



# The common objectives of the European Nordic countries and the role of space



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## ABSTRACT

The European Space Agency (ESA) has twenty two Member States with common goals of engaging in European space activities. However, the various Member States have a variety of governance structures, strategic priorities regarding space and other sectorial areas depending on their cultural and geopolitical aspirations. The Nordic countries, namely Denmark, Finland, Norway and Sweden, have similarities which result often in common geopolitical and cultural aspects. These in turn shape their respective priorities and interests in setting up their policies in a number of sectorial areas like shipping and fisheries, energy, immigration, agriculture, security and defence, infrastructures, climate change and the Arctic. Space technology, navigation, earth observation, telecommunication and integrated applications can assist the Nordic countries in developing, implementing and monitoring policies of common interest. This paper provides an in-depth overview and a comprehensive assessment of these common interests in policy areas where space can provide support in their realisation. The first part provides a synthesis of the Nordic countries respective priorities through analysing their government programmes and plans. The priorities are classified according to the six areas of sustainability: energy, environment and climate change, transport, knowledge and innovation, natural resources (fisheries, agriculture, forestry, mining, etc), and security and external relations. Although the national strategies present different national perspectives, at the same time, there are a number of similarities when it comes to overall policy objectives in a number of areas such as the Arctic and climate change. In other words, even though the Arctic plays a different role in each country's national context and there are clear differences as regards geography, access to resources and security policies, the strategies display common general interest in sustainable development and management of resources, protection of the environment, international cooperation and regional security. The second part of this paper focuses on the national space strategies and indicates the main priorities and trends. The priorities vary from one country to the other and can include science, navigation, earth observation, human space flight, launchers, technology development, and/or applications. The motivation for investing in space activities also change (e.g. international cooperation, industrial competitiveness, societal benefits, job creation).

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## 1. Introduction

Understanding the specificities and similarities of Member States and their past and current governance, policies and strategies is key for an international organisation such as ESA for preparing the future space policies, strategies and programmes in order to be able to reflect the needs of the Member States, their governments and their citizens. The Nordic countries of Europe, namely Denmark, Finland, Norway and Sweden, have often been seen in literature as a group of countries that share a large degree

of commonalities.<sup>1</sup> They share a geographical and geological profile. They have common borders, access to the sea, as well as large forests, and with the exception of Finland they share a common linguistic heritage. However, even Finland has Swedish as a second official language. Researchers have for long looked at these four countries. Their political and economic system are often identified as being homogenous. Their system is considered as a “Social-Democratic” welfare state, where a large public sector and redistribution goes hand in hand with elements of the liberal market economy. The Esping-Andersen's [1] classification for the

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<sup>1</sup> Iceland can also be regarded as a member of the Nordic countries, but lacking both membership in ESA and the European Union, relevant institutions for space, Iceland has not been included in this research.

archetype Scandinavian “Social Democratic” model includes high benefits, universal entitlements, high decommodification, a large public sector and small private sector, as well as low stratification. There are more models that provide evidence for grouping of the Nordic State. A recent study however, “The Nordic Model” commissioned by the Research Institute of the Finnish Economy (ETLA) [2] supports the findings of Esping-Andersen. It summarizes that there is first, a comprehensive welfare state with an emphasis on transfers to households and publicly provided social services financed by taxes, which are high notably for wage income and consumption. Second, a lot of public and/or private spending on investment in human capital, including child care, education as well as research and development (R&D). Third, a set of labour market institutions that include strong labour unions and employer associations, significant elements of wage coordination, relatively generous unemployment benefits and a prominent role for active labour market policies.

As an embodiment of these theoretical conceptions, the Nordic Council, since 1971 the cooperation forum between the Prime Ministers of Denmark, Finland, Iceland, Norway and Sweden, presents itself to promote and ensure a common set of values of social cohesion. [3] As part of this function the Nordic Council also detects the challenges for the future of the Scandinavian social democratic model. The challenges are in essence increasing globalisation, and demographic change. [4] The threat from globalisation comes in form of increasing labour mobility and global tax competition that require to restructure the economy and to invest in innovation. The ageing population is widening the gap between the active and the passive part of the population, which leads to difficulties in maintaining the provision of social service. [5] The financial and public debt crisis that Europe prevails to be in, is yet another threat that also requires the Nordic states to act. Through analysis of government priorities and understanding the directions these are moving to, tailor made solutions can be found, where space can be used as a tool to provide governments with adequate information in developing, implementing and monitoring, the achievement of their specific goals.

Space activities have historically been looked at as a matter of sovereignty. However, the Nordic countries could understand early enough that space activities are difficult to conduct by one state alone and have engaged in bilateral and multilateral cooperation.

In space, Denmark and Sweden are the two Nordic countries that have the longest tradition. Both have been involved in European and international space activities since the 1960's. They were both members of ESRO and are founding Member States of ESA. Sweden was the first country to ratify the ESA Convention on 23 October 1975. Denmark ratified the Convention in September 1977.

Finland and Norway initiated their space activities later. Norway ratified the ESA Convention in December 1986, and Finland started its activities in space with the Association Agreement with ESA on September 1986, which was later extended in May 1991. In May 1993, Finland officially lodged an application for accession to the ESA Convention. On January 1995, the Accession Agreement to the ESA Convention entered into force and Finland became the 14th ESA Member state. Today, participation in ESA constitutes the main form of Finland's space activities.

All countries are considered as space faring nations, with the exception of Finland. Denmark belongs to this group since 1999, Norway since 2010 with the launch of its first national satellite, and Sweden already since 1986. However, Norway has been launching suborbital sounding rockets since 1962.

Denmark, Norway and Sweden, have ratified four and Finland three out of the five UN Space Treaties, as well as the ITU Constitution and Convention. Nevertheless, only Sweden is a member of the UNCOPOUS, since 1958. All of them are signatories to

several international export control and missile proliferation regimes such as the Nuclear Test Ban Treaty, the Missile Technology Control Regime, the Wassenaar Arrangement, or the Hague Code of Conduct against Ballistic Missile Proliferation. At national level, only Norway (1962) and Sweden (1982) have a public law on space. None of the Nordic countries parliaments are full members of the European Interparliamentary Space Conference (EISC), which is the European forum for national parliaments to discuss space policy and regulation matters.

This paper provides a comprehensive overview of the national policy priorities of the Nordic countries based on the official strategies, published by the government when coming into power. Their focus is decomposed according to the six areas of sustainability, a concept used to combine sectorial policies and benefits from space. [6] The national space strategies are analysed to identify the motivators for engaging in space activities and their focus areas with regard to technology domain. Additionally, their priorities on using space as a tool to support the six areas of sustainability is analysed.

## 2. Government and strategies

The governments currently in power in the four Nordic countries are, with the exception of Finland and Sweden minority coalitions that had not been in power previously. Sweden has the only governing coalition dominated by the social democrats, while Denmark's, Finland's and Norway's are centred around conservative and liberal parties that present the Prime Ministers. (Table 1).

When a government assumes power, it typically publishes government programmes providing the overview of the focus for the next years. Those government plans of the Nordic countries have been gathered and analysed (Table 2).

The basic document for the Danish government programme is the plan “Sammen for Fremtiden” (Together for the future), with the underlining objective to achieve greater cooperation – vertically and horizontally. The main topics for the legislative period include increasing public sector consumption, a tougher stance on immigration and a new job reform. It also includes the pursuit not to increase taxes or tolls during this election tenure, as well as continued action against the terror organisation Islamic State.

In Finland, the government's plan “Finland, a land of solutions” mainly aims to deregulate and de-bureaucratise, promote entrepreneurship, exports and use of renewable natural resources, reduce poverty, inequality and social exclusion, promote Nordic cooperation, use the Arctic as well as to create a security architecture for Finland. The underlying premise of the Sipilä government is that Finland “must set people's resources free to engage in creative activity, entrepreneurship and the creation of wellbeing. Finland must become a society founded on know-how, entrepreneurship, equality and caring.” [9].

**Table 1**  
Overview of the Nordic governments.

	Denmark	Finland	Norway	Sweden
Elected	2015	2015	2013	2014
Form of government	Minority Coalition	Majority Coalition	Minority Coalition	Majority Coalition
Type of government	Conservative Liberal	Center, Liberal & National	Center Right & Liberal	Social democratic & Green
Budget for Space (2014)[7]	34.5 M€	45 M€	77.8 M€	127 M€

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