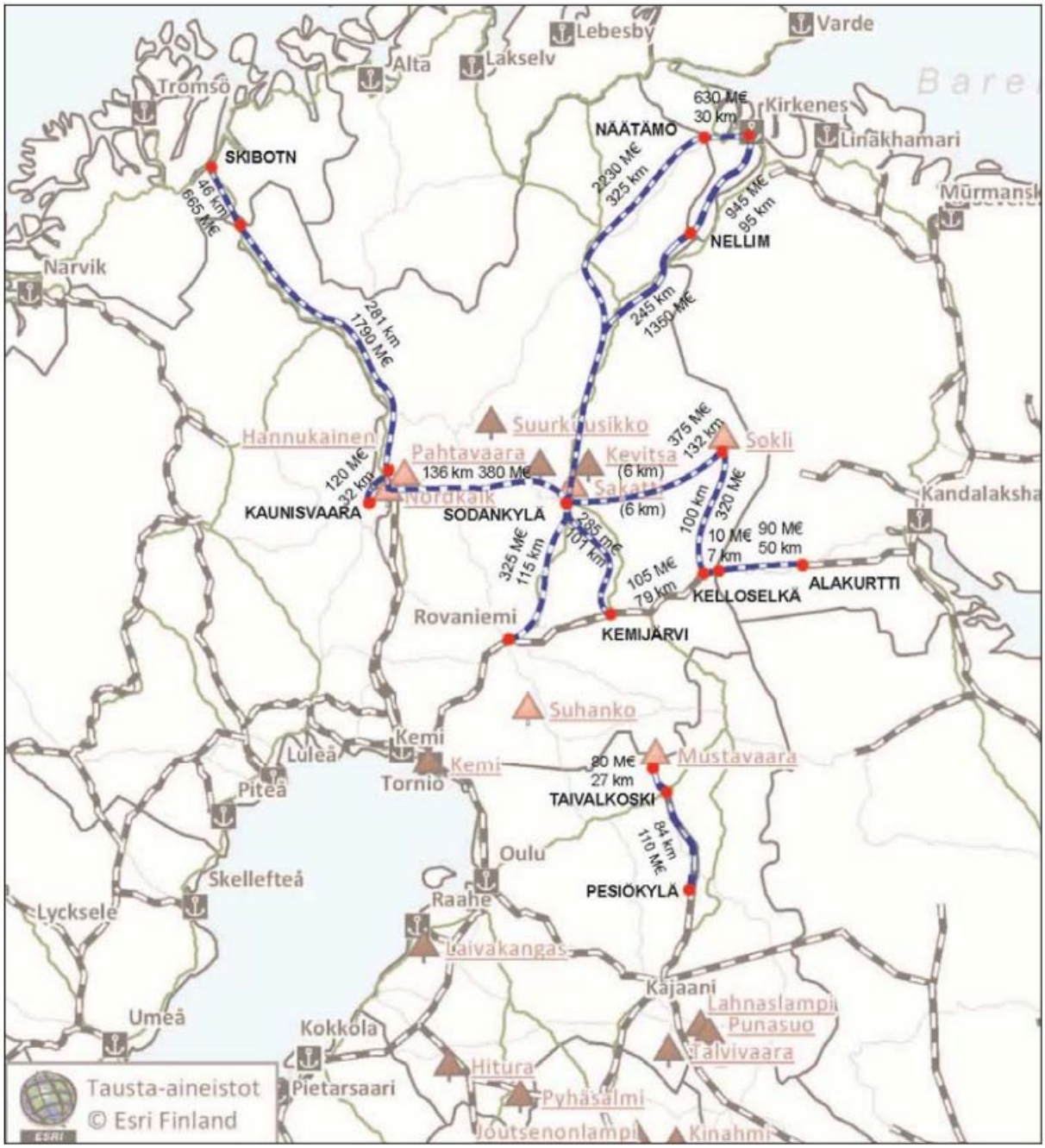
Globally, nature-based tourism is growing at a brisk pace. The growth in Arctic tourism is being driven by access to qualified labour, forward-looking education and innovative development efforts across the interfaces of the individual sectors. At the same time, long distances pose a specific challenge. Security and risk management will increase in importance, while efficient air,

road and rail travel services will be indispensable to future growth in international tourism. To make it possible for tourism to grow and transform in a responsible manner, steps must be taken to ensure the availability of labour, a high level of skills and competence, and a sufficient resource base.

4.8 Traffic and transport systems

Efficient transport services and communications are crucial to the realisation of the business potential offered by Finland's northern areas.

With the expansion of the mining and the oil and gas industries in the Barents region, there will be a growing need to develop transportation and logistics which should be viewed as a whole. The cost of investments will be high and should be made in stages in response to the emerging needs. The Finnish Transport Agency has prepared a report on the transport needs of northern Finland, which serves as a basis for near-term measures. Examples of foreseen developments include the Arctic Ocean railway line and other rail connections to the Arctic Ocean, Sweden, Norway and Russia. To be able to prioritise the various options, it is first necessary to arrive at an understanding with the neighbouring countries and then find new forms of financing for the projects. Steps are being taken to explore the possibility of securing financing for the construction of Arctic transport and communications services from the *Connecting Europe Facility*. The evolving transport needs will be re-evaluated during the preparation of the Transport Strategy for the Barents Region. Necessary steps should then be taken to provide sufficient transportation capacity. Additionally, the Northern Dimension Partnership on Transport and Logistics is emerging as a central tool in the efforts to develop transport services in the north.



The location and estimated costs of the (optional) new railway lines. Source: The Transport Needs of the Mining Industry, Finnish Transport Agency.

Border crossing points are an important part of a smooth flow of traffic and transports in the Arctic region. At present, the crossing points on Finland's eastern border are working at capacity and are unable to respond to growing traffic volumes. Potential visa-free travel between the EU and Russia, the intensifying economic activity in the Arctic and the growing population will inevitably increase the volume of cross-border traffic. The border crossing points must be taken into account in the planning and implementation of transport facility projects. Funding for this purpose may be requested from ENI CBC Programmes, among other sources.

The foreseen growth in marine transportation in the Arctic calls for enhanced safety and environmental regulation in order to prevent accidents and environmental damage, and raise the level of preparedness in the event of accidents.

In 2002, the International Maritime Organization IMO approved instructions for vessels operating in ice-covered Arctic seas. Aside from these recommendations, the IMO is currently preparing a Polar Code which is intended to be compulsory. The provisions of the Code will be related to maritime safety, the protection of the marine environment and crew training. In the review of the Polar Code, Finland has played an active role in environmental issues and the formulation of the rules for the ice-classification of vessels.

Because of the inadequate infrastructure and long distances in the region, getting the required rescue equipment to the scene of an accident or supplies in emergency situations are a major challenge to the rescue services

4.9 Data communications and digital services

In addition to efficient transport services, reliable, high-capacity information networks and digital services are instrumental to boosting economic activity in the north and improving competitiveness in the country as a whole. The adoption and utilisation of smart solutions drawing upon advanced communications technology need to be promoted in all sectors.

Information and communications technology as well as related services and applications have been developing at a fast pace. Near-term opportunities and challenges will be closely related to the development and broad-based adoption of 'cloud services', advances in object-to-object communication and the utilisation of big data. The market for cloud services is valued at EUR 1 billion annually and is expected to grow substantially.

Finland is seeking to establish itself as a new major centre for the cloud industry. Companies engaged in this line of business need an interesting and incentive operating environment in order to develop the services. For example, leading global cloud industry operators prefer countries with high-capacity communications connections backed-up by several optional routes when selecting sites for their computer centres. Moreover, the weather conditions in the north are perfect for computer centres requiring efficient cooling. Exploiting northern connections greatly improves Finland’s competitive position as a site for information-intensive industry as the connections can be built in the direction of the North-East Passage linking Europe and Asia.

Satellite-based communications systems are necessary for the Arctic seas, for example to transmit weather and maritime safety services to sea-going vessels.

5. Environment and stability

5.1 The Arctic environment

The Arctic environment is highly exceptional. It is extremely sensitive, regenerates slowly and its ecosystems and species have adapted to extreme weather conditions and short growing periods. This means that human action – when detrimental in its impact either globally or locally – may result in permanent changes in the Arctic region.

Globally speaking, the preservation of the Arctic environment is of intrinsic value. For this reason, Finland's Arctic policy focuses on understanding the effects of climate change and transboundary pollutants; the sustainable use of Arctic natural resources; the identification of the limitations imposed by the environment; and environmental protection in all areas of activity. It lies in the best interest of Finland and the entire international community to preserve the Arctic land and sea areas, and to promote ecologically sustainable economic and social development, a principle that Finland upholds.

In the Arctic, all economic and other activities must be based on the identification of the limitations imposed by the environment, the recognition of and preparedness for the risks, and the prevention of pollution. For Finland’s part, this calls for common guidelines, a solid knowledge base and competence, close cooperation between the various administrative sectors and the promotion of best practices.

Environmental risks cannot be reduced unless they are identified and managed using the best available techniques and procedures consistent with the conditions at hand and in compliance with the precautionary principle. Foreseeing risks and minimising detrimental effects calls for a careful assessment of environmental and socio-economic implications, community and area planning, inter-disciplinary research projects and a more rigorous enforcement of international conventions. Finland takes part in the evaluation and efficient enforcement of the existing legislation and guidelines, and plays an active part in shaping supplementary regulations.

An ecosystem-based approach makes it possible to evaluate the impact of the use of natural resources and the effects of operations from a wider perspective. By doing so, it is possible to consider the reciprocal impacts of the economic activities and their combined effect on the environment. The use of natural resources requires public acceptance and responsibility that can be generated through open dialogue and participation by the people living in the affected areas.

The significance of the natural environment in the efforts to preserve indigenous cultures, living conditions, traditional livelihoods and languages must be considered in all operations causing changes to the environment.

The global climate change has serious implications for the environment and living conditions across the world. In the Arctic, the effects of climate change are felt quickly and tangibly, for example in the extent of sea ice and glaciers. In September 2012, the extent of the Arctic sea ice reached an all-time low since the start of satellite monitoring. Melting ice, snow and permafrost affects the ecosystem - some habitats or species may even be lost forever. The changes will also affect people's activities, livelihoods and welfare. Elevated carbon dioxide levels in the atmosphere are already causing acidification of the seas, which threatens their ecological balance and ability to buffer climate change.

Normally, the Arctic region cools the Earth’s climate; now, however, the melting Polar ice and permafrost are accelerating the global climate change. Other factors are at work at the same time such as the changes in the snow cover of the tundra and the climate pollutants that make the snow darker. Arctic countries must shoulder their responsibility for reducing emissions of greenhouse gases and short-lived climate pollutants.

While steps need to be taken to adapt to the reality of climate change, this will also open up new opportunities in other areas of life. Finland's adaptation policy needs to focus on identifying and assessing both the opportunities and the risks associated with the change. Aid must be provided to support actions that facilitate adaptation by livelihoods based on renewable natural resources; further, the necessary prerequisites for the use and management of water resources must also be secured. At the same time, it is imperative to intensify the dialogue between governments and the scientific community regarding the numerous links to other global trends.

The Arctic region is not isolated from the rest of the world. Transboundary pollutants affect the environment far from their sources, which generally lie in the industrial zones at more southern latitudes. However, there are also local sources in the Arctic – mines and metals production

sites, community waste and wastewaters, and military operations – that pollute the environment along with the problems caused by radioactivity.

Several Arctic Councils' working groups have produced a wealth of pertinent regional data on these developments, which have also found global application. A prerequisite for sound reporting is reliable, regionally representative and comparable measurements and monitoring data. The Council's topical reports and recommendations are based on research findings that need to be more effectively introduced both into the global debate and national decision making.

Arctic biodiversity and its protection are of global value and significance. About 21,000 species adapted to cold conditions depend on the preservation of Arctic ecosystems for their survival, more than half of the world's wader population among them. Most endangered are Arctic migrant birds as millions of them representing nearly 300 species return to the Arctic each year to breed.

Well-functioning ecosystems are invaluable to the local population as well – over ten per cent of the world's total fish catch, for example, is from the Arctic. Preservation of the Arctic's natural environment is crucial to the communities of indigenous peoples whose traditional livelihoods depend on biodiversity.

To maintain and secure the diversity of species, it must be possible to foresee the developments jeopardising biodiversity. Apart from climate change, biodiversity is threatened by the non-sustainable exploitation of natural environments. Ultimately, it leads to the decline and fragmentation of natural habitats and a fall in the number of species depending on such environs for survival. Further development of the network of nature conservation areas in the region is a tangible way of improving the protection of the environment and clarifying the framework for economic activity. Sensitive and valuable areas must be urgently identified and analysed in order to supplement the network of conservation areas.

5.2 Stability of the Arctic Region

The security and stability of the operating environment is of great importance in the efforts to develop the economy of the Arctic region. A secure and stable living environment is also instrumental in improving the welfare of the local populations. The dialogue on the Arctic security policy is being conducted at several levels with the aim of establishing generally accepted guidelines to guarantee advancement, stability and security in the region.

In Finland, preparedness is based on the concept of overall security, which refers to securing the vital functions of society through close cooperation between the authorities, business and industry, NGOs and citizens.[5] In the context of this cooperation and the coordination of duties, aspects such as monitoring changes, analyses, resources, preparedness and exercises are highlighted. Another characteristic essential to overall security is the coverage of government networks. For example, access to help and assistance within a reasonable period of time must be secured in northern Finland also in the future. The Finnish model of overall security includes elements that may also be applicable to Arctic cooperation when developed on a broader basis.

[5] In Finland, preparedness is based on the concept of overall security which refers to securing the vital functions of society through close cooperation between the authorities, business and industry, NGOs and citizens.5

Coastal States on the Arctic Ocean have both upgraded their maritime surveillance and military capabilities as well as the frequency of their war games and exercises in the region. Military capabilities and the capacity for action of other security authorities play an important part in supporting other agencies in duties such as search and rescue operations and the mitigation of the effects of potential natural catastrophes and environmental damage. A military conflict in the Arctic is deemed improbable – the Arctic States have declared that any disputes will be settled peacefully in accordance with international law.

Finland should keenly monitor the security developments in the Arctic. Due account must be taken of the specific features of the region in the assessment of the extensive and increasingly multidimensional security threats. Sound preparedness calls for a comprehensive approach and smooth cooperation both at the national and international levels. One area conducive to security in the region is the enhancement of situation awareness among the Arctic countries and authorities. Situation awareness is of special importance to preparedness and inter-agency cooperation.

Considering the low-temperature expertise of the various branches of the defence forces and the materiel suited for northern conditions, Finland's military capabilities are deemed to meet the requirements imposed by the Arctic environment. Additionally, Finland has extensive areas suitable for Arctic military training and exercises in Rovajärvi, Sodankylä and Kajaani as well as in sea areas on the Quark, the Gulf of Bothnia and Gulf of Finland. Additionally, it possesses first-hand experience from military aviation in Arctic conditions. Finland has offered its Arctic exercise and training services to its international partners, which also contributes to its capacity for defence cooperation. It is also important for the defence administration to participate in exercises enhancing the capabilities for inter-agency cooperation, such as the Barents Rescue exercises.

Thorvald Stoltenberg's report (2009) on Nordic foreign and security policy cooperation also discusses forms of collaboration suitable for the Arctic. One of the priorities specified for Nordefcon, the Nordic Defence Cooperation established in 2009, is to intensify cooperation in order to enhance its capabilities. It covers Arctic cooperation and expertise, prime examples of which are Nordic cross-border air force exercises and Finland's and Sweden's participation in the control of Iceland's airspace together with Norway.

When efforts are made to develop cooperation on the Arctic seas, use can also be made of the best practices developed in the course of sea surveillance cooperation. Sea surveillance cooperation on the Baltic Sea is highly advanced even by international standards. Finland is closely involved in preparing the EU's integrated maritime policy and developing the EU-wide system for the exchange of maritime information. Enhancing maritime situation awareness is also one of the priorities of the Arctic Security Forces Roundtable, which represents the armed forces and maritime safety agencies of the Arctic countries (including the UK, the Netherlands and Germany).

5.3 Internal security

Arguably, several models for maintaining internal security already existing in many areas could also be applied to the Arctic region. Making full use of this model is important in the context of Arctic cooperation in order to avoid a duplication of efforts. Similarly, enhancing cooperation between the authorities in the region and internationally is central to the assessment and prevention of security threats. Inter-agency dialogue should be intensified in order to exchange

experiences and best practices as well as to identify flaws, synergies and areas of useful cooperation. Moreover, it is important to identify the expertise possessed by other Arctic countries and make use of it in assessing the needs and potential future threats pertaining to the region.

As far as rescue services are concerned, various forms of efficient cooperation and practical operational models already exist in northern Europe. These include the cooperation based on the Nordred and Barents Euro-Arctic agreements on rescue services, under which the Barents Rescue exercises are held every two years. Additionally, the Arctic Council's EPPR[6] working group has prepared agreements on air and sea rescue as well as on oil recovery services. Effective as of 2013, the agreement on air and sea rescue cooperation in the Arctic region requires Finland to allocate funding to rescue resources north of the Polar Circle and also to international rescue cooperation.

Moreover, Finland possesses a wealth of expertise on international rescue operations and the management of such operations that could be exported to other Arctic areas. A prime example is the development of the EU-funded Cold Conditions Module intended for rescue operations in extreme conditions.

While the cooperation carried out within the framework of the Council of the Baltic Sea States[7] does not address rescue operations, it is instrumental in achieving shared objectives, implementing joint projects and assessing the risks all the parties are exposed to. These cooperation models can be further developed for application in the Arctic region. Among the best Baltic Sea practices suited for such exportation is Coastnet, a government communications network primarily intended for border authorities but can also be used for non-urgent sea rescue operations and the prevention of environmental damage. This cooperation model for border and coastal guards has been proposed as a model for several governmental Coast Guard fora, including the Black Sea and North Pacific. Therefore, steps should be taken to explore the possibility of setting up a Coast Guard cooperation forum for the Arctic region, a project in which Finland could actively participate. Cooperation between national coast guards, in particular, could combine a number of security and law enforcement components while securing and promoting Arctic actions on a broad front.

While the Arctic region is of no special concern in terms of crime prevention for the time being, it is important to watch the developments in the area and give due consideration to potential future security threats. At the national level, Finland offers solid experience from inter-Nordic cooperation. Finland, Sweden and Norway are engaged in close local cooperation in crime prevention in the Circumpolar Region. For example, the Nordic PTN[8] crime prevention framework provides readily employable mechanisms for preparing threat scenarios and cooperating in crime prevention. The Task Force on Organised Crime in the Baltic Sea Region (BSTF)[9] has created a model for inter-disciplinary crime prevention that could possibly be applied in the Arctic as well.

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[6] EPPR6 Emergency Prevention, Preparedness and Response .

[7] Council of the Baltic Sea States, CBSS

[8] PNT Polis och Tull i Norden, Nordic cooperation in crime prevention

[9] BSTF9 the Task Force on Organised Crime in the Baltic Sea Region.

6. International cooperation in the Arctic

6.1 Finland's position in the Arctic

One of Finland's key objectives is to bolster its position as an Arctic country and to reinforce international Arctic cooperation. Finland is actively involved in multilateral cooperation at the global and regional levels to achieve its own Arctic goals and to pre-empt global threats.

The fundamental components of Arctic debate are cooperation, mutual dependence, trust and transparency. Finland's thinking and action is built upon cooperation outlined in international conventions. It is advisable to review the adequacy of the existing conventions system regarding the region. Finland plays an active role in drafting supplementary regulations. While the sovereignty of the States must be respected, it should not discourage genuine recognition of mutual dependencies. All efforts should be made to build up mutual trust and the most efficient tool in achieving this goal is transparency.

As a result of the increasing global interest in the Arctic Region, the role of international law in the area is growing. Most importantly, pending issues and any disputes need to be settled in accordance with international law using various dispute settlement procedures where necessary. One of Finland's objectives regarding the Arctic region is consistent regulation. At present, the contract system is highly fragmented and may thus lead to ambiguities regarding liability for damages.

The UN Convention on the Law of the Seas (UNCLOS) regulates all the resources and uses of the seas, and seeks to conciliate the sometimes conflicting interests. While it seldom spells out any detailed regulations, it sets out the general principles and provides a framework for supplementary regulation at the global, regional or national level based on the division of legal competencies. If necessary, the enforcement of UNCLOS can be supplemented by sector-based regulation with due regard to specific characteristics of the Arctic region concerning the use of living natural resources, environmental protection or maritime safety, for instance. As foreseen in the resolutions adopted by the UN Rio+20 Conference, the UNCLOS is to be provided with additional tools for protecting biodiversity. The level of necessary regulation needs to be assessed on a case-by-case basis.

Of special relevance to the Arctic region in this respect are the Commission on the Limits of the Continental Shelf (CLCS) and the International Seabed Authority (ISA), both organisations formed under UNCLOS.

When Arctic issues are evaluated from a local perspective, due consideration should always be given to global implications. The reference framework for sustainable development is universal. Arctic cooperation may serve as an example of how to create the necessary preconditions for sustainable development within the UN and other global contexts.

6.2 International cooperation in the Arctic

The most important forum for addressing Arctic issues is the Arctic Council formed by eight Arctic countries where the Arctic indigenous peoples are also represented on an equal basis. As Arctic issues have global implications, such as environmental change and the opening of new sea routes, the Council should duly recognise its global role and responsibility. It makes sense for the Council to approach and establish contacts with operators outside the Arctic region. In principle, Finland is in favour of admitting new observers into the Council provided they are committed to the attainment of its goals. Such new observers could offer the Council sorely needed additional resources and new proven practices useful in multilateral cooperation.

Finland has been actively involved in the efforts to bolster the Arctic Council. Institutionally, the Council's position has been strengthened by appointing a permanent secretariat; drafting binding international conventions between the Council Member States; producing research papers of major importance; and extending the Council's agenda from environmental aspects to issues related to policies, the economy and international law. Finland supports the plan to establish the Council as an international treaty-based organisation.

The recommendations given by the Arctic Council provide a sound basis for political decision making. Finland is open to expanding the Council's operations to new sectors of value-adding activities. Additionally, the political weight of the Council could be augmented by holding Arctic

Summits from time to time to outline Arctic policies from a wider perspective. If necessary, observers could be invited to these Summits.

One of the most important tasks of the Arctic Council is to monitor and assess the state of the environment in the region and to alert to any changes. While extremely important work is being carried out by the Arctic Council, many of the reports and other findings produced by the working groups fail to attract the attention of the general public. For this reason, it is important to increase the media visibility of the Council's efforts. Moreover, its recommendations and regional climate change assessments should be utilised more efficiently both in regional decision making and in the preparations for the challenges posed by climate change.

The Barents Euro-Arctic Council and the Barents Regional Council introduce a regional perspective to the more general Arctic policies. The added value provided by these councils consists of the ability to bring together the local operators and encourage them to make a true commitment to the attainment of the common objectives. The ultimate objective of Barents cooperation is to intensify cooperation between Russia and the Nordic countries in order to secure the stability and prosperity of the northernmost regions of Europe. On the practical level, Barents cooperation is carried out by sector-specific working groups involving a range of experts from the ministerial and local levels. The Barents Regional Council is often referred to as the 'engine' of the Barents Euro-Arctic Council, sustained by local expertise and traditions.

The Northern Dimension and related partnerships offer a forum for addressing collaborative issues regarding the northern parts of Europe and creating a forum for hands-on cooperation.

Based on an equal partnership between the EU, Russia, Norway and Iceland, the Northern Dimension remains the only forum for a coordinated formulation of EU policies. It focuses on the Baltic and Barents Sea regions.

The work carried out within the framework of the Northern Dimension's Partnerships involves various forms of cooperation. A tangible example of cooperation in the Arctic region is provided by the nuclear safety projects implemented in the Arctic. Water and wastewater projects are also carried out under the partnership programmes in Arkhangelsk, Murmansk and Petroskoi. The transport and logistics partnerships are geared to accelerate projects related to northern transport routes and to serve as a forum for addressing transport and traffic issues in the Baltic region and northern Europe. This partnership may prove to be a major instrument in promoting cooperation in the transport sector, especially in relation to mining in the Barents region and the sea carriage prospects provided by the North-East Passage. A fund was established for the partnership in 2012 to provide financing for preparations. Additionally, the social and health and culture partnerships have emerged as useful fora for cooperation. For one thing, the Partnership in Public Health and Social Well-being has made a great contribution towards limiting epidemics (HIV, TB) and promoting healthy lifestyles. Finland underlines the importance of synergy and coherence between the individual actors.

Finland takes active part in Nordic cooperation in order to promote security in the region on a broad front. The Nordic Council of Ministers has defined its own priorities in respect of cooperation in the region in the Arctic Cooperation Programme, under which funding has been provided for a total of 25 projects for the period 2012 to 2014. The programme creates a basis for cooperation between other key multi-partner actors, principally the Arctic Council and the Barents Euro-Arctic Council. As it is, the efforts of the Council of Ministers should be perceived as serving a supportive role. The Nordic Council of Ministers has an observer status in the Arctic Council.

Other international operators in the Arctic region include:

- United Nations (UN) and its agencies (maritime law, human rights, sustainable development, research, education, climate change and the status of indigenous peoples)
- UN Convention on Biological Diversity (CBD)
- UN Environmental Programme
- International Maritime Organization (IMO)
- World Meteorological Organization (WMO)
- International Union for the Conservation of Nature (IUCN)

6.3. Bilateral Arctic partnerships

Arctic cooperation can be complemented by bilateral Arctic partnerships; for instance, Russia and Finland are engaged in an Arctic partnership launched by the respective Presidents in 2010 to intensify cooperation between the countries' Arctic operators. The activities carried out within the framework of this partnership are monitored by way of bilateral seminars, for example. Closer cooperation between Finnish and Russian parties interested in financing innovations may greatly facilitate the launching of joint private sector projects to exploit the business opportunities offered by the Arctic region.

The important commercial aspects of Arctic partnerships are pursued through the *Team Finland*network. The efforts must be pragmatic and based on the actual needs of companies. One of the challenges in this context is the coordination of the activities of Finnish actors.

New, bilateral Arctic partnerships can complement Arctic cooperation and increase awareness of Finnish Arctic expertise.

6.4. EU's role in the Arctic

The European Union continues to develop its Arctic policy. An increasingly active Arctic operator, the EU has three Arctic countries (Finland, Sweden and Denmark) as its Member States. With Iceland's potential accession to the Union, this number is expected to increase to four. Both Iceland and Norway belong to the European Economic Area.

For the first time, the EU's Arctic policy was outlined more comprehensively in the Arctic Communication of 2008. Since then, the EU's Arctic policy has evolved considerably. Underlying the current policy are the actual Communication and the Council Conclusions issued in 2008 and 2009, in which the Commission was requested to give a follow-up report on the Arctic policy no later than June 2011. This was accomplished in the form of an even more extensive document in June 2012 when the Commission and the High Representative of the Union for Foreign Affairs and Security Policy issued a joint Communication on Arctic policy. Also, the European Parliament issued its own report on the direction of the EU's Arctic policy in 2011.

The Communication underlines the global importance of the Arctic region specifically in terms of climate change and environmental issues. Rapid changes are significantly affecting the region's ecosystem and the living conditions of the local populations. At the same time, the shrinking ice cover and technological advances create new opportunities for economic activities in the region. The EU stresses the importance of strict compliance with stringent environmental standards in all new activities to avoid damage to this sensitive region.

In the Communication, the premises for the EU's Arctic policy are crystallised in the concepts of 'knowledge, responsibility, engagement'. To further develop the EU's policy towards the Arctic, proposals are made to:

- support research and channel knowledge to address the challenges of environmental and climate changes in the Arctic
- act responsibly to contribute to ensuring that economic development in the Arctic is based on the sustainable use of resources and environmental expertise; and
- intensify the EU's constructive engagement and dialogue with Arctic States, indigenous peoples and other partners.

For the first time, a specific Annex to the Communication listed the all the EU operations related to the Arctic region. It is hoped that this will increase coherence in the EU's policy and its internal coordination.

The EU aims at developing cooperation within the region. To this end, it seeks to promote an inclusive dialogue with all Arctic actors. As indicated in the Communication, the EU wishes to engage in a closer dialogue with the members of the Arctic Councils (states and indigenous peoples) to demonstrate its commitment to cooperation in the Arctic. The EU Commission is a

member of the Barents Euro-Arctic Council and also participates in regional cooperation through the Northern Dimension.

For Finland, it is important to support the formulation of the EU's policy towards the Arctic and the reinforcement of its role in the region. Top priority needs to be ascribed to the efforts to influence the Council Conclusions to be issued in response to the Communication. In EU politics, it is important to be able to shape the priorities of the EU's R&D programmes related to the Arctic. For Finland's part, it is also important to wield its influence in the selection of the future projects of the European Space Agency (ESA) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) to ensure that Arctic services and monitoring are singled out as priorities.

One of the objectives set out by Prime Minister Jyrki Katainen's Government Programme (2011) is to have the contemplated EU Arctic Information Centre established in conjunction with the Arctic Centre of the University of Lapland. Preparations to set up the Arctic Information Centre were commenced by the Commission at the beginning of 2013. The goal is that the preparations will lead to the establishment of a permanent EU Arctic Information Centre in Rovaniemi, Finland. The Arctic Centre of the University of Lapland is the only multi-disciplinary Arctic research institute in the Arctic region within the EU generating scientific data on the area. It is proposed that the EU Arctic Information Centre be established in the form of a network involving 19 European institutions engaged in Arctic research and communications. The Arctic Information Centre would increase Finland's visibility in the international scene as an Arctic expert.

III Objectives and actions for attaining them

Objectives and actions will be implemented within the framework of the central government spending limits and the central government budgets insofar as they are implemented with central government funding. It will not be possible to implement all objectives and actions during the electoral period 2011–2015. It is a question of a series of actions to be taken over a longer period of time and specifically prioritised in connection with future spending limits decisions and central government budgets, and revised to match other developments.

Although only ministries are named as the responsible parties in the following list, other parties - local authorities, businesses, interest groups and NGOs - will be involved in implementing these measures as applicable.

Responsibility for the follow-up on the objectives and performance in attaining the objectives rests with the network of responsible officials at the relevant ministries. The monitoring and implementation of the strategy is overseen by the Arctic Working Group.

Objectives and actions

The responsible parties are in italics, the first-mentioned being the principal responsible party.

1. Vision for Arctic Finland

2. Finland's Arctic population

2.1 Objectives related to social sustainability and working conditions

- Secure sufficient resources for the health and well-being of the population.
- Improve the working conditions and promote the wellness at work of all workers in the challenging Arctic environment.
- Ensure the availability of labour, particularly by promoting worker mobility.

Action:

- Take social sustainability into account in impact assessments. ***(Ministry of Social Affairs and Health, Ministry of Employment and the Economy, Ministry of the Environment, Ministry of Agriculture and Forestry)***
- Secure the necessary preconditions for the health and well-being of the population in northern Finland through the re-allocation of existing resources. ***(Ministry of Social Affairs and Health, Ministry of Employment and the Economy, Ministry of the Environment, Ministry of Education and Culture)***
- Contribute to the studies and impact assessments of changes in living conditions in the Arctic region, including urbanisation. ***(Ministry of Social Affairs and Health, Ministry of Education and Culture, Ministry of the Environment)***
- Intensify Nordic cooperation to promote wellness at work and ensure the continued functioning of the Northern Dimension Partnership in Public Health and Social Well-being and the Baltic Sea Network on Occupational Safety and Health. ***(Ministry of Social Affairs and Health)***
- Intensify cooperation and the exchange of information between authorities in the Arctic countries to promote worker mobility. ***(Ministry of Employment and the Economy)***
- Ensure the availability of qualified labour through the joint marketing of jobs in the Arctic region as part of the Team Finland concept. ***(Ministry of Employment and the Economy, Prime Minister's Office)***

2.2 Objectives related to the indigenous peoples of the Arctic and the Saami population in Finland:

- Ensure that indigenous peoples can participate in the debate and decision making in matters affecting their status as indigenous peoples.
- Expand support for Saami language and culture, and improve the availability of services in the Saami language.
- Ratify ILO Convention No. 169 on Indigenous and Tribal Peoples.

Action:

- Promote the implementation of the Saami language revival programme to train Saami-speaking professionals and to support the Saami language and culture. ***(Ministry of Education and Culture)***
- Ensure that indigenous peoples can participate in the debate and decision making in matters affecting their status as indigenous peoples. ***(Ministry of Justice, Ministry for Foreign Affairs, Ministry of Employment and the Economy, Ministry of Agriculture and Forestry, Ministry of the Environment)***

3. Education and research

Objectives related to Finnish Arctic expertise:

- Reinforce broad-based inter-disciplinary Arctic research by making efficient use of international networks.
- Maintain and develop Arctic expertise.
- Invest in education, training and research to strengthen Finland's position and appeal as a country with world-renowned international Arctic expertise.
- Take an active part in the comprehensive evaluation of changes in the Arctic region.

Action:

- Encourage universities and research institutions to publicise their Arctic research expertise and to invest in the development and leveraging of Arctic expertise and research in accordance with their respective strategies. Various Finnish and international funding sources should be drawn upon (including the Academy of Finland, Tekes, Structural Funds, the Nordic Council of Ministers and the EU). ***(Ministry of Education and Culture, Ministry of Employment and the Economy, Ministry of Social Affairs and Health, Ministry of the Environment, Ministry of Defence, Ministry of Transport and Communications)***
- Have the Academy of Finland launch an Arctic research programme. ***(Ministry of Education and Culture, Academy of Finland)***
- Strengthening Arctic expertise is included in the national programme for the next programme period of the EU Structural Funds and in some cross-border cooperation programmes. The tools and themes incorporated under the three pillars of the Eighth Research Framework Programme of the EU, Horizon 2020 (excellence in science, industrial leadership, societal challenges) may also be leveraged in the development of Arctic expertise (e.g. smart traffic, climate change, future technologies). ***(Ministry of Employment and the Economy, Ministry of Education and Culture)***
- Develop broad-based Arctic research transcending administrative boundaries by establishing shared research priorities and by launching joint research projects. ***(All ministries and the universities and research institutions in their administrative sectors)***
- Upgrade the TEKES research initiative 'The Arctic operating environment and its potential' into a research programme. ***(Ministry of Employment and the Economy)***
- Address changes in the business structure, labour needs and population trends in the region when establishing objectives for the provision of training – in the mining and tourism sectors, for instance – as part of the national foresighting efforts. ***(Ministry of Education and Culture, Ministry of Employment and the Economy)***

- Strengthen expertise in the Arctic region and international networking by universities in areas important to Finnish interests, for instance through the activities of the University of the Arctic (UArctic). ***(Ministry of Education and Culture, universities)***
- Make nationwide use of science communications and the exhibition activities of the Arctic Centre to improve the visibility of Finland's Arctic expertise and access to information on the Arctic and support the role of the Arctic Centre as a provider of multi-disciplinary research data on the Arctic region. ***(Ministry of Education and Culture, Ministry for Foreign Affairs, Ministry of Employment and the Economy, University of Lapland)***
- Take an active part in and contribute to research and evaluation of changes in the Arctic region being carried out by the Arctic Council and other expert bodies. ***(Universities, research institutes, Ministry of Education and Culture, Ministry of the Environment, Ministry of Employment and the Economy, Ministry of Social Affairs and Health, Ministry of Transport and Communications, Ministry of Defence, Ministry for Foreign Affairs, Academy of Finland)***

4. Finland's business operations in the Arctic

4.1 Arctic business opportunities

Objectives related to seizing business opportunities in the Arctic region:

- Create new potential and utilise the natural resources of the Arctic region for commercial purposes and engage in efforts to develop and create services and infrastructure to support the same with due regard to the principles of sustainable development.
- Assume an active role in the development of international legislation and regulations concerning the exploitation and development of the Arctic regions through the EU and bilateral agreements and international treaties (e.g. IMO).
- Steer economic activity in the region through uniform, predictable and rigorous regulation.
- Establish solutions supporting practices consistent with the environmental goals, the limitations imposed by the Arctic environment and sustainable development as a foundation for Finland's competitiveness and strength.
- Identify and manage the environmental risks associated with business operations.

Action:

- Implement international development projects (to be specifically determined) generating more information on business opportunities in the region and improve the competitiveness of enterprises and facilitate entry to the market. ***(Ministry of Employment and the Economy)***
- Assess the business potential of the Arctic region up to 2030. Said assessment should address investment plans as well as key projects and project packages in Finland's neighbouring areas. ***(Ministry of Employment and the Economy)***
- Allocate expert, regulatory and government resources to remove barriers to international trade, develop environmental impact assessments and maintain risk management capabilities while fostering smooth communications between the various parties involved. ***(Ministry of Employment and the Economy, Ministry of the Environment, Ministry of Agriculture and Forestry, Ministry for Foreign Affairs)***

- Encourage enterprises to operate in environmentally responsible ways. ***(Ministry of Employment and the Economy, Prime Minister's Office)***

Objectives related to economic utilisation:

- Identify emerging business opportunities and commercialise Arctic expertise.

Action:

- Establish Arctic expertise as one of the priorities in the Team Finland network, with a view to promoting internationalisation and corporate investments in Finland and making use of Arctic expertise as a component of Finland's national image. Market the Arctic expertise possessed by Finnish companies and development environments on a broad front through export promotion missions and direct marketing efforts (road shows) targeting international enterprises. ***(Ministry for Foreign Affairs, Ministry of Employment and the Economy, Prime Minister's Office)***
- Incorporate presentations of Arctic expertise and excursions to the Arctic in the visits to Finland by corporate delegations. ***(Ministry for Foreign Affairs, Ministry of Employment and the Economy)***
- Use the Team Finland foresighting services to be provided under the auspices of Tekes to produce, process and distribute foresighting data on market trends regarding changes in the operating environment and new business opportunities in the region for use by enterprises and Team Finland organisations. ***(Ministry of Employment and the Economy, Prime Minister's Office)***
- Implement a corporate development programme to create services and products through partnerships between top companies and SMEs as well as inter-SME partnerships to improve access to extensive international projects. ***(Ministry of Employment and the Economy)***
- Gather and compile information on Arctic projects being planned and the opportunities available to Finnish companies. ***(Ministry of Employment and the Economy, Ministry for Foreign Affairs)***
- Improve access to investment funding and develop public procurement (innovation-driven public and pre-commercial procurement projects) in order to establish reference projects in the Arctic region. Examples of this include influencing the terms and conditions for the availability of European Neighbourhood Instrument and Cross-Border Cooperation (ENI CBC) funding in Russia; developing products and services in the financing and insurance sector to provide improved support for business in the Arctic region; developing maritime insurance; and determining Finnvera's role in greater detail. ***(Ministry of Employment and the Economy)***
- Explore the possibility of establishing an Arctic Strategic Centre for Science, Technology and Innovation (SHOK) programme to support information exchange between the research and business community. This would be an inter-disciplinary and inter-sectoral programme. **(Ministry of Employment and the Economy, Ministry of Education and Culture, Tekes)**
- Make use of the tools of design and design thinking in translating Finnish expertise into new solutions. ***(Ministry of Employment and the Economy)***
- Promote the establishment of an Arctic design centre of excellence through the joint efforts of the City of Rovaniemi and the University of Lapland. ***(Ministry of Employment and the Economy, Ministry of Education and Culture)***

4.2 Energy

Objectives related to the energy sector:

- Seize the business opportunities generated by energy investments in the Arctic region.
- Promote the export of Finnish energy expertise and technology specifically developed for Arctic conditions.
- Focus on efforts to reduce the risk of oil spills and improve oil recovery capabilities in the context of international cooperation.
- Develop complementary regulations in accordance with the *Arctic Ocean Review* recommendation of the Arctic Council, etc.

Action:

- Establish solutions related to decentralised energy production (including geothermal energy) as a central theme of the corporate development programme in the efforts to develop the strategy for demonstration and promoting exports of Finnish expertise and technology. ***(Ministry of Employment and the Economy)***
- Market Finnish energy technology internationally, particularly in Russia. ***(Ministry of Employment and the Economy)***
- Launch a project to develop the energy supply expertise of Finnish population centres and cities to provide systems suitable for Arctic conditions. ***(Ministry of Employment and the Economy)***
- Promote the imposition of compulsory minimum requirements on oil drilling in the region. ***(Ministry of the Environment)***

4.3 Arctic maritime industry and shipping

Objective related to the Arctic maritime industry:

Objective:

- Continue to maintain Finland's position as a leading expert in the Arctic maritime industry and shipping and keep Finnish companies closely involved in development projects in Arctic sea areas.

Action:

- Launch a programme to boost national Arctic shipbuilding, offshore and winter navigation operations in order to identify and develop business opportunities in the north, and to build national and international value networks together with the other leading countries in the sector such as Norway, Canada, Sweden and Denmark. ***(Ministry of Employment and the Economy)***
- Expand the roles of the shipbuilding, oil and gas working groups of the Finnish-Russian Economic Commission in addressing and promoting Arctic issues. ***(Ministry of Employment and the Economy, Ministry for Foreign Affairs)***
- Promote the development of Finnish shipping and ancillary services including related Arctic expertise. ***(Ministry of Transport and Communications, Ministry of Employment and the Economy, Ministry of Education and Culture)***

- Ensure a high standard of low-temperature, winter, ice and weather research and expertise in Finland by establishing it as a central theme of the corporate development programme in the strategy development and demonstration efforts. ***(Ministry of Employment and the Economy, Ministry of Transport and Communications, Ministry of Education and Culture)***
- Consolidate Finland's position as an internationally recognised expert in ice navigation training. ***(Ministry of Transport and Communications, Ministry of Employment and the Economy, Ministry of Education and Culture)***

4.4 Renewable natural resources

Objective related to the use of renewable natural resources:

- Use the renewable natural resources in the Arctic in a sustainable way and utilise the related ecosystem services and immaterial values more effectively.

Action:

- Take an active part, with the other Nordic countries and Russia, in the cooperation designed to manage renewable natural resources, make use of the business potential offered by the sustainable use of the resources, and explore the potential offered by EU-funded programmes in managing and developing ways to utilise natural resources. ***(Ministry of Agriculture and Forestry)***
- Enhance the health and growth of forests through the sustainable management and use of forest resources while facilitating adaptation to climate change. ***(Ministry of Agriculture and Forestry)***
- Encourage an increased use of wood as a local renewable energy source. ***(Ministry of Agriculture and Forestry, Ministry of Employment and the Economy)***
- Promote the diversification of business and entrepreneurship based on northern forests, with a view to increasing the volumes of wood raw material and other ecosystem services provided by the forests. ***(Ministry of Agriculture and Forestry, Ministry of Employment and the Economy)***
- Enhance participatory regional decision making responsive to the various forms of using natural resources. ***(Ministry of Agriculture and Forestry)***
- Identify the business opportunities offered by bioeconomy. Ensure the availability, sustainability and public acceptance of renewable natural resources in order to secure a favourable operating environment for bioeconomy. ***(Ministry of Agriculture and Forestry, Ministry of Employment and the Economy)***
- Develop ways to manage the stocks of game birds nesting in the Arctic region and ensure sustainable hunting by preparing management plans consistent with the principles of adaptive hunting nationally and internationally along the full length of the flyways. ***(Ministry of Agriculture and Forestry)***

4.5 Mining industry

Objectives related to the mining industry:

- Develop and offer new technological solutions using the resources of Finnish companies to meet the needs of the mining industry in the challenging Arctic conditions.

- Develop infrastructure and services using the resources of Finnish companies to support mining operations consistent with sustainable development.
- Make Finland an eco-efficient minerals industry pioneer by 2020.

Action:

- Promote the exports of Finnish mining and mineral technology to the Arctic region. ***(Ministry of Employment and the Economy)***
- Attract foreign R&D investments to the emerging mining sector by offering opportunities for funding and piloting reference projects and providing information on available R&D funding. ***(Ministry of Employment and the Economy)***
- Promote new technological solutions by making use of pre-commercial purchasing in collaboration with mining companies. ***(Ministry of Employment and the Economy)***
- Promote a sustainable mining industry in accordance with the action plan for a sustainable minerals industry. ***(Ministry of Employment and the Economy)***
- Raise Finland's international profile as an operating environment and disseminate pertinent information, in English, on the operating potential and regulation of the minerals industry in Finland in order to attract more foreign investments. ***(Ministry of Employment and the Economy)***

4.6 Cleantech

Cleantech objective:

- Promote Finnish cleantech expertise and use it to develop Arctic applications.
- Promote the exports of Finnish cleantech.

Action:

- Support the launching and funding of cleantech reference projects. ***(Ministry of Employment and the Economy)***
- Promote Arctic cleantech development by establishing Arctic cleantech as a central principle in the corporate development programme. ***(Ministry of Employment and the Economy)***
- Promote cooperation, efficiency and a long-term approach among cleantech organisations in the Team Finland spirit. Create a Team Finland concept identifying concrete measures to enable and support the growth of the Arctic cleantech business. ***(Ministry of Employment and the Economy, Ministry for Foreign Affairs, Prime Minister's Office)***
- Promote Finnish expertise in and export of mechanical oil recovery systems. ***(Ministry of Employment and the Economy)***
- Lobby for the establishment of an international (Arctic) centre of excellence in chemical and oil spill recovery in Finland. ***(Ministry of Employment and the Economy, Ministry for Foreign Affairs, Ministry of the Environment)***
- Promote the cooperation and networking of cleantech R&D projects and technology companies between Finland and Russia. ***(Ministry of Employment and the Economy, Ministry for Foreign Affairs)***

4.7 Tourism

Objective related to tourism:

- Increase and renew the tourist industry to bring well-being to the region in accordance with the principles of sustainability.

Action:

- Recognise the importance of tourism as a major industry and an international export growth sector in the Arctic region, and support it through goal-oriented preparation, land use planning, investments and the allocation of sufficient development resources while making use of the Team Finland network. ***(Ministry of Employment and the Economy, Ministry of Agriculture and Forestry, Ministry of the Environment, Prime Minister's Office)***
- Improve access to Finnish Lapland (air, rail and feeder traffic services) in response to the needs of the tourism industry. ***(Ministry of Transport and Communications)***
- Develop a model for a sustainable concentration of tourist services to foster economically viable, customer-oriented local communities and cultures as well as resorts of international standard respectful of the Arctic environment. ***(Ministry of Employment and the Economy)***
- Make use of the tourist safety network model developed in Finland to improve safety performance throughout the Arctic region. ***(Ministry of the Interior, Ministry for Foreign Affairs, Ministry of Employment and the Economy)***
- Develop local planning for use in the evaluation, comparison and reconciliation of the interests of the various business sectors and other values (e.g. the mining industry, wind farms and the forest industry) so as to maintain the attractiveness of sustainable tourism and the operating environment of the sector. ***(Ministry of the Environment, Ministry of Employment and the Economy, Ministry of Agriculture and Forestry)***
- Support and encourage a responsible tourism business through projects that take due account of the special features of the sector (natural environment, sensitivity, accessibility, seasonal variation) and through efforts to develop the operating environment. ***(Ministry of Employment and the Economy, Centres for Economic Development, Transport and the Environment)***
- Ensure the increased provision of tourism-related foresighting data, applied research and expertise pertaining to the specific characteristics of the Arctic region and the dissemination of this information through various channels. ***(Ministry of Employment and the Economy, Ministry of Education and Culture)***
- Promote culturally sustainable tourism through culture partnerships and cooperation with creative industries. ***(Ministry of Education and Culture, Ministry of Employment and the Economy)***

4.8 Traffic and transport systems

Objectives related to traffic and transport systems:

- Create a basis for ensuring access by the EU to the Arctic Ocean and looking after Finland's long-term interests.
- Provide for efficient transport and traffic systems and border crossing points in the Arctic region.
- Ensure safe and environmentally friendly shipping in Arctic sea areas.

Action:

- Draw up a long-term action and investment plan for the gradual improvement of shipping routes in the Arctic Ocean in response to the increasing volume of traffic. ***(Ministry of Transport and Communications, Ministry of Employment and the Economy)***
- Take an active part in the current preparation for the integrated Barents Region Transport Strategy and in the Northern Dimension Partnership on Transport and Logistics. ***(Ministry of Transport and Communications, Ministry for Foreign Affairs)***
- Take an active part in the development of main cross-border routes in the northern areas of the EU. ***(Ministry of Transport and Communications)***
- Plan and implement measures designed to eliminate bottlenecks in the transport services to existing and proposed mines, and in the transport network. ***(Ministry of Transport and Communications)***
- Make a land-use reservation in the regional plan for a new rail line from Sodankylä to Rovaniemi. ***(Ministry of Transport and Communications)***
- Improve border crossing points to ensure the smooth flow of cross-border traffic. ***(Ministry of the Interior, Ministry of Transport and Communications)***
- Consolidate Finland's position as an Arctic expert within the IMO. Take an active part in international maritime cooperation, including the preparation and implementation of the IMO Polar Code, thereby safeguarding favourable conditions for shipping and related expertise in the region. ***(Ministry of Transport and Communications, Ministry of the Environment)***

4.9 Data communications and digital services

Objectives related to data communications and digital services:

- Improve the reliability of Finnish data communications and Finland’s competitiveness as a base for the digital information-intensive business, while promoting the development of digital services.
- Create favourable conditions for the development and application of new solutions in Arctic conditions.

Action:

- Ensure the construction of a high-capacity connection from Utsjoki to Norway. ***(Ministry of Transport and Communications)***
- Explore the potential for building a new data communication connection between Finland and Germany, and make use of the contemplated high-capacity connection along the North-East Passage from Europe to Asia. ***(Ministry of Transport and Communications)***
- Create a testing and development environment for cloud computing services. ***(Ministry of Transport and Communications)***
- Offer eco-efficient supercomputing capacity at the CSC – IT Center for Science in Kajaani making use of the northern climate. ***(Ministry of Education and Culture)***
- Explore the development needs for data communication connections (Funet and Nordunet) in northern Finland (Kilpisjärvi, Sodankylä, Kevo, etc.) with a view to national and international research cooperation. ***(Ministry of Education and Culture)***
- Engage in closer cooperation to utilise the Russian GLONASS satellite system to ensure Sat Nav functionality in northern areas. ***(Ministry of Transport and Communications)***

- Utilise the funding opportunities offered by the ENI CBC and the Connecting Europe Facility. ***(Ministry of Employment and the Economy, Ministry of Transport and Communications)***

5. Environment and stability

5.1 The Arctic environment

Objectives related to the Arctic environment:

- Identify the limitations imposed by the Arctic environment, the evaluation of the risks associated with human action and the prevention of pollution as the key elements of Finland's activities in the region.
- Develop the network of nature conservation areas in the Arctic in order to improve the standard of environmental protection and clarify the framework for economic activity.
- Include the mitigation of climate change and the adaptation to change in the Arctic as an integral element of the international cooperation Finland engages in.

Action:

- Increase the visibility and weight of the climate change issues affecting the Arctic region in global climate talks. **(Ministry of the Environment, Ministry for Foreign Affairs)**
- Support international projects to reduce the emissions of short-lived climate pollutants affecting the region, black carbon in particular, and the preparation of an action programme for the reduction of black carbon emissions while at the same time reducing emissions in Finland. ***(Ministry of the Environment, Ministry for Foreign Affairs)***
- Assess the risks associated with operations in the Arctic region and identify potential legal and other consequences, also in terms of corporate social responsibility. The assessment will be used as a basis for determining the acceptable level of risks for involvement. ***(Ministry of the Environment, Ministry for Foreign Affairs, Ministry of Agriculture and Forestry, Ministry of Transport and Communications)***
- Implement nationally the Arctic Council's recommendations presented in its environmental assessments and reports for the protection of the environment and biodiversity in the region. ***(Ministry of the Environment, Ministry of Agriculture and Forestry, Ministry of Employment and the Economy, Ministry of Transport and Communications, Ministry of Social Affairs and Health)***
- Participate in the evaluation and efficient enforcement of the existing international legislation and guidelines, and continue the efforts to develop the methodology for the assessment of environmental impacts in the region. ***(Ministry of the Environment, Ministry for Foreign Affairs, Ministry of Justice)***
- Disseminate information on services and best practices conducive to environmental safety, and develop emission limits and safety regulations. ***(Ministry of the Environment, Ministry of Transport and Communications, Ministry of Employment and the Economy)***
- Develop the network of Arctic conservation areas and, in particular, the protection of the international sea area around the North Pole lying outside the economic zones of the coastal states. Urge prompt action to both protect the areas already identified as valuable sites and implement the recommendations presented in the Arctic Biodiversity Assessment (ABA) and the Arctic Marine Assessment (AMSA). Implement the project to develop the network of conservation areas in the Barents region and draw attention to

the results of the cooperation internationally. Ensure that the Arctic Council and its Member States promote action to protect the environment as part of the efforts to complement the network of conservation areas in the Arctic. ***(Ministry of the Environment, Ministry for Foreign Affairs, Ministry of Transport and Communications)***

- Intensify cooperation between the Arctic Council, the UN Convention on Biological Diversity, IMO and the International Union for Conservation of Nature (IUCN) in order to identify Arctic sites of the greatest significance in terms of biodiversity and to strengthen the UN Convention on the Law of the Seas (UNCLOS) with regard to biodiversity. ***(Ministry of the Environment, Ministry for Foreign Affairs, Ministry of Transport and Communications)***
- Take active part in the cooperation to promote the protection of the Arctic environment and the prevention of pollution both locally and globally. Support actions to monitor the state of the environment and the generation of environmental data, and to maintain an efficient monitoring network to ensure that up-to-date data are available to support decision making. ***(Ministry of the Environment, Ministry of Transport and Communications, Ministry of Agriculture and Forestry, Ministry of Education and Culture)***
- Ensure the implementation and enforcement of the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic. Participate in the development of the action plan to prevent oil spills and other systems under the auspices of the Arctic Council. ***(Ministry of the Environment, Ministry of Transport and Communications, Ministry for Foreign Affairs, Ministry of the Interior)***

5.2 Stability of the Arctic Region

Objectives related to stability in the Arctic:

- Maintain security and stability.
- Formulate an up-to-date situation picture.
- Develop capabilities for cooperation and action in the Arctic.

Action:

- Finland seeks to actively promote stability and security in the Arctic region through international cooperation in accordance with its adopted foreign and security policy. ***(Ministry for Foreign Affairs, Ministry of Defence)***
- Make active and systematic efforts to network on the various international fora. ***(Ministry for Foreign Affairs, Ministry of Defence, Ministry of the Interior)***
- Analyse the Arctic operating environment and security arrangements in terms of overall security, and develop shared situation awareness. Present the overall security model to the Arctic partners. ***(Security Committee and ministries)***
- Develop cooperation capabilities on a cost-efficient basis by offering the Defence Forces' exercise and training services to international partners. Explore the potential for intensifying Nordic defence cooperation in Arctic issues. ***(Ministry of Defence)***
- Make use of the best practices generated by both governmental maritime (including *METO*, *BSRBCC*) and sea surveillance cooperation (*MARSUR*, *SUCBAS*) in an effort to enhance safety at sea. ***(Ministry of Defence, Ministry of the Interior, Ministry of Transport and Communications, Ministry of the Environment)***

- Support the competitiveness of Finnish security and defence research, and industry. ***(Ministry for Foreign Affairs, Ministry of Defence, Ministry of the Interior, Ministry of Employment and the Economy, Security Committee)***

5.3 Internal security

Objectives:

- Develop international rescue cooperation in the Arctic region and improve the efficiency of cross-border assistance.
- Establish efficient cross-border cooperation between local, regional and national authorities and actors.
- Develop cross-border cooperation in crime prevision in order to evaluate and ward off threats to Arctic shipping and security risks.

Action:

- Introduce the best practices of the Baltic Sea and Nordic cooperation to Arctic regions by making full use of the existing methods and mechanisms. ***(Ministry of the Interior)***
- Develop and improve the efficiency of governmental cooperation models and crisis management tools both within the national and international contexts. ***(Ministry of the Interior)***
- Explore the possibility of establishing a Coast Guard cooperation forum for the Arctic region. ***(Ministry of the Interior, Ministry for Foreign Affairs)***
- Develop cooperation between the crime prevention authorities in the Circumpolar region by making use of the best practices developed within the context of the Nordic PTN crime prevention cooperation and the Task Force on Organised Crime in the Baltic Sea Region in order to prepare threat scenarios and promote cooperation in crime prevention. ***(Ministry of the Interior)***
- Take active part in the implementation of the Arctic Search and Rescue Agreement. ***(Ministry of the Interior)***

6. International cooperation in the Arctic

6.1 Finland’s position in the Arctic

Objectives related to Finland’s position in the Arctic:

- Strengthen Finland’s Arctic position in external relations.
- Promote international cooperation and international treaties as the foundation for all of Finland’s activities in the Arctic.

Action:

- Take account of Finland’s Arctic aspects in public diplomacy and the efforts to build up Finland's image. ***(Ministry for Foreign Affairs, Team Finland network)***
- Make use of Finland network of foreign missions and the efforts of Team Finland in the evaluation of the global significance of the Arctic region. ***(Prime Minister’s Office, Ministry for Foreign Affairs, Ministry of Employment and the Economy, Ministry of Education and Culture)***

- Make active use of international and local fora to promote Finland's Arctic objectives. ***(All ministries)***
- Establish contacts with all the actors involved in projects of major importance to Finland (including the governments of neighbouring countries) and intensify marketing efforts to advance Finland's interests. ***(Ministry of Transport and Communications, Ministry of Employment and the Economy, Ministry for Foreign Affairs)***
- Make active efforts and take the initiative within the Arctic Council to develop the contractual framework complementary to the overall regulation of activities in the Arctic. ***(Ministry for Foreign Affairs, other ministries)***
- Reinforce Arctic capabilities and resources in foreign affairs administration and other administrative sectors. ***(Ministry for Foreign Affairs, other ministries)***

6.2 International cooperation in the Arctic

Objectives of international Arctic cooperation:

- Take account of the global dimension of international cooperation in the Arctic region.
- Consolidate the position of the Arctic Council.
- Intensify mutual cooperation between northern regional councils as well as cooperation between the councils and the Northern Dimension.
- Remove barriers to international trade, thwart protectionist measures and make use of Russia's WTO membership.

Action:

- Finland supports strengthening the Arctic Council by: ***(Ministry for Foreign Affairs, Ministry of the Environment, Ministry of the Interior)***
    - working for the recognition of the Council's global role;
    - engaging in closer cooperation with actors outside the Arctic region;
    - redefining the Council's position as an international organisation;
    - increasing the visibility of the Council; and
    - increasing the Council's role in the preparation of agreements.
- Finland takes active part in the workings of the Arctic Council and takes initiative in the Council in accordance with its Arctic policy. ***(Ministry for Foreign Affairs and other ministries)***
- Improve cooperation and coordination between Arctic actors and institutions. ***(Ministry for Foreign Affairs and other ministries)***
- Take an active part in Northern Dimension partnerships and cooperation in the Barents region. ***(All ministries)***
- Finland's Arctic objectives are promoted by making use of Finland's presidency of the Barents Euro-Arctic Council during 2013–2015. **(*Ministry for Foreign Affairs*)**
- Reduce the gap between the activities of the Barents Euro-Arctic Council and the Northern Dimension cooperation. ***(Ministry for Foreign Affairs, Ministry of Transport and Communications, Ministry of Social Affairs and Health, Ministry of the Environment, Ministry of Education and Culture)***
- Use Arctic cooperation within the Nordic Council of Ministers to support and complement the pursuit of Finland's Arctic policy and its efforts both in the Arctic Council and the Barents Euro-Arctic Council. ***(Ministry for Foreign Affairs and other ministries)***

- Ensure that the trade barriers encountered in the course of cooperation are brought up and taken into account in the EU's talks with third countries (particularly Russia and the United States). ***(Ministry for Foreign Affairs)***
- Emphasise the position of the International Maritime Organization (IMO) in the regulation of shipping in the Arctic region and ensure Finland's active role in this. ***(Ministry for Foreign Affairs, Ministry of Transport and Communications)***
- Ensure the preservation of Finland's competitiveness in the preparation of IMO's Polar Code. ***(Ministry for Foreign Affairs, Ministry of Transport and Communications, Ministry of Employment and the Economy)***

6.3 Bilateral Arctic partnerships

Objectives of bilateral Arctic partnerships:

- Establish bilateral Arctic partnerships with countries supporting Finland's actions.
- Intensify and extend the Arctic partnership between Finland and Russia by implementing the initiatives discussed at partnership seminars.

Action:

- Extend and support international Arctic cooperation by establishing new bilateral partnerships. **(Ministry for Foreign Affairs and other ministries)**
- Reinforce the role of the shipbuilding, oil and gas working groups appointed by the Finnish-Russian Economic Commission in the processing and advancement of Arctic issues. ***(Ministry for Foreign Affairs, Ministry of Employment and the Economy)***
- Enable the operation of ice-breakers flying the Finnish flag in Russia's territorial waters and vice versa if necessary. ***(Ministry for Foreign Affairs, Ministry of Transport and Communications)***
- Plan and hold regular Arctic partnership seminars offering networking opportunities for business and industry and providing information on the latest developments regarding business opportunities emerging in the region. ***(Ministry for Foreign Affairs, Ministry of Employment and the Economy)***

6.4 EU's role in the Arctic

Objectives related to the EU's role in the Arctic:

- Work together with Sweden and Denmark to clarify the EU's role in the Arctic.
- Support efforts to consolidate the EU's Arctic policy and its observer status in the Arctic Council.
- Establish the EU Arctic Information Centre in Rovaniemi, Finland.

Action:

- Intensify cooperation with Sweden and Denmark to consolidate the EU's Arctic policy. ***(Ministry for Foreign Affairs)***
- Clarify the European Union's Arctic role and policy by means of the Information Centre, among others. ***(Ministry for Foreign Affairs, Ministry of Finance)***
- Develop the EU's ENI CBC Programmes, particularly Kolarctic, as project financing vehicles for Barents cooperation. ***(Ministry of Employment and the Economy, Ministry for Foreign Affairs and other ministries)***

- Develop the EU's programmes for cooperation at internal borders, particularly the Northern Periphery and Pohjoinen/Nord, as financing vehicles for cooperation projects in the Arctic region. ***(Ministry of Employment and the Economy)***
- Support the action to establish the EU Arctic Information Centre in Rovaniemi and promote the role of the Arctic Centre of the University of Lapland both nationally and internationally. ***(Ministry for Foreign Affairs)***

Appendices

VALTIONEUVOSTON KANSLIA

Appendix 1

Decision on updating Finland’s Arctic strategy and allocation of resources

Appointment

The Prime Minister’s Office has today established a project for the purpose of updating Finland’s Strategy for the Arctic Region.

Term

1.11.2012–30.4.2013.

Background

At its session of 4 June 2010, the Cabinet Committee on European Union Affairs reviewed the proposal for Finland’s Strategy for the Arctic Region prepared by the civil service working group appointed by the Prime Minister's Office.

In accordance with the objective specified in the Government Programme, the Government decided in its evening session on 15 June 2012 to review Finland’s priorities in the Arctic by autumn 2012 and update the Strategy for the Arctic Region by April 2013. By June 2012, all the ministries had notified the Unit for Northern Europe (Ministry for Foreign Affairs) of the civil servants appointed as designated Arctic representatives. The network is chaired by Ambassador Hannu Halinen.

The Arctic policies were adopted by the Government with a few additions in its evening session on 10 October 2012. Following the adoption of overall policies, work will be continued to update Finland’s Strategy for the Arctic Region by April 2013 on the basis of said policies. Updating the strategy is advisable at this point in time because the developments in the Arctic region have been quick and partly unexpected. The current Arctic strategy needs to be updated and the changes in the operating environment taken into account more extensively than they are now. Due consideration in the updating process must also be given to the foresighting report, in which one of the themes is the new northern geography.

Brief

The working group is tasked to prepare a proposal for updating Finland's Strategy for the Arctic Region.

Organisation

The work will be overseen by a steering group consisting of the following Permanent Secretaries: Pertti Torstila of the Ministry for Foreign Affairs; Arto Räty of the Ministry of Defence; Raimo Sailas of the Ministry of Finance; Harri Pursiainen of the Ministry of Transport and Communications; Erkki Virtanen of the Ministry of Employment and the Economy; and Hannele Pokka of the Ministry of the Environment. Meetings of the steering group will be convened by State Secretary Olli-Pekka Heinonen.

Additional support for the efforts will be provided by the Arctic Working Group appointed by the Prime Minister's Office and chaired by State Secretary Heinonen. The decision to appoint the Arctic Working Group is attached.

The work will be carried out by a group of designated civil servants from the various ministries under the supervision of Ambassador Hannu Halinen. The civil servants are responsible for ensuring that the views of their respective administrative sectors are duly taken into account in accordance with a work plan to be drawn up at a later date. The views must include duly prepared proposals complete with a timetable, allocation of responsibilities and estimates of the required resources.

Members of the civil servant working group:

Hannu Halinen, Chair, Ministry for Foreign Affairs

Johanna Suurpää, Ministry of Justice

Kukka Krüger, Ministry of the Interior

Heidi Fransila, Ministry of Defence

Kirsti Vallinheimo, Ministry of Finance

Annu Jylhä-Pyykönen, Ministry of Education and Culture

Tapio Hakaste, Ministry of Agriculture and Forestry

Petri Jalasto, Ministry of Transport and Communications

Janne Peltola, Ministry of Employment and the Economy

Liisa Ollila, Ministry of Social Affairs and Health

Ann-Britt Ylinen, Ministry of the Environment

Nina Brander, Prime Minister’s Office

Expert

Antti Vänskä, Prime Minister’s Office

Secretariat

Hanna-Elina Koivisto, Ministry for Foreign Affairs

Cost and financing:

Members of the working group will carry out the work as part of their official duties. No attendance fees will be paid. Each organisation will pay for the cost of travel of its own representatives. The Prime Minister’s Office will cover the travel expenses of experts in accordance with the State’s Travel Regulations.

The working group cannot place orders or conclude any agreements binding on the Prime Minister’s Office without the prior approval of the Prime Minister’s Office. Similarly, specific decisions from the Prime Minister's Office are required on expert fees and any other obligations giving rise to costs.

Issues such as the number of copies, distribution, layout and translation of any reports and other publications will have to be agreed upon in advance with the Prime Minister’s Office.

Prime Minister Jyrki Katainen

Director General Auni-Marja Vilavaara

Appendix	Decision to appoint the Arctic Working Group
Distribution	Members of the Working Group
C.C.	Ministries

Appendix 2

Acronyms

AC Arctic Council

ASFR Arctic Security Forces Roundtable

BEAC Barents Euro-Arctic Council

BRC Barents Regional Council

BSRBCC Baltic Sea Region Border Control Cooperation

BSTF Baltic Sea Region Task Force on Organized Crime

Coastnet, a government communications network primarily intended for border authorities

EBRD European Bank for Reconstruction and Development

EIB European Investment Bank

ELY (ELY Centre) Centre for Economic Development, Transport and the Environment

ENI CBC European Neighbourhood Instrument Cross-Border Cooperation 2014–2020

EPPR Emergency Prevention, Preparedness and Response

EU European Union

GLONASS Globalnaja navigatsionnaja sputnikovaja sistema, Global Navigation Satellite System of the Russian Ministry of Defence

GTK Geological Survey of Finland

HFC Hydrofluorocarbons

IFC International Finance Corporation

ILO International Labour Organization

IMO International Maritime Organisation

INTERREG Interregional cooperation programmes of the European Union

IPCC Intergovernmental Panel on Climate Change

IUNC International Union for Conservation of Nature

MARSUR Maritime Surveillance, sea surveillance project of the European Defence Agency

Metla Finnish Forest Research Institute

METO Cooperation, cooperation between the authorities in the maritime sector

MTT Agrifood Research Finland

NATO North Atlantic Treaty Organisation

NDBC – Northern Dimension Business Council

NDEP Northern Dimension Environmental Partnership

NDPHS Northern Dimension Partnership in Public Health and Social Well-being

NDPTL Northern Dimension Partnership on Transport and Logistics

NDPC Northern Dimension Partnership on Culture

NEFCO Nordic Environment Finance Corporation

NIB Nordic Investment Bank

NordMin – Nordic network of expertise for a sustainable mining and mineral industry in the Nordic Region

NORDEFCO Nordic Defence Cooperation

NORDRED Nordic Search and Rescue Agreement

OSH Occupational Safety and Health

PAME Protection of the Arctic Marine Environment

NCM Nordic Council of Ministers

PNT Polis och Tull i Norden, Nordic cooperation in crime prevention

ND Northern Dimension

RKTL Finnish Game and Fisheries Research Institute

SAKK The Saami Education Institute (Sámi oahpahusguovddáš)

SDWG Sustainable Development Working Group

SHOK Strategic Centres for Science, Technology and Innovation

SLCPs Short Lived Climate Pollutants

STUK Radiation and Nuclear Safety Authority

SUCBAS Sea Surveillance Cooperation Baltic Sea

SYKE Finnish Environment Institute

Tekes The Finnish Funding Agency for Technology and Innovation

UArctic University of the Arctic

UNCLOS United Nations Convention on the Law of the Sea

EPI Export Promotion and Internationalisation

VTT Technical Research Centre of Finland, VTT

UN The United Nations