# PROJECT FINAL REPORT

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# 4.1 Final publishable summary report

## Executive summary

The aim of the NORDERA project has been to pinpoint lessons learnt from Nordic coordination in the context of the ERA.

Based on our project findings it may be argued that intensifying cross-border collaboration and pooling resources into joint R&I actions are crucial to meeting the demands of globalisation and solving the grand societal challenges of our time. To this end, the Nordic Research and Innovation Area (NORIA), a Nordic equivalent to the European Research Area (ERA), has been established with similar objectives and ambitions. In the NORDERA project we have examined whether the EU has anything to gain from the Nordic region's experience with R&I. We also briefly reflect on how to transfer lessons from the Nordic region to the much larger European context.

Formalised cooperation between the Nordic countries is one of the oldest, most extensive examples of regional cooperation in the world. Nordic cooperation may be found in many important areas, such as business development, the environment, welfare and the cultural sphere, in addition to research. The Nordic countries are relatively small, wealthy welfare states with open economies and large public sectors. Nordic collaboration has resulted in significant achievements, including a passport union and a common Nordic labour market, which facilitate a high degree of mobility within the region.

Nordic R&I collaboration takes place within a strong institutionalised framework built on long traditions and mutual trust but with relatively limited budgets. Nordic researchers score high on international citation indexes and in terms of the number of scientific publications. The Nordic countries are also actively involved in European networks under the EU Framework Programmes. The Nordic region's many R&I achievements are due, to a large extent, to the existence of a common cultural community and a high degree of mutual trust. The numerous examples of non-formalised research and innovation cooperation also indicate that Nordic researchers find it both important and fruitful to cooperate on a wide range of topics, regardless of limited funding prospects.

Thanks to long-standing R&I cooperation, the Nordic region provides an excellent arena for experimenting with *joint R&I initiatives and funding models*. Recent examples include the Nordic Globalisation Cooperation initiative launched in 2007, of which the Top-level Research Initiative (TRI) on climate, energy and the environment established in 2008 is one concrete result. The TRI is the most comprehensive Nordic R&I programme, and the only one that resembles "joint programming" as defined by the EU.

Under the TRI, funding is channelled via a common pot. An important conclusion of the NORDERA project is that Nordic cooperation has had notable success in the use of common pots and that it appears to be easier for Nordic funding agencies to enter into joint funding and common pot agreements than it is for their European counterparts. The Nordic Centres of Excellence (NCoE) scheme is another example of a successful, co-funded programme that uses a common pot. Most of the NCoEs have attracted attention far beyond the boundaries of the Nordic region.

It is, however, not always easy for the Nordic countries to join forces, even though there is a strong political will to do so and obvious added value to be gained. Co-funding of – and cooperation on – research infrastructure is such an example. Still, the Nordic countries have great potential for further developing cooperation on infrastructure and many interesting initiatives have been taken in that direction.

There is also a clear need to improve integration of research and innovation to deal with future challenges. Like the EU, the Nordic countries have also had difficulties integrating research and innovation policies. Still, they have managed to do so in the TRI and each Nordic institution has instruments for this purpose.

## A summary description of project context and objectives

***Project context***

Since 2000, both the Nordic region and the European Union have taken important initiatives to increase transnational cooperation in research and innovation. While Nordic R&I cooperation has a long tradition, its character has changed over time. In the past, a key difference between Nordic and EU cooperation in this field has been the bottom-up approach of the former and the top-down approach of the latter. This means that the Nordic R&I cooperation was a result of initiatives coming from the research community or the operational level itself and to a large extent taking place on an ad hoc basis. The European cooperation was to a larger extent a result of an intended policy. With the creation of common Nordic coordinating institutions, such as NordForsk and the Nordic Innovation Centre, and the establishment of a European Research Council that opens up for curiosity-driven research, this distinction has become less clear. Several political initiatives have aimed at increasing the visibility of Nordic research cooperation within the international arena in recent years. The goal is to transform the Nordic region into a leading region in terms of research and innovation. An important step in that direction was the launching of the NORIA vision in 2004, which in turn has led to the establishment of new institutions and new initiatives. The assumption therefore, is that there should be large scope for mutual learning through the study of the two regions' past experiences in the field of research coordination.

The NORDERA project (Lessons Learnt from Nordic Coordination in the Context of ERA) is an ERA-NET Support Action coordinated by NordForsk with the Nordic Innovation Centre (NICe) and the Joint Research Centre (JRC)/Institute for Prospective Technological Studies (IPTS) as partners. By studying the Nordic region's experience with research and innovation (R&I) cooperation, the NORDERA project supports ongoing coordination of national research programmes, thereby encouraging joint programming both in the Nordic region and in the European Union.

***Objective***

The objective of NORDERA is to study experiences of the Nordic region regarding research cooperation, to identify best practices and assess how the lessons learnt can be of value for the further development of the European Research Area (ERA) as well as the Nordic Research and Innovation Area (NORIA) as an integral part of ERA. Three reports have been written to meet these objectives.

*The first report*, entitled "Nordic R&I cooperation – achievements and Challenges", was finalised in March 2010 by NordForsk and NICe. It aims at describing and analysing Nordic cooperation in relation to research and innovation. It presents the main characteristics of both the formalized and the non-formalized aspects of the Nordic cooperation, and through an analysis of the main achievements and challenges. By formalized cooperation we mean forms of cooperation that receive funding for "going Nordic" either from the Nordic Council of Ministers itself or some of its underlying Nordic institutions, or from joint committees of national research agencies or others. By non-formalized, we mean all forms of cooperation that do not receive specific funding for cooperating on a Nordic level. This will most often be bottom-up-initiated cooperation at the research/operational level with no specific Nordic funding. To ensure a comprehensive analysis, it studies such cooperation at three different levels: the *policy level* (mainly between the ministries within the Nordic Council of Ministers); the *agency level* (mainly between the research councils and other national funding agencies within or outside the structures of the Nordic Council of Ministers); and the *research and operational level* (mainly between researchers, companies, institutions, etc.). The report addresses two key questions: *1. What characterizes Nordic research and innovation cooperation? And what is the added value of this cooperation? And 2. To what extent has the main ambition of NORIA been achieved? And what have been and are the main challenges?*

*The second report***,** entitled "Nordic R&D cooperation at the EU level" was finalised in September 2010 by the Joint Research Centre/IPTS. This report focuses on the scope and intensity of Nordic R&I collaboration in recent policy initiatives at European level involving public sector policy actors (e.g.

ministries and funding agencies) at EU and national levels in the formulation of strategic R&D agendas. The report analyses Nordic participation in the ERA-NET scheme, Article 169 projects (Article 185 of the Lisbon Treaty), Joint Programming Initiatives (JPIs), European Technology Platforms (ETPs) and related Joint Technology Initiatives (JTIs). This analysis has encompassed a variety of indicators of participation selected according to the nature of the instrument and the data available. In particular, it studies the degree of participation and roles of participants in the networks as well as the funding invested in joint actions (e.g. joint calls). Since certain initiatives are at a very early stage (e.g. JPIs), estimated budgets of national research programmes in JPI-related areas have also been analysed. Given the voluntary nature of the joint initiatives examined, these indicators have provided good insights into the political commitment of the Nordic countries and the potential of the Nordic region to contribute to joint R&D activities at European level.

*The third and final report* summarises the main findings from the various deliverables throughout the entire project period (the two previous reports as well as the final conference that took place at Hotel Metropole in Brussels on 25 November 2010). The report discusses how to meet the grand challenges of our time through regional and sub-regional R&I cooperation. It shows that the NORDERA project has started a vital debate on important issues concerning the ways in which a strong Nordic R&I region can help to make the ERA even stronger.

## A description of the main S&T results/foregrounds

The EU Member States are struggling with debt and financial constraint, which intensifies the pressure to improve cost-effectiveness and increase synergies in research and innovation policy. In addition, Europe is facing intense global competition in science and knowledge, as new regions emerge as powerful, efficient and attractive actors in the global knowledge market. Successful, coordinated European research and innovation policy is vital to fuelling economic growth, lowering unemployment and ensuring rapid recovery.

Europe has already made significant steps towards a more integrated, coherent policy, but further efforts and reforms are needed. Europe needs to educate a greater number of outstanding researchers, reform the university sector and strive to create closer links between academia and industry. In addition, a simplification of funding instruments and better coordination and/or division of labour between the various levels of governance (Member States, sub-regions and the ERA) in Europe is also vital to achieving these goals. Europe can still gain much new insight from studying its own experience, as well as learning more from the experience of the Member States, the US and the Asian countries, as well as from other forms of regional cooperation.

The aim of the NORDERA project has been to contribute to this learning process by examining research and innovation (R&I) cooperation within the Nordic region. While the Nordic region may not immediately appear to be a representative sample, consisting as it does of five relatively small, wealthy and homogeneous countries in northwestern Europe, we believe that the region's experience may nonetheless prove valuable for Europe at large. The project focus on what the EU can gain from the Nordic experience, and reflect briefly on how lessons learnt from the Nordic region can be transferred to the much larger European context.

### *THE NORDIC REGION AS A SOURCE OF INSPIRATION*

The project findings prove that the results of Nordic regional cooperation may provide valuable input for Europe. Many issues at the top of the European agenda for R&I development are already being addressed in the Nordic region. For example, the region has launched the Nordic Research and Innovation Area (NORIA), a Nordic equivalent to the European Research Area (ERA) that has quite similar objectives and ambitions. Nordic researchers have developed a rich network of informal transnational research communities with a high degree of continuity, mutual trust and open channels of communication. Moreover, many of these ties have been created, developed and sustained using limited financial resources, with relatively low administrative costs and burdens. Although the global ranking of European research as a whole is falling, an analysis of publication activity reveals a significant increase in the number of scientific articles published by Nordic researchers in recent years. All of the Nordic countries are included among the world's most cited countries, ranging from Denmark in fourth place to Finland in eleventh place (Schneider, 2010). Although achieving full integration of R&I policies is difficult, the Nordic region provides some inspiring examples. Compared to other countries, Nordic R&I policies have been relatively successful in promoting the establishment of real common pots in the Nordic region, most notably the Top-Level Research Initiative (TRI). Although smaller than similar EU centre schemes, the Nordic Centres of Excellence (NCoE) scheme is also an example of the successful use of common pots.

### *THE NORDIC REGION – LONG-STANDING COOPERATION*

One of the main tasks of this project has been to map and describe the main elements of Nordic cooperation. Formalised cooperation between the Nordic countries is one of the oldest, most extensive examples of regional cooperation in the world. It began as parliamentary cooperation with the establishment of the Nordic Council[1] by Denmark, Sweden, Finland, Norway and Iceland in 1952. It

[1] The parliamentary cooperation involves members of the national assemblies of Denmark, Finland, Iceland, Norway and Sweden as well as from three autonomous areas: the Faroe Islands, Greenland and the Åland Islands.

was further developed into intergovernmental cooperation built on consensus-based decision-making with the establishment of the Nordic Council of Ministers in 1971. Among the most important achievements are the establishment of a Nordic passport union in 1957, a common labour market in 1992, agreements on the right to vote and stand as candidates in local elections, and access to higher education.

The purpose of Nordic cooperation is, on the one hand, to make it attractive to live, work and do business in the Nordic region and, on the other hand, to strengthen the role of the Nordic countries internationally. Nordic cooperation may be found in many important areas, such as business development, the environment, welfare and the cultural sphere, in addition to research.

The Nordic countries are relatively small, wealthy welfare states with open economies and large public sectors. Their economies are characterised by relatively low unemployment, flexible labour markets and small wage differences. There is also extensive tripartite cooperation between employees, industry and the government sector. Although composed of small states, the region as a whole is economically significant. In terms of size, the economy of the Nordic region ranks among the top 10 economies of the world. This means that the economy of the Nordic region as a whole is larger than those of Russia, Canada, Mexico and India.

Despite the many differences between the Nordic countries – different languages (there are major differences between Scandinavian and non-Scandinavian languages), different approaches to the EU and different policies in many areas – the region has achieved a great deal, largely due to the common cultural community and a high level of mutual trust among its members. In addition to more formalised cooperation under the aegis of the Nordic institutions, a large portion of the cooperative activities in the Nordic region consists of non-formalised networks and associations. It is by and large this non-formalised cooperation that forms the basis for overall Nordic cooperation. One of the greatest strength of Nordic cooperation is bottom-up networking and it can be argued that Nordic R&I cooperation has found a way to balance bottom-up and top-down approaches, as exemplified by the Top-level Research Initiative (TRI).

### *NORDIC R&I COOPERATION*

Nordic R&I cooperation is characterised by a great number of institutions and associations covering most sectors. In addition to formalised cooperation (under the Nordic Council of Ministers (NCM)), there are also numerous public and private institutions and associations that promote Nordic cooperation (NordForsk, 2009b). Although budgets are relatively small,[2] 50% of the NCM's budget is invested in the area of knowledge and innovation. The limited financial resources available for Nordic research give rise to an ongoing discussion on how to improve effectiveness and utilise these resources optimally, as well as how to design and launch programmes in collaboration with research councils in Member States to secure matching funding.

Steps have been taken to boost the effectiveness of Nordic R&I cooperation. The establishment of the Nordic Research and Innovation Area (NORIA) was inspired by the concept of the European Research Area (ERA) launched by the European Commission in 2000 (European Commission, 2000).[3] The NORIA concept sets out a forward-looking vision for the development of an internal market for research and innovation in the Nordic region (Björkstrand, 2004). To complement the NORIA initiative, the Nordic business sector established the Nordic Innovation Policy programme (NCM

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[2] The funding allocated via the Nordic Council of Ministers' budget amounts to around EUR 20 million a year. In addition, there are various co-funded programmes, such as the TRI, that receive additional funding directly from Member States.

[3] For instance, the NORIA objectives are very similar to those referred to in the ERA green paper. They call for the establishment of more Nordic Centres of Excellence (NCoE), increased researcher mobility within the Nordic region, better coordination between the Nordic research councils, increased research-related networking and more efficient use of common infrastructures.

2004). The NORIA concept highlights the link between the EU and the Nordic region and emphasises that Nordic research cooperation is to be aligned with and become an integral component of the ERA. The NORIA initiative is designed to promote further development of the Nordic region into a leading area for R&I, thereby enabling the region to wield greater influence in relation to future Framework Programmes and EU R&I policy in general, as well as making it a more attractive partner for international research cooperation. In the field of R&I, the initiative represents increased confidence in Nordic cooperation as a supplement to EU-level cooperation. Two institutions – the Nordic Innovation Centre (NICe) and NordForsk – have been established partly as a result of the NORIA process and partly as a result of focusing Nordic activities in specific policy sectors (the research/education sector and the business sector).

Although such efforts to expand formalised Nordic R&I cooperation are crucial to strengthening Nordic R&I cooperation as a whole, it is interesting to note that Nordic researchers cooperate even when no specific funding has been allocated for that purpose. There are many examples of non-formalised R&I cooperation between researchers, groups of researchers, companies and institutions within numerous disciplines and branches of industry in the Nordic region which have been nurtured over a long period of time. This indicates that researchers find it both important and fruitful to cooperate on a wide range of topics, regardless of limited funding prospects. One good indicator of non-formalised research cooperation is the large number of Scandinavian scientific journals, which are often linked to some kind of association. In a mapping study, the Norwegian Institute for Studies in Innovation, Research and Education (NIFU STEP) identified no fewer than 163 Scandinavian journals within a variety of academic disciplines (NIFU STEP, 2010).

### *NORDIC R&I COOPERATION AND THE REALISATION OF THE ERA*

It is important to stress that Nordic R&I cooperation is not a substitute for cooperation at the European level. Rather, it has the potential to reinforce the Nordic countries' position *within* the framework of European cooperation, thereby bolstering the ERA as well.

However, the focus of Nordic R&I cooperation is first and foremost on research and innovation at the *Nordic* level to create Nordic added value. According to Dan Andree (2009), the main goal of instruments at the Nordic level is generally to strengthen the Nordic region, which entails activities to promote Nordic cooperation. Nevertheless, Andree argues, Nordic instruments will in general have much more impact on the implementation of the ERA than most national instruments.

There are several examples of Nordic instruments and programmes that have the potential to make the Nordic region stronger, more attractive and more visible internationally (NordForsk, 2009b). This carries importance beyond the borders of the Nordic countries, as enhanced Nordic R&I cooperation may in turn strengthen the ERA, as well as promote broader international R&I cooperation.

In 2008 the European Commission launched the "2020 Vision for ERA" stating that by 2020 all players will fully benefit from the "fifth freedom" across the ERA: free movement of researchers, knowledge and technology. According to this vision, the ERA will provide attractive conditions and effective, rational governance for carrying out research and investing in R&D intensive sectors in Europe by 2020. The Nordic Research and Innovation Area (NORIA) was established to make the Nordic region a leader in R&I, thus mirroring the objectives of the ERA to a large extent.

### *NORDIC STRENGTHS IN R&I*

In addition to actively participating in the ERA, the Nordic region has produced positive results in terms of joint initiatives, use of joint funding models, and achieving excellence, mobility and researcher satisfaction. This is particularly interesting when we take into account the limited budgets available for these kinds of cooperation.

1. *Pooling of resources and joint R&I initiatives.* It can be argued that joint initiatives of a certain scale are necessary for solving the Grand Challenges. All of the countries in Europe

need to cooperate, and the Nordic region may serve as a solid building block for such cooperation. The Nordic region has had notable success in creating joint Nordic R&I initiatives using common pots in recent years. In fact, the formalised Nordic cooperation in itself may be viewed as a common pot with no fair return. There are several examples of co-funded programmes that use the common pot model (NordForsk, 2009b).

The Top-level Research Initiative (TRI) on climate, energy and the environment is the most recent, most ambitious example of such an initiative. With a budget of DKK 400 million (EUR 54 million) over a five-year period, it is the largest joint Nordic research programme and represents a significant step forward in advancing Nordic R&I collaboration.[4] The programme is jointly administered by NordForsk, the Nordic Innovation Centre and Nordic Energy Research. It is interesting to note that the Nordic countries have managed to establish a costly, comprehensive, large-scale programme on climate, energy and the environment in a rather short period of time. The TRI is also the only Nordic programme that conforms somewhat to the EU definition of "joint programming"[5].

Another programme or instrument that has the potential to contribute to strengthening the Nordic region is the Nordic Centres of Excellence scheme. A *Nordic Centre of Excellence* (NCoE) is a network of existing, outstanding national research groups and units that form a virtual centre with common objectives and management and a joint research plan. National sources are expected to provide basic funding for the NCoEs, with Nordic support as a supplement to such funding. The NCoE Programme is an effective means of bringing the crème de la crème of Nordic research into the European research arena, and Nordic researchers may find that their experience with Nordic research cooperation is a significant advantage when competing against or collaborating with other European research units within the ERA.

One of the main conclusions of the NORDERA project is that it appears to be easier for Nordic funding agencies to enter into joint funding and common pot agreements than it is for their European counterparts. A look at the joint calls under the ERA-NET scheme reveals that the real common pot model is used relatively little. It is, however, interesting to note that the ERA-NETS with intense Nordic participation use a real common pot more often than the networks with no Nordic participation {IPTS/JRC, 2009 #1299}. This may be due to the fact that the Nordic countries are relatively homogeneous, have shared views on key challenges, and have a long history of cooperation based on mutual trust and recognition. For example, under the ERA-NET scheme, the SAFEFOODERA project, which has participants from 24 countries and a total budget of EUR 3.7 million, launched two calls that used a combination of a common pot and a distributed pot. The Nordic countries contributed funding for half of the common pot for each call, while the other countries provided the other half.

2. *Excellence in research.* It is notoriously difficult to determine excellence in research. However, there are indications that the Nordic countries are performing rather well. Nordic researchers score high on international citation indexes and in terms of the number of scientific publications (Schneider, 2010). In addition, the NCoE Programme is strengthening already strong research groups, and most of the centres have attracted attention far beyond the boundaries of the Nordic region.

   Research has also shown that the Nordic countries are active participants in European networks. A study on Nordic participation in the EU Framework Programmes (FP6 and FP7)

[4] In 2007 the Nordic prime ministers decided to establish a new globalisation agenda for Nordic research collaboration. As a result, some 14 globalisation projects are now being implemented. One key example is the TRI.

[5] Joint Programming is a new process combining a strategic framework, a bottom-up approach and high-level commitment from Member States. It builds on the experience gained from existing schemes coordinating national programmes. The overall aim of Joint Programming is to pool national research efforts in order to make better use of Europe's precious public R&D resources and to tackle common European challenges more effectively in a few key areas.

commissioned by NordForsk {NordForsk, 2009 #1298} revealed that the Nordic countries have been actively and extensively involved in FP6 and in FP7 to date. Taking into account the relative size of the Nordic countries and their RTD bases, the study found that Nordic performance has been excellent. The Nordic countries are among the most successful when general scale factors such as GDP and population are used. Overall Nordic success rates have been above the FP6 and FP7 averages {NordForsk, 2009 #1298}. Nordic researchers have taken part in almost one-third of the projects and account for almost 10% of total EU funding allocations. It is also interesting to note that Nordic researchers have taken an active, often central role, in their FP projects. Nordic coordinator rates are above the overall averages for FP6 and FP7 (NordForsk, 2009a).

Not only are each and every one of the Nordic countries actively involved in the FPs, there is a high level of Nordic collaboration under the FPs as well. The study shows that almost one-half of the FP6 and FP7 projects with Nordic participation involve Nordic collaboration. Norway and Iceland collaborate most frequently, followed by Finland and Sweden. The Nordic participants' most important partners are generally Germany, the UK and France, although Sweden, Finland, Denmark and Norway all rank among the top 10 partner countries of their Nordic counterparts. Almost one-half of the Nordic participants in FP6 and FP7 projects have actively sought out Nordic partners.

The number of participants from Nordic funding agencies taking part in Joint Initiatives is also high. According to NORDERA Report No. 2, the Nordic agencies participate in the majority of such EU initiatives {IPTS/JRC, 2009 #1299}, and their participation in the ERA-NET scheme[6] is higher than the Member State average.

3. *Mobility*. We lack adequate data to ascertain whether the mobility of researchers within the Nordic region (internal, outgoing and incoming) has changed over the past 10 years. Nevertheless, it may be assumed that the existence of a common labour market and cultural community facilitates mobility within the Nordic region. In addition, the linguistic barriers between several of the countries are small, reducing transaction costs and simplifying cooperation. Few researchers engaged in Nordic cooperation report difficulties with mobility.

4. *Researcher satisfaction.* Nordic researchers seem relatively content with the manner in which Nordic programmes are administered. They report that it is easier to take part in Nordic-funded projects than in EU projects. In general, Nordic R&I cooperation is characterised by a low level of bureaucracy and hierarchy, particularly in comparison with the EU. The Nordic R&I system takes more of a bottom-up approach than the EU system. This is not surprising, as Nordic cooperation involves fewer countries, and these all share a number of similarities. Nordic researchers therefore find that they have a greater chance of getting their applications approved, spend less time on reporting and experience less conflict between partners for Nordic projects. However, while the administrative costs of Nordic projects are lower, there is also less funding available. As Nordic research funding is generally allocated to networking activities and not directly to research as such, it may also be less appealing.

### AREAS WITH POTENTIAL FOR FURTHER DEVELOPMENT

There are certain areas in which the Nordic region has a potential for further development. These are mainly related to the development of Nordic research infrastructure, the integration of research and innovation, and institutional coherence.

1. There are a number of examples of joint Nordic research infrastructures, such as the NORDUnet, the Nordic Data Grid Facility and the Nordic Optical Telescope. It is also

[6] The objective of the ERA-NET scheme is to step up cooperation and coordination of research activities carried out at the national or regional level in the Member States and Associated Countries through the networking of research activities conducted at the national or regional level and the mutual opening up of national and regional research programmes.

interesting to note that two major European research infrastructure projects (the European Spallation Source and EISCAT) are located in the region. Nevertheless, there have been few coordinated research infrastructure initiatives launched or implemented under the Nordic umbrella, due in part to the fact that these require very large-scale investments.

In spite of few examples, there is a high level of political willingness to join forces within this area. The added value for small countries that cooperate more closely in this area is obvious. Localising important research infrastructures in the Nordic region could also make the region more attractive to international and European researchers. It is worth mentioning that there are some important initiatives underway, such as the e-Science initiative.

2. *Integration of research and innovation.* Although successful integration is a goal of Nordic cooperation and a key element of the NORIA concept, the Nordic region is still struggling to find effective, rational models for integrating R&I policies. Several ongoing Nordic projects are seeking to promote knowledge-sharing between academia and industry. Interestingly, all of the main Nordic institutions (NordForsk, Nordic Energy Research and the Nordic Innovation Centre) are funding projects of this kind. Nevertheless, it has proven difficult to integrate research and innovation successfully. As discussed above, this is in part due to differences in approaches to – and mindsets regarding – research and innovation. Another issue is that R&I activities are administered by different institutions under the Nordic Council of Ministers and implemented by different agencies. Organisation at the Nordic level reflects the situation in the Nordic countries. Each Nordic country has different agencies for research and innovation. The key challenge is to increase the sharing of knowledge between agencies and join forces when it comes to research and research-based innovation. NordForsk and the Nordic Innovation Centre (NICe) have been housed on the same premises in Oslo in an attempt to link research and innovation more closely. R&I integration is also complicated by the fact that the concept of innovation is broad and can be interpreted in many ways. The first NORDERA report concluded that the differences in understanding of the concept of innovation among actors in the Nordic countries, both within and between the countries, comprise a major challenge. It is necessary to establish a common language and understanding of innovation among the key players. Innovation may be user-driven, employee-driven, idea-driven or research-driven – making it problematic to calibrate an appropriate interface between research and innovation. One way of looking at the interface is to focus on research-based innovation, which includes all forms of innovation that incorporate research as a component of the process of creating value for the market and society at large.

   With regard to the integration of research and innovation, it may be argued that the European Commission has taken the lead with the launch of a new innovation strategy – the Innovation Union. The idea rests upon a broad concept of innovation that includes the entire cycle of innovation, from research to market and market to research, and involves all actors and all regions in the innovation cycle. This thinking will also be reflected in the administrative structure. As from 1 January 2011, “DG Research” will be called “DG Research and Innovation”.

3. *Institutional complexity and small budgets.* Despite initiatives to boost the efficiency of Nordic R&I cooperation and achievements in research governance, there are still many actors involved in the distribution of the small-scale Nordic R&I budgets. There are also challenges regarding coordination of national matching funds. Although there are several examples of the successful use of common pots and co-funded programmes, the linguistic, legal and administrative differences between the countries sometimes makes the coordination process overly complex and administratively costly. In addition, it has not been ascertained whether strengthening Nordic cooperation actually promotes excellence in research. If Nordic cooperation is carried out at the expense of other kinds of valuable European or international research cooperation, it may even hinder excellence. When budgets are limited, the selection of priority areas for funding becomes a crucial task. It may, however, be difficult to achieve consensus, especially when there are competing views regarding the most appropriate

approach to research funding – top-down or bottom-up – or different interpretations of innovation. To date, no agreement has been reached on how to best operationalise the concept of "Nordic added value" in the field of regional R&I cooperation.

## KEY LESSONS FROM NORDIC EXPERIENCE

Based on the project findings and the NORDERA conference held at Hotel Metropole in Brussels on 25 November 2010, we will now highlight the key lessons that may be drawn from Nordic experience. A draft version of this final report was used as point of departure for the discussion at the conference both in plenary sessions and in working groups focusing on topics related to funding models, research infrastructure, excellence, mobility and the relationship between research and innovation.

## EXCELLENCE IN RESEARCH AND MOTIVATION FOR CROSS-BORDER COLLABORATION

All of the Nordic countries are actively involved in cross-border R&I collaboration. Firstly, according to a report by the Technopolis group, Nordic researchers primarily pursue collaboration to create networks and gain knowledge benefits. Attractive programmes attract researchers. Participation in EU schemes is generally not commercially motivated at the researcher level. Secondly, the Technopolis group found that Nordic researchers tend to seek out other Nordic partners for EU projects. The researchers usually cite cultural factors, geographic proximity, expertise and shared (often Nordic) interests as their primary motives for doing so. Thirdly, the participation rates of Nordic researchers could be improved, and the Nordic countries need to enhance participation in joint initiatives at the programme level. According to the Technopolis group, one explanation for low participation rates may be that awareness of new EU initiatives is limited. This could probably be remedied by notifying potential participants about existing opportunities, as well as by providing advice and support to facilitate involvement (NordForsk 2010a).

Although Nordic researchers are actively involved in cross-border collaboration, it is difficult to ascertain whether physical and long-term mobility has increased or not. This is due to the lack of statistics, but also to the fact that there are many different forms of mobility (physical and electronic mobility as well as long and short-term mobility) in a globalised world. It is also uncertain whether physical mobility is actually an important factor for ensuring excellence in research.

### *DISCUSSION IN THE WORKING GROUP: MOBILITY PROMOTES EXCELLENCE*

In the working group on Excellence and Mobility, Riita Mustonen, Vice President of the Academy of Finland, stated in her introduction that there are no borders in research and that young scientists can only develop through mobility and international cooperation. However, she also emphasised that there are different types of mobility and that, in the age of globalisation and new technology, mobility is no longer restricted to physical or long-term mobility. While other forms of mobility may have increased, physical mobility has decreased in recent years. In her view, physical mobility is still important because it is a means of transporting and sharing multicultural knowledge that is essential for the development of young scientists. One way of encouraging this type of mobility is through the development of high-quality joint research infrastructures that attract researchers of different nationalities. She mentioned the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany, as one interesting example, and we would also like to add the European Spallation Source (ESS) in Lund, Sweden, as another.

During the discussion, questions were raised as to whether all types of mobility actually promote excellence. It was emphasised that open access and free movement of data are more important than physical and long-term mobility. There seems to be general consensus that international cooperation at the researcher level is necessary for generating excellence in research. One discussion participant encouraged the development of tailored instruments to motivate young researchers to participate in international research conferences rather than focusing on facilitating permanent mobility.

In his introduction, Martin Hynes, Director of the Irish Research Council for Science Engineering and Technology, focused on the importance of promoting mobility between academia and industry. Such mobility will promote both innovation (new patents) and excellence in research (more high-quality publications). He stated that cultural conflicts and communication problems are often the main challenges for cooperation and mobility between academia and industry. He further argued that Ireland has good experience in developing this type of cooperation on the basis of cluster models.

Finally, it was argued that we still do not have a clear answer to a fundamental question, namely whether regional cooperation at the agency/funding level actually helps to generate excellence in research. Can regional and sub-regional cooperation, with all of its conditions and restrictions, actually pose an obstacle excellence in some cases?

### COMMON POT AND FUNDING MODELS

Why have the Nordic countries managed to overcome some of the obstacles that often hinder common pot activities elsewhere? Why have the Nordic countries succeeded in creating a joint programme that uses a common pot (the TRI) in such a short period of time? One explanation may be that the programme was launched by the prime ministers of the Nordic countries, bestowing massive political weight on the process and giving the national funding agencies less room to withdraw. Moreover, the programme was built from scratch, and it may be easier to establish new programmes rather than to merge existing programmes and initiatives. Another key factor is that the Nordic funding model is based on voluntary participation. The model calls for two-thirds national funding and one-third Nordic-level funding. The national research councils have the freedom to decide whether to participate in a co-funded programme, and normally choose to invest in a joint action when there is obvious Nordic added value to be gained.

As mentioned earlier, Nordic R&I collaboration takes place within a strong institutionalised framework built on long traditions and mutual trust, which encourages participation in joint actions and use of common pots. During the interviews conducted in connection with the first NORDERA report, more or less every respondent mentioned the word “trust” – both when describing Nordic R&I cooperation as a whole and when explaining Nordic achievements in the context of joint programming. Such trust is of course linked to the fact that there is a Nordic cultural community and a certain common identity. Interviewees also emphasised that the Nordic countries have similar academic levels and standards, which facilitates the creation of joint programmes and common pots (NordForsk, 2010b).

### *DISCUSSION IN THE WORKING GROUP: TRUST AND FLEXIBILITY COUNTS*

In her introduction, Lena Gustafsson, Vice-Chancellor of Umeå University, emphasised that the Nordic countries cannot isolate themselves from the rest of the world and must act as an integral part of Europe. She presented the common pot funding model as used in the TRI, and argued that the use such a funding model has a structuring power. She pointed to the importance of political will as a driving force for achieving results in joint programming and encouraging the use of a large-scale common pot.

Giorgio Clarotti of DG Research presented the background and guidelines for the joint programming process facilitated by the European Commission. He also elaborated on the advantages and disadvantages of different funding models such as virtual common pot, real common pot, and balanced and mixed common pot models. He further argued that successful joint programming is dependent on effective and viable mechanisms that can be applied uniformly by all participants.

Mark Boden, JRC Action Leader for “ERA policy mixes, joint programming and foresight” at the Knowledge for Growth Unit at the IPTS, summed up the discussion by pointing to trust, cultural proximity, flexibility and good governance as possible reasons for Nordic success with joint funding

and common pot, and he mentioned the TRI as a good example of this. He referred to the second NORDERA report, which reveals that the common pot model is used relatively little under the ERA-NET scheme. However, the report also shows that the ERA-NETS with intense Nordic participation have used a real common pot slightly more often than the networks with no Nordic participation.

## DEVELOPING COMMON RESEARCH INFRASTRUCTURE

Cooperation in the area of infrastructure is of significance to the Nordic countries for several reasons. Firstly, small countries have economic incentives to cooperate in this area, as important research infrastructure requires large-scale investments. Secondly, such infrastructure will enhance the Nordic countries' position as a dynamic, attractive research partner for the wider international research community. Finally, a high degree of coordination of research infrastructure policy is vital if the Nordic countries are to have an impact on the ESFRI[7] process. Against this background, the Nordic countries have taken initial steps to intensify cooperation on research infrastructure. During the past three years, expert groups have been appointed and workshops and conferences have been held to address the issue at the Nordic level, and a policy brief has been produced (NordForsk, 2008b). Networks and research programmes have also been established to strengthen Nordic cooperation on infrastructure. The NordForsk policy brief from 2008 provides an overview of current research infrastructure policies in the Nordic region and Europe, and evaluates the scope of increased Nordic coordination. The report concluded that efforts to realise closer Nordic cooperation are well underway, but that there is considerable room for improvement of coordination and joint activities (NordForsk, 2008b).

### *DISCUSSION IN THE WORKING GROUP: THE IMPORTANCE OF BOTTOM-UP APPROACHES*

Carlo Rizzuto, former chair of ESFRI, emphasised the importance of top-quality research infrastructure. He compared research infrastructure at the international level with Olympic stadiums – as arenas for the best scientists to produce the best results. He argued that if we want to attract the best researchers, we have to develop new technologies, measures etc. He presented the vision of ESFRI, which is to provide Europe with the highest calibre infrastructure needed in any scientific environment and in all fields of research. He argued that the main obstacles for implementing the ESFRI Roadmap are the pooling of financial resources at the European level, in particular for covering operational costs.

Hervé Péro, Head of Unit on Research Infrastructure in DG Research, presented an overview of EU actions on the ESFRI Roadmap. He also pointed out challenges for implementing the roadmap. The major obstacles, in his view, are the financial constraints and coordination problems between participating states. He saw a great need for professional management and best practices.

The panel rapporteur, Professor Lars Börjesson of Chalmers University, summed up the discussion by stating that the Nordic region is stronger in this area than is often assumed. He mentioned several achievements in terms of both Nordic and European installations located in the Nordic region. He also argued that there is great potential for further developing cooperation on research infrastructure. He acknowledged the importance of improving coordination at the Nordic level, as the countries are small and have little impact individually. He therefore raised the question of whether there is a need to establish a Nordic roadmap for research infrastructure. He believes that trust, a bottom-up approach, open access and the existence of important data registries, including biobanks, will facilitate closer cooperation on infrastructure in the Nordic region.

## TOWARDS A BETTER INTEGRATION OF RESEARCH AND INNOVATION

[7] European Strategy Forum on Research Infrastructure

The NORIA concept is rooted in the willingness to enhance research-based innovation. One aim of launching the NORIA initiative was to strengthen cooperation between research and research-oriented innovation. The initiative recognises that a lot of the basic research being conducted may become very important for industry and employment in the very near future. It also points out that there is a clear interface between applied research and basic research and that both sides share overlapping areas of strategic interest.

It has proven difficult to integrate research and innovation policy successfully in the Nordic region. As discussed above, this is due in part to differences in approaches and mindsets among the players on the R&I scene. It appears that the lack of cooperation is a direct consequence of segmentation, which is evident not only within the Nordic Council of Ministers, where research and innovation are the responsibility of two different institutions, but also at the national level, where R&I agencies report to different ministries. More profoundly, there are two very different innovation cultures at play. Only a small portion of innovation activity is closely linked to research activity; for the most part there is a wide gap between the two.

Although the Nordic countries are struggling to integrate research and innovation, there are some success stories, most notably the Top-level Research Initiative (TRI).

*DISCUSSION IN THE WORKING GROUP: THE NORDIC REGION AS A STEPPING STONE?*
Marja Makarow, Chief Executive of the European Science Foundation, argued that researchers can contribute constructively to meeting societal and political demands. However, this will require a reform of the university sector, as it is, in general, designed primarily for teaching and education. Ground-breaking innovation must be developed on a wide-scale. Institutions such as NordForsk and the Nordic Innovation Centre and the German/Austrian DAC are essential tools/instruments in this context, as they are based on mutual trust and may serve as a stepping stone to something larger.

Isi Saragossi, Director of DG ENTR, focused on policy issues, the EU approach and relations between the Nordic region and the EU. He argued that lessons may be learnt from small-scale Nordic cooperation in this area. Pooling of funding for research is difficult, but it has been done at the Nordic level. In his view, the Nordic member states could be drivers for the development of new instruments linking research and innovation at the EU level.

Ivar H. Kristensen, Managing Director of the Nordic Innovation Centre, argued that a broad approach to innovation is needed. Innovation is not only research-based; companies engage in innovation activities every day using existing knowledge. All types of innovation are needed to deal with the financial crisis and increase competitiveness. He argued that a common understanding of innovation needs to be established and that different approaches need to be used to develop effective solutions for utilising our knowledge and resources. However, he pointed out that in terms of global competition, it is more important to find methods and instruments to increase cooperation between researchers and boost industrial innovation based on mutual understanding and recognition of the different approaches to innovation than to establish a single “scientific” definition of innovation.

During the discussion, it was argued that innovation is multidimensional and that the linking of research and innovation has to be seen in relation to value propositions. It was pointed out that while there are many similarities between the Nordic countries, the individual national research and innovation policies are still very different. Linking research and innovation is one of the many challenges being met in different ways in the Nordic countries. Finally, it was argued that no region has greater potential for close cooperation between the spheres of research and innovation than the Nordic region, but that there are few good examples of this thus far.

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# The potential impact and the main dissemination activities and the exploitation of results

## *A. Potential impact*

NORDERA supports the coordination of national research programmes and encourage joint programming. By studying the experiences of the Nordic region in this field, the project seeks to identify best practice on research programme coordination and assess how the lessons learnt can be of value for the further development of the European Research Area (ERA) as well as the Nordic Research and Innovation Area (NORIA) as an integral part of ERA.

In particular, NORDERA has a potential impact on some of the five initiatives initiated by the Commission following the debate on the ERA Green Paper. The ERA Green Paper reviewed progress made in realising ERA, where progress still needed to be made and raised a series of questions for debate. The Commission sought answers to these questions and solicited further new ideas in a public consultation which lasted from 1 May 2007 until 31 August 2007. Following the public consultation results, the Commission and Member States are launching in 2008 new initiatives to develop ERA, including an enhanced political governance of ERA, called the "Ljubljana Process", and five initiatives on specific areas of the ERA Green Paper.

These initiatives address researchers' careers and mobility, research infrastructures, knowledge sharing, research programmes and international science and technology cooperation. They aim at establishing durable partnerships with Member States and stakeholders – including business, universities and research organisations – to develop the ERA jointly in their specific areas of focus. A description of how NORDERA contributes to the achievement of the Ljubljana process and some of the five initiatives is provided in points 1-6 below.

The NORDERA project investigated how far the Nordic R&I cooperation has come in attaining some of the goals set by the EU and points to some possible lessons learnt. In addition to the overall question on how the Nordic experiences may contribute to enhancing the overall governance of ERA, the following research questions guided the analysis that was undertaken in the first NORDERA report:

- What are the Nordic experiences when it comes to funding models and joint activities such as joint programming and a common pot?
- What has been done to increase the amount of common research infrastructure in the Nordic region?
- Has the mobility of researchers increased both within and outside the Nordic region?
- Is the Nordic R&D cooperation stimulating more excellence in research?
- To what degree is there knowledge-sharing between industry and academia in the Nordic region?

It is important to note that the impact of NORDERA goes in ‘both directions’; results will feed directly into the implementation of the Ljubljana process and the five initiatives but it will also feed directly into the improvement and further development of the Nordic Research and Innovation Area – NORIA as a vital part of ERA. A description of the NORDERA’s impact at the Nordic level is provided below.

*How will NORDERA contribute to enhancing the overall governance of the ERA?*
The Council of the European Union and the Commission have initiated a process aimed at enhancing the overall governance of the ERA. The process was formally launched by a Council Resolution adopted on 30 May 2008: *Council Conclusions on the Launch of the "Ljubljana Process" - towards full realisation of ERA* and has been further developed in the Vision 2020 and the Innovation Union Initiative. The "2020 Vision for ERA" states that all players will fully benefit from the "fifth freedom" (free movement of researchers, knowledge and technology) across the ERA and that the ERA will provide attractive conditions and effective, rational governance for carrying out research and investing in R&D intensive sectors in Europe by 2020. The Nordic Research and Innovation Area (NORIA) was established to make the Nordic region a leader in R&I, thus mirroring the objectives of the ERA to a large extent. The results of the NORDERA analysis may feed into the continued process of developing the governance of ERA, by illustrating what can be achieved but also by highlighting constraints and limitations associated with cross border research cooperation.

A possible impact of this project might be a simplification of funding instruments as well as application and reporting procedures. The NORDERA project has shown that there is significant sub-regional R&I co-operation in the Nordic region. There should be a great potential for a better coordination and/or division of labour between the various levels of governance (Member States, sub-regions like the Nordic region and the ERA). Such a division of labour in Europe can be vital to achieving the ERA objectives.

On a more practical level the ERA might benefit from the many experiences from different reforms and experiments in research governance that have taken place in the Nordic region in the past five years. For example, in 2007 the Nordic prime ministers decided to establish a new globalisation agenda for Nordic research collaboration. As a result, some 14 globalisation projects are now being implemented, the Top-level Research Initiative (TRI) on climate, energy and the environment being the most important example. This might have transfer-value to the EU in different ways.

*How can the NORDERA project contribute to the development of efficient funding models in ERA?*
The Nordic region has had notable success with the use of common pots, gaining valuable experience in relation to the successful establishment of common pot arrangements and various other funding instruments and programmes in recent years. In fact, the formalised Nordic cooperation in itself may be viewed as a common pot with no fair return. There are several examples of co-funded programmes that use the common pot model (NordForsk, 2009b).

The above-mentioned TRI is the most recent, most ambitious example of such a programme. The TRI is also the only Nordic programme that conforms somewhat to the EU definition of "joint programming".

Another programme that might have transfer value to the ERA is the Nordic Centres of Excellence scheme. A *Nordic Centre of Excellence* (NCoE) is a network of existing, outstanding national research groups and units that form a virtual centre with common objectives and management and a joint research plan. National sources are expected to provide basic funding for the NCoEs, with Nordic support as a supplement to such funding. The NCoE Programme is an effective means of bringing the "crème de la crème" of Nordic research into the European research arena, and Nordic researchers may find that their experience with Nordic research cooperation is a significant advantage when competing against or collaborating with other European research units within the ERA.

One of the main conclusions of the NORDERA project is that it appears to be easier for Nordic funding agencies to enter into joint funding and common pot agreements than it is for their European counterparts. A look at the joint calls under the ERA-NET scheme reveals that the common pot model is seldom used. It is, however, interesting to note that the ERA-NETS with intense Nordic participation use a real common pot more often than the networks with no Nordic participation

{IPTS/JRC, 2009 #1299}. This may be due to the fact that the Nordic countries are relatively homogeneous, have shared views on key challenges, and have a long history of cooperation based on mutual trust and recognition. The Nordic experiences with the use of real common pot can be of great value for the EU.

*How can the NORDERA project contribute to the development of European cross-border research infrastructure?*
There are a number of examples of joint Nordic research infrastructures, such as the NORDUnet, the Nordic Data Grid Facility and the Nordic Optical Telescope. It is also interesting to note that two major European research infrastructure projects (the European Spallation Source and EISCAT) are located in the region. Nevertheless, there have been few coordinated research infrastructure initiatives launched or implemented under the Nordic umbrella, due in part to the fact that these require very large-scale investments.

While there still are few examples, there is a high level of political willingness to join forces within this area. The added value for small countries that cooperate more closely in this area is obvious. Localising important research infrastructures in the Nordic region could also make the region more attractive to international and European researchers. It is worth mentioning that there are some important initiatives underway, such as the e-Science initiative. It might be a great potential for further development regarding common research infrastructure and the Nordic cooperation in this area might facilitate the implementation of different parts of the ESFRI roadmap.

*How can the NORDERA project contribute to increased excellence and cross border mobility within the ERA?*
The NORDERA project has proved that Nordic researchers score high on international citation indexes and in terms of the number of scientific publications (Schneider, 2010). In addition, the NCoE Programme is strengthening already strong research groups, and most of the centres have attracted attention far beyond the boundaries of the Nordic region.

Research has also shown that the Nordic countries are active participants in European networks. A study on Nordic participation in the EU Framework Programmes (FP6 and FP7) commissioned by NordForsk {NordForsk, 2009 #1298} revealed that the Nordic countries have been actively and extensively involved in FP6 and in FP7 to date. Taking into account the relative size of the Nordic countries and their RTD bases, the study found that Nordic performance has been excellent. The Nordic countries are among the most successful when general scale factors such as GDP and population are used. Overall Nordic success rates have been above the FP6 and FP7 averages {NordForsk, 2009 #1298}. Nordic researchers have taken part in almost one-third of the projects and account for almost 10% of total EU funding allocations. It is also interesting to note that Nordic researchers have taken an active, often central role, in their FP projects. Nordic coordinator rates are above the overall averages for FP6 and FP7 (NordForsk, 2009a). The number of participants from Nordic funding agencies taking part in Joint Initiatives is also high. According to a NORDERA report, the Nordic agencies participate in the majority of such EU initiatives {IPTS/JRC, 2009 #1299}, and their participation in the ERA-NET scheme[8] is higher than the Member State average.

The fact that the Nordic researchers score high on excellence make them attractive collaboration partners within the Framework programme and thereby contributing to greater excellence and cross border collaboration within ERA.

*How can the NORDERA project facilitate integration of and cooperation between research and innovation within ERA?*

[8] The objective of the ERA-NET scheme is to step up cooperation and coordination of research activities carried out at the national or regional level in the Member States and Associated Countries through the networking of research activities conducted at the national or regional level and the mutual opening up of national and regional research programmes.

Although successful integration of research and innovation policies is a goal of Nordic cooperation and a key element of the NORIA concept, the Nordic region is still struggling to find effective, rational models for integrating R&I policies. Several ongoing Nordic projects are seeking to promote knowledge-sharing between academia and industry. Interestingly, all of the main Nordic institutions (NordForsk, Nordic Energy Research and the Nordic Innovation Centre) are funding projects of this kind. Nevertheless, it has proven difficult to integrate research and innovation successfully. The key challenge is to increase the sharing of knowledge between agencies and join forces when it comes to research and research-based innovation. R&I integration is also complicated by the fact that the concept of innovation is broad and can be interpreted in many ways. Differences in understanding of the concept of innovation among actors in the Nordic countries, both within and between the countries, also comprise a major challenge. Innovation may be user-driven, employee-driven, idea-driven or research-driven – making it problematic to calibrate an appropriate interface between research and innovation. One way of looking at the interface is to focus on research-based innovation, which includes all forms of innovation that incorporate research as a component of the process of creating value for the market and society at large. It is necessary to establish a common language and understanding of innovation among the key players.

With regard to the integration of research and innovation, it may be argued that the European Commission has taken the lead with the launch of a new innovation strategy – the Innovation Union. At the NORDERA conference, Anneli Pauli presented the thinking behind this strategy. The idea rests upon a broad concept of innovation that includes the entire cycle of innovation, from research to market and market to research, and involves all actors and all regions in the innovation cycle. She also emphasised that this thinking will be reflected in the administrative structure. As from 1 January 2011, "DG Research" will be called "DG Research and Innovation".

Even though the Nordic cooperation can refer to few achievements in this area, the identification of the problem areas might be of value for the further development of the R&I co-operation in ERA.

*NORDERA will support and inform the analytical framework and scope of NETWATCH*

The current discussion on Joint Programming shows the timeliness of evidence and analysis of actual examples and experiences of trans-national RTD programme cooperation on a European level. Unfortunately, such evidence and analysis presently do not exist. The Nordic experience, however, offers a unique sample of ERA-NETs, as well as regional cooperation activities that can possibly serve to confirm and extend the analytical framework currently being developed in ERAWATCH and NETWATCH.

### *B. Dissemination*

The NORDERA project developed a communication strategy (deliverable 5.1) according to the set-up in the description of work. It presented the plans concerning the project's core objectives, the target groups, the messages, the strategies, tactics and evaluations.

The core communications objective has been closely related to NORDERA's policy objective, which is to study experiences of the Nordic region regarding research cooperation, to identify best practices and assess how the lessons learnt can be of value for the further development of the European Research Area (ERA) as well as the Nordic Research and Innovation Area (NORIA) as an integral part of ERA. This means that NORDERA has (and will continue to) communicated the results of the analysis to different targets group in the Nordic region and in the EU.

There are mainly three target groups for the NORDERA project. First, there are policy makers in the Nordic countries, in the Nordic Council and in the Nordic Council of Ministers as well as in the European Commission. Second, there are research funding organisations in the Nordic countries and

under the European Commission. Finally, there are research communities in the Nordic region and perhaps also in Europe (universities and research institutions).

The NORDERA project has produced 3 reports that have been distributed to the target groups and they are all available at the NORDERA homepage (www.nordera.org). The project findings were presented and discussed at the projects final conference in Brussels in November 2010. The conference showed that there is a great interest for discussing these issues and that there is a great potential for developing synergies between NORIA and ERA. This discussion is summarized in an edited version of the final report. The conference made it clear that many of the issues discussed need further elaboration. There will be many opportunities for that since all the Nordic institutions have collaboration with the EU on their agenda. NordForsk will, for instance, include follow-up activities within the framework of their newly adopted strategy for EU and Nordic co-operation. The NORDERA reports will be used and promoted in the follow up activities of the different partner institutions.

## The address of the project website and contact details

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