



Increased exchange in the Building Sector

Conclusive report

Bengt Nyman

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Preface

At a meeting in Stockholm on November 1, 2004 the Nordic Council of Ministers for Housing and Building together with the Ministers for Housing and Building Issues in Estonia, Latvia and Poland, decided to undertake necessary steps to implement an action plan for increased exchange in the building sector between countries in the Northern Dimension region. Later on in 2005 Lithuania also confirmed its participation in the Steering Group for the collaboration program.

In a region consisting of the Nordic and the Baltic countries together with Poland with some 70 million inhabitants there will be a potential large building market. In this region more than 200 000 new dwellings are completed each year, and the production value of renovations in the housing stock amounts to at least 17 billion euro. The value of all new construction and renovation of all kinds of buildings amounts to more than 70 billion euro per year, of which housing represents nearly half.

It was assumed that an increased exchange between the countries concerned will promote competition in the housing construction markets. High housing costs are a problem in many countries. High production costs and building prices lead to higher housing costs which effect weak groups in the society. The causes of high costs include insufficient competition for both contractors and materials, due to among other reasons various types of entry barriers to the market. It is therefore an important housing policy goal to reduce existing entry barriers and to stimulate competition in order to reduce costs.

The Action Plan focused on opportunities for and barriers to an increased exchange in the building sector and dealt only with issues that are sector-specific. In other words there are also other important problems to solve for a well-functioning exchange in the business sector, such as administrative problems related to customs and taxation, rules for establishment of companies, and others not discussed in this context.

The process initiated by the Action Plan should be seen as the first step on the road towards increased integration of the construction market, and it can be expected to be a long process. It has been emphasized that it is of crucial importance that the business sector in each one of the countries have access to easily accessible information on the markets in other countries if the ambition for an increased exchange will be realized.

The intention of the Action Plan was to identify a number of measures that can, in an initial round, contribute towards improving co-operation and interaction between EU and EEA countries in the Northern Dimension region. The countries concerned intended to deepen their collaboration within the framework of regional co-operation in the EU and with all

respect to the EU's legislation. At the same time, it was accepted that there will continue to be differences between the countries, since national considerations limit the possibilities for special solutions for the building sector and housing construction.

Considerable barriers and challenges to an increased exchange in the building sector exist between the countries. Many initiatives and a wide range of measures will therefore be required to facilitate entry to the new markets and thereby stimulate increased competition in housing construction. In view of the challenges, the collaborating governments jointly promised to take the initiative to conduct, or other-wise to participate in the decided activities. However, it would not be possible to realize these initiatives without the active participation of the building sector's actors and organizations, authorities concerned, and research and development institutions.

The initiatives were by no means exhaustive and comprised in the initial phase only a limited selection of possible measures for the purpose of setting a development process in motion. Integration and co-operation between these countries will be a long-range process that will challenge the building sector's actors and will therefore require new commitments on their part – even without the participation of the governments.

This conclusive report financed by the Swedish Government gives a detailed review of the Action Plan and summarizes the obtained results of the work carried out during the period 2005–2008. The report also gives some proposals for further co-operation discussed at a final seminar in Stockholm in June 2009. These proposals are mainly based on the results of projects decided by the Steering Group for the program where all participating countries as well as some other interested parties have been represented. The Steering Group has approved the report by a decision per capsulam.

Stockholm in September 2009

Bengt Nyman

Program Coordinator

Summary

The enlargement of the EU in 2004 to include new member states in the Nordic region's adjacent area created a potential for increased competition in the building sector within the entire region. To exploit the situation the Nordic Council of Ministers initiated an action plan developed in close co-operation with concerned Ministries in the Nordic and the Baltic countries and Poland. The vision was to enable a more successful housing policy in all the countries concerned and benefit weak groups in the society by reducing entry barriers to national construction markets and stimulating competition in order to reduce costs and building prices.

A prerequisite for increased competition is the elimination of entry barriers to the market. The purpose of the EU's internal market is that goods, services, capital and people can move freely across the national borders. But in practice, the internal market is not yet fully implemented in all respects, and there are still many barriers, in the building sector among others, to free mobility between current member states, including signatories of the EEA. The fundamental purpose of the Action plan was to improve the opportunities for increased cross-border exchange, and to devise a political plan calling for measures to stimulate such exchange. These measures include making it easier for the market's actors to undertake assignments in other countries than those in which they normally do business.

Analyses show that there are a number of formal and informal barriers preventing entry into new construction markets in countries around the Baltic Sea. The challenges are therefore considerable and will require a wide range of measures to stimulate increased cross-border exchange for the purpose of increasing competition. The main challenges focused in the Action plan are

- Lack of information about foreign markets and market conditions;
- Differences in building sector regulations, and
- Restrictions on labor mobility.

In view of the challenges facing the building sector, the collaborating governments jointly promised to take the initiative to conduct, or otherwise participate in the following activities.

- To make market information and information on national regulations accessible to potential actors on the market;
- To expand the basis of experience and newfound knowledge in housing construction;

- To undertake a comparative analysis of regulations within the building sector intended to serve as a basis for deliberations on possible harmonization;
- To make it possible to compare competency requirements imposed on certain actors in the building process, and
- To establish a network for joint research and development on issues relevant to the plan of action.

When deciding on the Action plan the governments also laid down an organizational framework for the collaboration with a Program Coordinator and a Steering Group. The Steering Group then decided on guidelines for Working Groups connected to the projects. The Ministerial meeting did not allot any financial resources for the Program and a main task for the Steering Group has been to assist the national processes on financing of the projects. Over the years 2005–2008 the Steering Group has spent in total DKK 5.161.000 on projects and program coordination. About two thirds (63%) have been financed by the Nordic Council of Ministers on a year-by-year basis and one third by national contributions from participating countries.

Another important task for the Steering Group has been to meet building industry representatives in the participating countries in order to learn about market conditions and building industry prospects in the national markets.

Some observations from these meetings seem to be common for the Building Industry in the Northern Dimension region, such as

- Shortage of skilled workers;
- Increasing labour costs;
- Grey economy as a growing problem.

Making market information accessible to potential actors

By establishing a publicly accessible knowledge database, it was assumed that actors on the construction market can obtain information about best practice on how they can overcome barriers that exist to doing business in other countries. The intention was to create a publicly accessible database with information on, among other things, best practices and regulations in countries that are of importance for actors in the building sector. In order to optimally adapt the survey of information and development of a database to the intended target group, this work should take place in close cooperation with representatives of the market's actors. The information should be aimed at small and medium-sized companies and be a part of an ongoing process.

Poland was asked to organize and to conduct this project and the Ministry of Construction there appointed a project leader from an institute under the supervision of the Ministry. Due to personal circumstances however the project leader resigned from his task after a period of preparations and it was then too late in the time schedule for the program to reorganize the work. The project description in this conclusive report is then only a proposal for the work to be carried out as the original plans could not be fulfilled.

Expanding the basis of experience and newfound knowledge in housing construction

High land prices and high costs for construction labor and building materials are a problem in many countries, especially in rapidly growing areas in the Northern Dimension region. An exchange of experience and newfound knowledge between the countries in question will be important in order to reduce construction costs and building prices. A larger and more transparent market will offer greater opportunities for new processes and forms of co-operation, new tools and methods for utilization of information and communication technology (ICT), and new materials and design solutions.

One reason for increasing housing costs is decreasing productivity in the construction sector together with high costs for construction errors. In most countries the productivity in other industry sectors in recent years has been far better. One way for increasing productivity with less construction errors would be to adopt a more industrialized mode of working. By adopting an industrialized mode of working, the one-off design work can be replaced by continuous product development in order to enhance quality and reduce costs.

Other means for increased productivity would be increased utilization of ICT. Studies show that an essential part of building and construction costs will be caused by a fragmentary building process and lack of communication among the actors. Increased utilization of ICT within the sector will be of vital importance for the possibilities to get a more rapid and effective building process resulting in better products for clients and consumers.

The long term goal of this project managed by the Forum for Building Costs at the National Board of Housing, Building and Planning in Sweden has been to broaden the experience and newfound knowledge base concerning how construction costs can be reduced, taking into consideration quality aspects and sustainable development. The purpose of a first stage was to survey, describe and analyze initiatives already taken in the Northern Dimension region countries.

A common conclusion of national descriptions on the situation was that all the co-operating countries in the Northern Dimension region have

had problems with runaway building costs and housing prices, despite a historically low rate of inflation. The causes differ, however, and in those cases where there has been a political will to halt the trend the approaches taken to address them vary.

Despite great efforts in the Nordic countries to cut costs in housing construction, however, productivity has not improved significantly in recent years and is in most cases poorer than in other sectors of industry.

For new member states, accession to the EU has led to considerable emigration of skilled labor in particular, which has been greatly detrimental to the domestic construction companies in those countries. Besides increased demand and higher prices for buildable land, the costs of housing construction are also increasing due to capacity problems at a juncture when demand is skyrocketing.

The countries in the Northern Dimension region share a common interest in co-operating for the purpose of finding new ways to reduce construction costs and share knowledge. Discussions at a seminar in 2007 showed considerable agreement on some statements as a basis for a future co-operation program to be planned for 3–5 years, like reducing the costs of housing construction, taking into consideration that quality aspects and sustainable development should be the overall goal. The building industry (including the professional owners and clients) should be involved in the activities, since it is the target group of measures aimed at achieving more efficient housing construction. The co-operation program should determine what tools government and industry need to manage the situation.

Comparative analysis of regulations in the Building Sector

In this project carried out by Sintef Building and Infrastructure in Norway (the former Norwegian Building Research Institute) the building legislation in all the nine countries has been compared and the general patterns and similarities between the countries have been focused. In addition, the project has included a case study for the control systems, as it has been considered to be an issue of high importance and with a wide range of varieties in main principles. Many of the countries are currently working on improvements of the control systems.

The free-trade principles of the EU/EEA encourage actors in the construction sector as well as in other sectors to cross borders. All the countries are now working on converting technical requirements into functional requirements, and they all work on implementing new EU-directives. Thus, the legislations are getting closer, and in all countries, the amendments made after 2000 also focus on simplifications and more flexible handling procedures.

The control systems display a variety of division of responsibilities. The Client formally has complete liability towards the authorities in all

the countries. However, in Norway the Client does not have this liability alone. There are several other actors with direct liability towards the authorities, and the authorities may use penalty reactions directly towards these actors in case they do not fulfill their liabilities. In most of the other countries, there are other actors mentioned as mandatory actors to help the Client to fulfill his obligations.

In general, the countries have qualification requirements on the central actors that are mentioned directly in the legislation. In addition, all actors must perform according to professional standards for the work they carry out. In general, the countries have some kind of accreditation systems on the actors mentioned with qualification requirements in the legislations.

The building legislations are in constant development in all the countries, both improvements of technical requirements for implementing of new EU-directives, and for other more nationally based reasons. However, three of the countries (Iceland, Norway and Sweden) have on-going processes on major revisions of their building legislations, or even completely new laws. The next aspect will be if they all are developing their building legislation in the same direction. And on a superior level, they do so.

Most of the countries focus on control systems in their amendments, and most of them also want solutions based on independent private controllers – both the countries currently having systems based on extreme private control and on extreme public control.

In the countries where handling procedures are focused, they all want simplifications and more flexibility. And in the countries where they need changes in the administrative systems, they seem to go in the same direction: Big-municipalities or better co-operation between municipalities, to secure better competence on the public officers, and better possibilities to specialize this competence.

The last aspect to be commented is the basic question for this programme: Do they harmonize their building legislation within this region? None of the countries have any intention of harmonizing their legislation with other countries in the region with the intention of increasing the interaction between the countries regarding building activities.

However, they partly look to each other when they are developing their legislations, and especially the Baltic countries and Poland are looking to the Nordic countries for inspirations. And as concluded above, they all develop their legislations in the same direction.

Validation of competency requirements on certain actors in the Building Process

Free provision of services in the enlarged European Union (EU) requires a simple and clear system for recognition of professional qualifications. In order to facilitate the mobility of service operators and to improve

public services, the EU has decided on a legislation stating some basic principles of mutual recognition. Several attempts of improving existing recognition systems and setting up constructive proposals for advanced development led to an essential new directive 2005/36/EC known as the “New directive of the general system” (hereafter the New Directive).

The new document may be considered as a consolidated framework of previously adapted directives. Principles laid down in the New Directive do not give answers to all the questions arising in practice. Interpretation of recognition procedures as well as guidelines even for key profession categories is not satisfactory explained. Automatic recognition may be required only for definite professions attributed to a comparatively narrow circle of professions.

Therefore, a detailed study of provisions existing in the building sector labour market turned out as essential. Furthermore, new opportunities uncovered by provisions of the New Directive and expressed as possibilities in elaborating a set of criteria (in the Directive entitled as a common platform) to compensate for the substantial differences identified between the training requirements in different countries underline the importance of such study. Results of the study should be considered as a prerequisite for elaboration of a common platform to promote transposition of the New Directive into national legislation.

The objective of the project carried out by the Latvian Certification Centre has been to promote increased transparency of recognition procedures, particularly making national systems easier to manage and more clear, quick and friendly to use. It has as well been important improving transparency of qualifications to ensure that customers can rely on a more comprehensive service.

Results of the project are intended to provide sufficient information on rules for free movement of qualified labour force and to make them available in all participating countries. Applicants obtaining qualification in their home country and applying for job abroad should be aware of provisions in the recipient country. Relevant administration of the recipient country should as well be at disposition and provided with procedures how to deal with different job applicants with various confirmations about their qualification.

Participating countries might be divided in two groups depending on the approach applied to guarantee safety of construction works. The first group exercises a liberal approach, based on mutual recognition of education and voluntary certification of engineering and technicians professions (Denmark, Finland, Iceland and Sweden). The second group apply a strict approach requiring permit to the market only by an approval or certificate (Estonia, Latvia and Lithuania). The liberal system is the most attractive from the point of view of facilitating mobility of professionals, which is also the key objective of the project and of global importance for the EU. Safety of construction works in this case is secured by entrusting

responsibilities to supervision operators, building developers and building authorities.

The project also gives a proposal on how the work on recognition problems may be continued. The goal of extending the research would be formulated as development of prerequisites (approach, structure, technological task) for a data base on recognition of professional qualifications in the building sector. The work on this project has proved urgent need for information in electronic media (internet, down loadable data base, etc.). Experience of Denmark has demonstrated a possibility to collect and store information on the subject, which could be easy available by the Internet.

It is possible to build up a regional recognition system in civil engineering in different ways, for, example, to lay brick by brick (each country separate) or by heated discussions of a teamwork. Obviously, the second approach would be most effective, as resulting an outcome of a teamwork includes all advantages of this approach. The essence of the project actually is close to this goal – to find out common principles for harmonization of recognition procedures at least in the Northern Dimension region. Recognition systems of this region are substantially different, as of quite liberal requirements (Scandinavian approach) down to approval procedures by state authorised certification bodies (Baltic approach). Therefore, to harmonize these procedures would be considered as a great challenge.

Establishing a network for joint R&D relevant to the issues in the Action plan

Co-operation and exchange of knowledge are important premises for trade to be facilitated and mobility and cross-border construction activities to be stimulated. R&D plays an important role in this context by contributing with conducting survey, sharing information and developing new knowledge.

A larger and more transparent market will offer new opportunities for R&D in new processes and cooperation forms, new tools and methods for utilisation of ICT, new materials and design solutions. Thereby providing new opportunities for increasing productivity in the construction and building sector as well as obtaining a higher degree of understanding and fulfilment of user and society needs in buildings and the built environment. In addition this will support development of a more sustainable construction and building sector and improve the innovation up-take in the sector.

A joint network for R&D in the Northern Dimension region will strengthen the research capabilities and possibilities for joint research projects utilising the regional advantages. Further it will provide a plat-

form for influence on and success of the European research programmes and consideration for a joint European Research Area (ERA). In particular it will support and strengthen the possible outcome of the European Construction Technology Platform (ECTP) for the region.

The overall goal of the so called Nibcor project carried out by the Danish Building Research Institute has been to develop and establish a co-operation programme for a regional network for joint R&D in building and construction relevant to the issues in the Action plan.

The project has been intended to be fulfilled in three phases. The objective of the first phase was to develop a co-operation programme. The objective of the second phase was to establish a regional network, that could contribute to identification of research challenges, dissemination of knowledge and to strengthen the research co-operation.

The objective of a third phase (if any) will be to support the running of a regional network for joint R&D in building and construction, and thereby supporting identification of research challenges of common interest, dissemination of knowledge and strengthening the research co-operation in the region.

Developing and establishing a co-operation programme for a regional network for joint R&D in building and construction has been identified as a central part. However co-operation with relevant networks and funding programmes will be an important part of the Nibcor project. In addition a joint R&D network will strengthen the research capabilities in the region providing an excellent platform for influence on and success in the regional and European research programmes.

Through a workshop and correspondence with a national member of each country in the Northern Dimension region three research areas were identified as key focus areas for Nibcor.

- Meeting client and users requirement;
- Transformation of the Construction Sector;
- Digital Built environment.

Further an initial screening of research partners in the Northern Dimension region has given a first overview of the research partners. This shows a potential for an increased R&D co-operation both with partners with similar and with complementary research competence.

Phase 2 of the project included an activity plan for establishing a regional network for joint R&D, covering

- Vision and research areas – Confirmation of key focus research areas;
- Mapping of research partners and barriers for cooperation;
- Research project portfolio preparation – from exchange of ideas to support and facilitate combined research initiatives.

Central in Phase 2 has been the completion of a workshop for stakeholders in the building industrial complex, including firms, researchers and administrators to identify central themes for research and development. A home site for the Nibcor project was established as well, for information and communication between stakeholders in the sector.

Phase 3, concerning activities to support and facilitate the network as well as completion of R&D projects with commercial potentials for the sector has not been completed, but funding has been sought for without success so far.

Proposals for further cross-border co-operation

A conclusive seminar on a draft version of this report was organized in Stockholm in June, 2009. At the seminar completed projects of the Action plan program were reported and discussed. Proposals for further collaboration were also discussed as one task for the Steering Group and the Coordinator has been to propose further measures for cross-border co-operation to remove entry barriers to the national markets for housing construction, according to the Ministerial decision in November 2004.

As emphasized already in the Ministerial decision it will be of crucial importance that the business sector has access to easily accessible information on other markets if the ambition for an increased exchange is to be realized. The seminar stressed the fact that the most important project from that point of view (*Making market information accessible to potential actors*) has not been completed and that it should be of most importance to fulfil the mission with a focus on facilitating SMEs and specialized companies in the building sector.

All completed projects have generated proposals for further cross-border co-operation accepted and confirmed by the seminar as an appropriate point of departure for a plan on how to continue the cooperation. Those proposed activities are as follows.

- Finding new ways to share knowledge on how to reduce housing construction costs;
- Harmonize systems for independent control in the building legislation;
- Harmonize the procedures for recognition of competency requirements on actors in the Building Process;
- Running a network for joint R&D relevant to the issues in the Action plan.

1. The Action Plan

1.1 The Decision

At a meeting in Stockholm on November 1, 2004 the Nordic Council of Ministers for Housing and Building together with the Ministers for Housing and Building Issues in Estonia, Latvia and Poland, decided to undertake necessary steps during the period 2005–2007 to implement an action plan for increased exchange in the building sector between countries in the Northern Dimension region, notably

- To make market information and information on national regulations accessible to potential actors on the market;
- To expand the basis of experience and newfound knowledge in housing construction;
- To undertake a comparative analysis of regulations within the building sector intended to serve as a basis for deliberations on possible harmonization;
- To make it possible to compare competency requirements imposed on certain actors in the building process, and
- To establish a network for joint research and development on issues relevant to the plan of action.

The Ministers also decided

- To appoint a program coordinator with the task, together with a steering group, to undertake the necessary steps during the period 2005–2007 to implement the action plan and to report the results to the Ministers;
- To establish a steering group with participation from all participating countries, and
- To ask the Coordinator together with the Steering Group, to propose further measures for cross-border co-operation to remove entry barriers to the national markets for housing construction.

Lithuania did not take part in the Stockholm meeting but expressed in a letter of support in beforehand an interest to sign the agreement at a later time. By a letter to the Nordic Council of Ministers in April, 2005 Lithuania consequently also confirmed its participation in the Steering Group for the collaboration program.

Mainly due to some administrative problems caused by a reorganization of the NCM Secretariat, the collaboration program did not start up in

practise until fall 2005. Political instability and reshuffle of governments in the Baltic countries and in Poland have in some occasions also caused a delay of the time-schedule. In the light of a delayed program the Steering Group then decided in December 2007 to prolong the collaboration until June 2008. A final meeting of the Steering Group was arranged in Oslo in October 2008 in combination with a working group meeting for the very last project of the collaboration program.

1.2 Background to the Plan

The purpose of an action plan for cross-border co-operation in the Northern Dimension area has been to contribute towards an increased exchange in the building sector between EU member countries including signatories of the EEA Agreement and thereby to improve the Single Market of the European Union. It was assumed that an increased exchange between the countries concerned will promote competition in the housing construction markets. High housing costs are a problem in many countries. High production costs and building prices lead to higher housing costs which effect weak groups in the society. The causes of high costs include insufficient competition for both contractors and materials, due to among other reasons various types of entry barriers to the market. It is therefore an important housing policy goal to reduce existing entry barriers and to stimulate competition in order to reduce costs.

The Nordic Council of Ministers initiated the Action plan and it was developed in close co-operation between the Ministry of Economic and Business Affairs in Denmark, the Ministry of Economic Affairs and Communication in Estonia, the Ministry of the Environment in Finland, the Ministry of Economics in Latvia, the Ministry of the Environment in Lithuania, the Ministry of Social Affairs in Iceland, the Ministry of Local Government and Regional Development in Norway, the Ministry of Infrastructure in Poland and the Ministry of Finance in Sweden.

A pre-study surveying national construction markets and possible barriers as well as a set of descriptions of building sector regulations in the participating countries served as a background to the Action Plan. The descriptions of building sector regulations in the different countries have been published in a report by the Nordic Council of Ministers (*Building Sector Regulations – A background to increased exchange between countries in the Baltic Sea region*, TemaNord 2004:547). The descriptions as well as proposals for the Action Plan were discussed during a seminar in Warsaw in June 2004 with participants from the countries concerned. A draft action plan was also discussed during a meeting on Undersecretary of State level between the countries concerned in Sigtuna, Sweden in September 2004.

The Action Plan focused on opportunities for and barriers to an increased exchange in the building sector between countries in the Northern Dimension region and dealt only with issues that are sector-specific. In other words there are also other important problems to solve for a well-functioning exchange in the business sector, such as administrative problems related to customs and taxation, rules for establishment of companies, and others not discussed in this context.

The process initiated by the Action Plan should be seen as the first step on the road towards increased integration of the construction market, and it can be expected to be a long process. It has been emphasized that it is of crucial importance that the business sector have access to easily accessible information on other markets if the ambition for an increased exchange is to be realized.

The intention of the Action Plan was to identify a number of measures that can, in an initial round, contribute towards improving co-operation and interaction between EU and EEA countries in the Northern Dimension region. The countries concerned intended to deepen their collaboration within the framework of regional co-operation in the EU and with all respect to the EU's legislation. The countries initially signing the document could also along the road invite others to take part in this collaboration. At the same time, it was accepted that there will continue to be differences between the countries, since national considerations limit the possibilities for special solutions for the building sector and housing construction.

The governments in the participating countries promised to actively follow the developments on the construction market which were expected to result from an increased cross-border exchange, but without the participation of the actors and organizations in the building sector, authorities concerned and research and development institutions in the sector, the initiatives in the Action Plan would not be able to be realized. It was for that reason of crucial importance for a successful outcome that there will be an active involvement from business actors as well as from other parties in the realization of the plan.

1.3 The Vision

Reducing entry barriers to the national construction markets and stimulating competition in order to reduce costs and building prices will enable a more successful housing policy in all the countries concerned and benefit weak groups in the society. The enlargement of the EU in 2004 to include new member states in the Nordic region's adjacent area created a potential for increased competition in the building sector within the entire region. A region consisting of the Nordic and the Baltic countries together with Poland has 70 million inhabitants today, distributed among more

than 26 million households. Some 200 000 new dwellings are completed each year, and the production value of renovations in the housing stock amounts to at least 17 billion euro. The value of all new construction and renovation of all kinds of buildings amounts to more than 70 billion euro per year, of which housing represents nearly half. The economic value of the construction market is thus quite considerable, and a cost saving of, say, 3% in new construction and renovation of housing is equivalent to about 1 billion euro in the region every year.

Increased cross-border exchange leads to improved economic conditions in the local market. Economic integration between different countries in the building sector is mainly manifested in increased presence of foreign companies and employees in the domestic market, as well as increased imports and exports of building products. If this also leads to increased competition, construction costs and material prices will be reduced.

The development of the construction market in the Baltic countries in the late 1990s and early 2000s showed how the presence of foreign companies in all segments can influence domestic competition. New knowledge, new work methods and new material and design solutions were introduced to the market. Despite vigorous expansion and high wage cost increases in those countries, construction costs were not increasing faster during the early years of 2000 than the generally low rate of inflation. The annual productivity increase in the construction companies was considerable.

However, a prerequisite for increased competition is the elimination of entry barriers to the market. Entry barriers to new markets in other countries may have formal grounds and are then often referred to as “obstacles to trade”. The purpose of the EU’s internal market is that goods, services, capital and people can move freely across the national borders. But in practice, the internal market is not yet fully implemented in all respects, and there are still many barriers, in the building sector among others, to free mobility between current member states, including signatories of the EEA Agreement. For example, differences in building sector regulations can be seen as entry barriers to the market.

The fundamental purpose of the Action Plan, as well as the purpose of the EU’s internal market, was to improve the opportunities for increased cross-border exchange, and to devise a political action plan calling for measures to stimulate such exchange. These measures include making it easier for the market’s actors to undertake assignments in other countries than those in which they normally do business. It is therefore inevitable that steps must be taken based on the view that it should be as easy as possible to enter the market in question, that the rules of the game are neutral and do not favor previous actors on the market, and that the rules are easy to understand and handle.

There may also be entry barriers of a more informal character. Cultural differences in the form of different building traditions can of course

inhibit interest among construction companies in establishing themselves in new and foreign markets. Similarly, the pre-study of this Action Plan seems for example to indicate that purchasing channels for building materials primarily follow linguistic and cultural ties between neighboring countries. Other studies show that builders and construction companies are bound by tradition in their material suppliers.

The accession of the new member states to the common market in 2004 will in the long term reduce the tendency for cross-border trade to be limited by the constraints of language, culture and tradition. One way to stimulate and monitor progress towards economic integration and to speed up this process in the building sector is for the countries concerned to jointly conduct surveys, share information and develop new knowledge in areas that show what increased exchange can mean for competition. R&D may play an important role in this context. Cooperation and exchange of knowledge are important premises for trade to be facilitated and mobility and cross-border construction activities to be stimulated. Well balanced housing and urban policies and markets will also enable a more rapid process.

Together, the countries possess vast experience of different construction and housing policy measures applied to a wide variety of housing markets. The countries concerned thus have much to learn from each other in these areas.

In summary, there is a considerable potential for increasing competition in the building sector by viewing the countries in the Northern Dimension region as a common region and market for housing construction. But in order for this potential to be realized and competition to be stimulated, both obstacles to trade and informal entry barriers to the market must be reduced.

1.4 Challenges

Analyses show that there are a number of formal and informal barriers preventing entry into new construction markets in countries around the Baltic Sea. The challenges are therefore considerable and will require a wide range of measures to stimulate increased cross-border exchange for the purpose of increasing competition.

Lack of information about foreign markets and market conditions

Construction markets are generally regarded, especially within the industry itself, as highly local markets. Knowledge of local traditions and local building culture make it easier to do business. Short transport distances entail lower costs. A well-developed network and often personal acquaintance with clients, cooperation partners and key persons within

regulatory and supervisory authorities simplify the entire building process. In particular, knowledge concerning small specialist companies and other subcontractors in the locality or the region in question can be of great importance for construction costs and financial success. For these reasons, many construction companies do not even consider establishing themselves in other regions. This is in turn one reason why the industry is in most countries dominated by small and medium-sized companies.

Going outside the country's national borders is of course an even bigger step. Besides differences in language, culture and traditions, inadequate knowledge of foreign countries and market conditions there is presumably the greatest barrier preventing companies in the building sector from daring to establish themselves in a foreign country. It is symptomatic that when big companies decide to establish more permanent operations outside their home country, they generally do so by buying up construction or consulting companies on the new market that already have the knowledge and expertise required to succeed. Not even in the Nordic countries, where differences in language, culture and working conditions are small, is it common for small and medium-sized companies in the building sector to regard a neighboring country as a part of their natural market. Large international companies with considerable capital resources, as well as companies that operate in border districts, comprise exceptions in this respect.

Information regarding markets and market conditions largely has to do with the competitive situation, the development of housing construction, the availability and type of assignments, factor prices and cost levels, and other economic conditions. But it also has to do with information on national rules and regulations. The survey of regulations in the building sector in countries around the Baltic Sea shows great differences between the countries.

Differences in building sector regulations

All countries have their own building rules, which are usually a product of local and national building traditions with a gradual adaptation to new experience and new-found knowledge. A new feature in recent years is the influence of the European harmonization work on national rules. The national building rules are in many cases also a part of an integrated whole in the country in question which also includes national regulations for supervision and inspection, competency requirements on different actors in the building process, and requirements on insurance for construction companies and projects, etc.

A report for the Nordic Council of Ministers (*Comparison of the Building Legislation in the Nordic countries*, TemaNord 2004:526) shows that at least in the Nordic countries the regulations that exist in each individual country comprise a logical structure composed of indi-

vidual components which together create a whole – a strategy – for how the country in question intends to meet the political requirements on housing and other buildings produced in the country. A number of domestic factors influence the choice of this strategy. As a rule, the strategy represents a carefully chosen balance between freedom of the market in order to stimulate creativity on the one hand and the efforts of the government authorities to ensure that political requirements on the results are met on the other. The desire for a holistic approach also means that changes in the conditions for individual components of the building process can have consequences for other components. As a rule, the manners in which the authorities in many countries regulate the building process is rooted in how the planning work is organized in each country and to what extent local physical plans or detailed development plans already exist when new development projects are planned.

According to the descriptions of the building sector regulations, the countries taking part in this joint project show considerable differences in terms of the conditions for the actors in the housing construction market and the environment they operate in. The differences in the detailed rules governing the construction process are particularly clear, where some of the Nordic countries have a conscious ambition to delegate responsibility for the individual parts to the builder and his co-actors, while other countries still try to impose government regulation and control over building. At the same time, in those countries with heavy government regulation, the authorities are required to act with certain deadlines so that the process will not be delayed.

One of the issues explored when describing building sector regulations has been requirements on registration of companies and persons in key positions, as well as the competency requirements that are imposed on certain actors in the building process. Considerable differences exist here as well. Some countries require registration of companies involved in the building process, others don't. In some countries there are competency requirements on certain actors, in other countries special competency is required only for certain types of specialist construction work. There are also different combinations of company registration procedures and competency requirements.

Insurance and guarantee conditions also differ. Some countries require that all actors involved have liability insurance or that the building object should be insured. In other countries there are no regulatory requirements, but market conditions are such that the client or financial backer normally makes such requirements. In some countries the guarantee periods are not regulated, but standard contracts in these markets stipulate a guarantee period. In other countries, the minimum guarantee periods are regulated.

The differences are in themselves a challenge for an increased exchange between the countries. Companies wishing to establish them-

selves in another country or even in several other countries must familiarize themselves with new regulatory systems in order to gain access to new markets. The requirements on registration of companies in some countries can even be perceived as discriminatory by companies by countries where such requirements do not exist, especially if the registration of foreign companies does not provide the same access to the market as the registration of domestic companies. The requirements on temporary registration of companies from other countries will be challenged when the *Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market* will be realized.

The second challenge in this context concerns the question of to what extent government regulation of individual parts of the building process comprise a barrier to creative development and increased efficiency in housing construction. The point of departure for the Nordic countries, which have imposed considerable responsibility on the builder and his co-actors in the building process, has been that increased freedom for the market's actors contributes to better and cheaper housing.

Restrictions on labor mobility

An important prerequisite for being able to improve competition in the building sector is a well-functioning free mobility of labor across national borders. In the Nordic countries, it is not unusual for both construction workers and highly educated white-collar employees within the building sector to work in countries other than their home countries. Especially when two neighboring countries have been in different phases of the business cycle, it is not un-common for workers from one country to accept employment in the neighboring country during periods of high unemployment, which has been facilitated by the attempts that have been made in the Nordic countries to harmonize labor market regulations. In order to stimulate increased mobility of the labor force between countries in the Baltic Sea region, the same liberal regulations should be striven for in the entire region.

With the accession of the new member countries to the common market on 1 May 2004, the discussion of labor mobility was mainly focused on the risk of disturbances on the national labor market in the Nordic countries. The reason for this would be that labor from the Baltic countries and Poland would tend to come to the Nordic countries to take advantage of the much better wage conditions and generous social insurance systems there.

The old and new member states in the EU also agreed on transitional provisions for the period up to 2011, during which time the old member states can choose between two different options to restrict access to their domestic labor markets. One option entails that the country maintains its former national legislation requiring work permits in up to three stages of

2–3 years each. The second option entails that the old member states can, retroactively during the transitional period, adopt so-called safety mechanisms if a free mobility of labor leads to serious imbalances on the labor market within a given region or a given professional or vocational field. In such cases, the countries can, for example, require work permits for immigrant workers.

The Nordic countries took different positions as far as the application of transitional provisions is concerned. For example, Finland choose to maintain its national legislation for a two-year period, while Sweden did not imposed any restrictions on the free mobility of labor.

The researchers Christofer Lindgren and Per Kongshøj Madsen have, in a report for the Nordic Council of Ministers (*Jobs for All – A Nordic Profile on an Open European Labor Market*, Nord 2003:13), shown that fears of a large immigration of labor from the Baltic countries and Poland to the Nordic countries are probably exaggerated and that a large part of the immigration will take the form of commuting or temporary relocation. The authors also believe that a common labor market for the Nordic countries and the new member states has considerable advantages. Given the demographic trend in the Nordic countries, there is for example a great risk of a general labor shortage in the years to come. Even today there is a shortage of certain types of labor in the Nordic countries, such as engineers.

Other studies show that there is, or will be, a shortage of different categories of skilled tradesmen in the construction industry in the Nordic countries.

In this context, the above named researchers bring up another question of great urgency for those countries that impose qualification requirements on certain actors or professional categories within the building sector. How do you create a system for validation, i.e. assessment of the individual's true qualifications, in cases where foreign educational programs or work experience do not fully correspond to domestic professional requirements? The researchers point out that one problem for many immigrants is that the foreign educations often differ from the domestic ones in some respect, preventing their acceptance in the new country. Furthermore, work duties in the same profession sometimes differ between different countries, as does how the work is organized. Acquired skills in a certain country are not always directly transferable to another.

1.5 Initiatives to stimulate increased exchange in the Building Sector

Considerable barriers and challenges exist to an increased exchange in the building sector between countries in the Northern Dimension region. Many initiatives and a wide range of measures will therefore be required

to facilitate entry to the new markets and thereby stimulate increased competition in housing construction. In view of the challenges facing the building sector, the collaborating governments jointly promised to take the initiative to conduct, or other-wise participate in, activities described in the following. However, it would not be possible to realize these initiatives without the active participation of the building sector's actors and organizations, authorities concerned, and research and development institutions within the building sector.

The initiatives were by no means exhaustive and comprised in the initial phase only a limited selection of possible measures for the purpose of setting a development process in motion. Integration and cooperation between these countries will be a long-range process that will challenge the building sector's actors and will therefore require new commitments on their part – even without the participation of the governments.

Making market information accessible to potential actors

There is a need for a survey of existing databases and the total body of knowledge concerning construction in countries in the Baltic Sea region. The intention should be to create a publicly accessible database with information on, among other things, best practices and regulations in the countries that are of importance for the actors in the building sector. Examples are information on contractual conditions, tendering rules, general and technical provisions, requirements on guarantees and insurance, construction workers health and safety, etc. The information should be aimed at small and medium-sized companies and be a part of an ongoing process.

By establishing a publicly accessible knowledge database, the actors on the construction market can obtain information about best practice on how they can overcome the barriers that exist to doing business in other countries. In order to optimally adapt the survey of information and development of a database to the intended target group, this work should take place in close cooperation with representatives of the market's actors.

The project could be initiated as a pilot project focusing on best practices. Experiences from the pilot project will then be used before a knowledge database with national rules and regulations is established. The Ministry of Infrastructure in Poland was asked to run this project.

Expanding the basis of experience and newfound knowledge

The Construction Cost Forum (Byggekostnadsforum) in Sweden, established in 2001, was intended to be a bank of knowledge, ideas and experience for builders, designers, authorities and contractors. It was supposed to contribute towards closer cooperation between housing companies, construction companies and research institutions so that new technology is applied to stimulate competition and efficiency in housing con-

struction and thereby contribute towards reduced housing costs. The organization provided financial support for pilot projects and disseminated new knowledge via reports, articles, seminars and a website (www.byggkostnadsforum.com).

The Construction Cost Forum was asked to develop a joint project involving the countries around the Baltic Sea. In this way, the basis of new-found knowledge and experience in housing construction could be widened and the results could be spread and benefit more people. Such a joint project could also address the question of to what extent increased trade in building products between the countries can contribute towards lower construction costs, and how this can be stimulated.

Comparative analysis of regulations in the building sector

Descriptions of regulations in the building sector in countries around the Baltic Sea reveal considerable differences between the countries, which in its self constitute barriers that prevent many companies from establishing them-selves on new markets. The comparative analysis of building legislation in the Nordic countries (*Bygningslov for bedre bygg?* TemaNord 2004: 526) was therefore intended to be expanded to include other countries in the Northern Dimension region as well.

A possible next step would then be to carry out a new study involving the Nordic and Baltic countries and Poland where other sector specific regulations of corporate activities than those found in the building legislation are identified and examined more closely. Examples of issues the analysis should deal with are the forms of government supervision and inspection of building, requirements on corporate insurance and guarantees, requirements on the competency/qualifications of certain key persons, and procedures for registration of companies.

The analysis should be planned and carried out in such a way that it can serve as a basis for deliberations between the governments on possible harmonization measures or other changes in legislation aimed at making it easier for the companies to do business on new markets. However, possible initiatives for harmonization have to be seen as parts of a greater whole where relevant areas of standardization also will have to be identified.

The Ministry of Local Government and Regional Development in Norway promised, together with the Norwegian Building Research Institute, to take the initiative to conduct the expanded analysis of building sector legislations in the Baltic countries and Poland.

Validation of competency requirements imposed on certain actors

Considerable differences exist between the countries in the Northern Dimension region in competency requirements that are imposed on certain actors in the building process. In most countries requirements are made

on education and experience of the key persons in the process such as the main architect, the consultant(s) and persons in charge at construction companies. Some countries also require registration of companies involved in the building process with different combinations of company registration procedures and competency requirements. These requirements are conditioned by the educational systems in the different countries and the ways in which building works are organized.

In order to increase the exchange over the borders it's necessary to create a system for assessment of qualifications, in cases where foreign educational programs or work experience don't correspond to domestic professional requirements. Even work duties in the same profession sometimes differ as well as how the work is organized. Means for validation of competency requirements and work experience in the countries concerned shall for that reason be developed.

An initiative to a project for validation of competency requirements imposed on certain actors in the building process was to be taken by the Ministry of Economics in Latvia.

The relevant work in the EU should be closely studied and taken into consideration.

Establishing a network for joint R&D

A new network for joint R&D relevant to the issues in the action plan should be established. The network will contribute to the dissemination of knowledge through seminars, conferences, joint surveys, joint research projects and a system of reciprocal visits. Together they can form an influential research panel to advice decision-makers in the various countries regarding the research aspects of different issues. The first step would be to decide on a program for this cooperation.

The Ministry of Economy and Business in Denmark together with the Danish Institute for Building and Urban Research should take the initiative to establish the network in close connection with the European Network for Housing Research and the European Construction Technology Platform (ETCP).

1.6 Organizational framework

The Steering Group

The 9 countries and the Nordic Council of Ministers appointed a steering group with the responsibility of running the Action plan program and of securing appropriate anchoring of action plan activities, as well as evaluating program results. Also, the Steering Group have discussed and approved each subproject as well as the costs for program coordination. The

Steering Group has been comprised of 9 members with voting rights, representing the 9 countries. In addition the Nordic Council, the Nordic Innovation Centre and the Nordic Council of Ministers' Senior Official Committee for Industry have been invited to participate as observers (with the right to speak and to make proposals). Also, the Secretariat of the Nordic Council of Ministers was invited to participate as an observer since the Nordic Council of Ministers has been the lead partner and main program sponsor.

Denmark and Latvia chaired the meetings in 2005 and Norway and Estonia in 2006. Finland and Lithuania chaired the meetings in 2007 and finally Sweden in 2008.

The Steering Group members have been keeping in regular contact with each other and have met 2–3 times a year. In total 11 Steering Group meetings have been organized. The members have covered their own costs of participation. Besides these 11 meetings the Steering Group has formalized decisions per capsulam at 2 times.

This program has been one of the first examples of a truly Nordic-Baltic-Polish region-wide co-operation initiative. One of the elements to ensure this cooperation has been joint financing. Thus, the participating countries have been expected to contribute to the program financing through economic contributions or in kind contribution and the Steering Group should help to assist the national process on financing and organization of the projects.

The Steering Group members should also attend each of the Steering Group meetings, be prepared to present and openly discuss the issues brought up in meetings, and to participate if requested in working group meetings.

Program Coordination

On behalf of the 9 countries and the Nordic Council of Ministers the Steering Group appointed a program coordinator. The Program Coordinator should have the task to maintain regular communication with the NCM Secretariat and the SG members and to manage the activities and output of the program including to

- Manage preparations for SG meetings and to facilitate these meetings;
- Regularly monitor the budget/finances for the program and to prepare draft budgets and proposals for co-financing from other organizations;
- Participate in Working Group meetings;
- Present a yearly work report at NCM meetings;
- Raise awareness/present the Action Plan in various
- Other forums, when appropriate (e.g. EU, conferences, etc.).

Working Groups

The Steering Group also decided on guidelines for working groups. A project leader in the program should take the initiative to organize a working group for his (or her) project. Every participating country in the program has been invited to appoint at least one representative to each working group. Members of the Steering Group should give their support to the Program Coordinator and to project leaders in finding appropriate representatives from respective country. Members of a working group could represent the industry as well as concerned authorities and other institutions.

A working group have had the task to support the project leader in

- Finding national and international sources of information and knowledge in project related issues;
- Bringing in new ideas and unconventional solutions to the project;
- Giving the project a Northern Dimension aspect;
- Securing the relevance of the project to the Action Plan;
- Commenting a draft project report before publishing.

Economy

Over the years 2005–2008 projects as well as program coordination have been financed mainly (63%) by a budgetary support from the Nordic Council of Ministers on a year-by-year basis. About 37% of the budget for the program has been financed by national contributions from the participating governments.

Ordinary national contributions have also been paid on a year-by-year basis, to be accepted by each individual country. The Baltic countries and Iceland were proposed to pay DKK 25 000 per year and other Nordic countries as well as Poland were proposed to pay DKK 60 000 per year. As there has been an ongoing delay in project planning from the beginning of the program period a yearly surplus of disposable money has been transferred from one year to next.

Table 1. Distribution of financial resources for the program 2005–2008 (DKK)

	2005	2006	2007	2008	Sum
NCM	1 150 000	874 000	1 250 000	0	3 274 000
National contributions	387 000*	1 088 000**	290 000	122 000***	1 887 000
In total	1 537 000	1 962 000	1 540 000	122 000	5 161 000

*) Incl. DKK 97 000 as in kind contribution from Denmark for the Danish project.

***) Incl. DKK 425 000 as an extra contribution from Sweden and Norway designed for the Swedish project, and DKK 343 000 as in kind contribution from Denmark for the Danish project.

****) Extra contribution from Sweden for a conclusive report (DKK 75 000), and to cover a deficit in national contributions due to fluctuations in exchange rates (DKK 47 000).

Meeting the Building Industry

One important task for the Steering Group has been to meet building industry representatives in the co-operating countries. In order to understand the local conditions and challenges the Steering Group has organized meetings where various actors in the national market have got the opportunity to describe their problems and prospects. One impression of those meetings is that some problems and trends are common for the Building Industry in the Northern Dimension region.

- Shortage of skilled workers
Especially in times of an industry boom increasing cross-border activities will be obvious. When companies and workforce are going abroad the Building Industry will meet a number of challenges like a shortage of skilled workers for the domestic market, which has been a dominating problem for many companies in the Baltic countries and Poland in recent years. For the Nordic countries a shortage of skilled workers are foreseen in the long run as a consequence of an elderly population.
- Labour cost development
Shortage of skilled workers will be conducive to increasing labour costs compared to costs for other factors of production. High costs for construction labor are a problem, especially in rapidly growing areas. One reason for increasing labour costs in many countries is decreasing productivity in the construction sector. In most countries the productivity in other industry sectors in recent years has been far better than in the construction sector.
- Grey economy a growing problem
Grey economy and even bribing has become a growing problem in the construction sector in many countries. For serious actors earning their money on honest competition the occurrence of grey economy may be disastrous. Building industry organizations especially in the Nordic countries have therefore organized ambitious programs meeting the threat from illegal activities, most often in close co-operation with concerned authorities.

2. Making market information accessible to potential actors – proposal for a project

2.1 Background

Besides differences in language, culture and traditions, inadequate knowledge of foreign countries and market conditions there is presumably the greatest barrier preventing companies in the building sector from daring to establish them in a foreign country. It is therefore necessary to inform and to educate companies in the building sector regarding markets and market conditions in other countries if it is to be possible to stimulate these companies to an increased crossborder exchange. Information regarding markets and market conditions largely has to do with the competitive situation, the development of housing construction, the availability and type of assignments, factor prices and cost levels, and other economic conditions. But it also has to do with information on national rules and regulations. Besides the rules established by the national authorities, there are also, to a greater or lesser extent, national rules established by the parties themselves or their representatives on the market. In some cases these rules are also determined by some dominant actor on the market or by major suppliers to the market, such as lenders. Such rules may concern, for example, insurance requirements, normal guarantee conditions, general or administrative regulations for contracts as well as standard contracts.

There is certainly a need for a survey of existing databases and the total body of knowledge concerning construction in countries in the Northern Dimension region. The intention should then be to create a publicly accessible database with information on, among other things, best practices and regulations in the countries that are of importance for the actors in the building sector. Examples are information on contractual conditions, tendering rules, general and technical provisions, requirements on guarantees and insurance, construction workers health and safety, etc. The information should be aimed at small and medium-sized companies and be a part of an ongoing process.

By establishing a publicly accessible knowledge database, the actors on the construction market can obtain information about best practice on how they can overcome the barriers that exist to doing business in other countries. In order to optimally adapt the survey of information and develop-

ment of a database to the intended target group, this work should take place in close cooperation with representatives of the market's actors.

Poland was asked to organize this project and the Ministry of Construction there appointed a project leader from the Institute of Spatial Management and Housing. Due to personal circumstances the project leader resigned from his task before starting the project and it was then too late in the time schedule for the program to reorganize the work. The following project description is then only a proposal for the work to be done as the plans could not be fulfilled.

2.2 Goal

The goal of the proposed project was to facilitate an effective distribution of information and knowledge exchange serving to increase the competitiveness of small and medium-sized companies in building and construction when establishing on a new market in the Northern Dimension region countries. A first stage of the project should be carried out as a pilot project focusing on best practices in a limited number of countries in the region. Experiences from the pilot project would then be used before a knowledge database with national rules and regulations could be established for all the countries in the region.

2.3 Brief project description

The project should allow an exchange of information about conditions obligatory to invest, to make it easier for a small or medium-sized company to make a decision about expanding its activity on the construction and building market in the Northern Dimension region countries.

The proposed project was to be divided into a study-part and an implementation-part, strictly connected with each other.

Within the study-part information and documents in concern in all nine countries would be reviewed. A concept of an Internet portal would be defined/established, where necessary information about the conditions and rules of functioning of the construction and building market could be found in one place in English, therein information about best practices in the countries. Within portal preparation the content of a main page would be defined, as well as standards to lead the pages and content of national sub pages, rules for actualizations, financing the maintenance of the page and eventually allowed space for commercials.

Institutions responsible for leading national sub pages would be chosen using prepared criteria.

Their objective should be to present and exchange actual and full information in English on the common internet portal, aimed at small and medium-sized companies on the building and construction market.

An important part of the project would be a two-day-long workshop, where proposed organizational solutions for operation of the portal should be discussed and creatively criticized. The participants of the workshop (around 40 persons) would be international experts from the building and construction market as well as representatives for institutions/organizations responsible for leading sub pages of the portal. A Working Group of experts, would be involved during the Workshop (and on the stage of report evaluation) to develop a proposal for the portal's organization and structure as well as to advice on the needs for information.

The implementation-part should be focused on preparing a pilot version of the portal, for 3 or 4 countries for the service and material sector in building and construction. A pilot portal would contain the whole range of information, accessible in English, needed by small and medium-sized companies in the building and construction sector to start business activity on other country markets. Ways to promote a portal among small and medium-sized companies on the building and construction market would be proposed.

2.4 Proposed action plan of a pilot project

- Reviewing in working groups the institutions, organizations, gatherings and mass media key for functioning of the building sector in all 9 countries (range, status, web sites);
- Reviewing the information (source, character) necessary for an enterprise to begin its activity on the construction and building market in a foreign country;
- Definition and examples of "best practices" of small and medium-sized companies on the construction and building market;
- Creation of optimal structure of a database, to fulfill the needs of small and medium-sized companies;
- Appointing local (country) leaders, who will provide necessary information and who have access to a wide group of potentially interested companies;
- Creating a cross-border cooperation network in the Northern Dimension region among country leaders. Setting rules and mechanisms, which allow continuous exchange of current information, also including promotion of best practices;
- Organising an international workshop;
- Choosing three or four countries for a pilot project of the Internet portal;
- Establishing a network for the pilot project;

- Preparation of a demo version of the portal;
- Preparation of the final version;
- Developing optimal ways of portal promotion among small and medium-sized companies active on the construction and building market.

2.5 Anticipated results

The result of the project would be an Internet portal that will allow exchange of information for the building and construction market in the Northern Dimension region between small and medium-sized companies. The portal would be a public accessible data base about conditions that need to be fulfilled in order to start business activity on other building and construction markets.

The measure of success of the project would be its popularity and utility, defined by

- Number of visitors;
- Information validity;
- Number of posts on forum.

Objectives of an Internet portal

- Making information accessible from the scope of contractual conditions, tendering rules, general and technical provisions, requirements on guarantees and insurance, construction workers health and safety, etc;
- Information on best practice in building and construction;
- Exchange of knowledge through an established discussion forum;
- Creation of a contact point for medium-sized companies in the building sector interested in international co-operation (in database form).

Publication of results of the project useful for companies

One result of the project would also be a report containing information about construction of the portal, kind and source providing information – information useful and necessary for small and medium-sized companies on the building and construction market in the Northern Dimension region.

3. Expanding the basis of experience and newfound knowledge in housing construction

3.1 Background

High prices, low competition and highly local markets characterize the building and construction market in many countries today. It is assumed that increased cross-border exchange and cooperation in the Northern Dimension region will improve the functioning of the EU's single market between the countries in the region reduce housing costs by reducing construction costs and building prices.

High land prices and high costs for construction labor and building materials are a problem, especially in the rapidly growing areas in the Northern Dimension region. An exchange of experience and newfound knowledge between the countries in question is important in order to reduce construction costs and building prices. A larger and more transparent market will offer greater opportunities for new processes and forms of cooperation, new tools and methods for utilization of information and communication technology (ICT), and new materials and design solutions. This will in turn boost productivity in the building sector and promote understanding and greater fulfillment of the needs of users and society in buildings and the built environment. Furthermore, it will promote the development of a more sustainable construction and building sector and improve innovation uptake in the sector.

Increased productivity and less construction errors

One reason for increasing housing costs in many countries today is decreasing productivity in the construction sector together with high costs for construction errors. In most countries the productivity in other industry sectors in recent years has been far better than in the construction sector. The cost of correcting construction errors alone often comprises between 5 and 15 per cent of the total cost. If the costs of other so-called non-value-adding activities that occur in a building project are included, there are researchers who claim that there is a saving potential of at least 30 per cent of the total cost.

Even if reduced costs do not automatically translate into reduced prices, they would lead to higher profitability in the sector. In view of the fact that the sector in many countries has long been plagued by poor profitability, such a development will undoubtedly be welcomed by all concerned. Better profitability means more resources for both enhanced quality and investments in skills and product development. This leads to even lower construction costs, and eventually lower property management costs. Furthermore, the construction sector's competitiveness would be strengthened, which will be necessary for survival in countries exposed to greater international competition.

Industrialized constructions

One way for increasing productivity with less construction errors would be to adopt a more industrialized mode of working. The building industry has a lot to learn from fixed industry in general, and from the automotive industry in particular. New construction projects are started, organized and administered in many cases as if they were the first projects ever started. Large parts are procured without requirement specifications, and the work is begun before all parts of the project have been designed and before all components have been procured or purchased. This would never be accepted in fixed industry, where the products have been defined and designed in detail and where everything has been procured at the best price before production begins, and based on intensive development and innovation activities.

By adopting an industrialized mode of working, the one-off design work for each individual project can be replaced by continuous product development in order to enhance quality and reduce costs. A natural part of the industrial approach is to prefabricate everything that can be prefabricated, but this does not exclude the possibility that the planning and design phase, as well as production on the building sites, can also be systematized and process controlled. Industrialized building thus doesn't mean that everything has to be prefabricated or based on standard solutions. Builders should not standardize what they do but rather how they do it.

Utilization of ICT

Other means for increased productivity in the construction sector would be increased utilization of ICT. Studies show that as much as up to 25–30 per cent of building and construction costs will be caused by a fragmentary building process and lack of communication among the actors. Same information will as an average be recreated at least 7 times during the building process. This results in unnecessary work as well as mistakes and sources of construction errors. Digital solutions are here to stay even in the building and construction sector. Increased utilization of ICT

within the sector will be of vital importance for the possibilities to get a more rapid and effective building process resulting in better products for clients and consumers.

Construction with a life cycle perspective

It is important to not focus solely on the price of what is built today, but also to think about the costs incurred during the buildings' lifetime (life cycle perspective). It is therefore important that buildings will be well designed and socially, ecologically and economically sustainable. This means that in addition to low costs, the buildings also shall feature a high standard and high quality, with dwellings that are well designed and furnished and built with good long-range properties. So it's about more than just building cheaply. It's about building cheaply and well, which is difficult and requires a little extra effort on the part of all concerned.

3.2 The project – Goal and deliverables

The long term goal of this project managed by the Forum for Building Costs at the National Board of Housing, Building and Planning in Sweden has been to broaden the experience and newfound knowledge base concerning how construction costs can be reduced, taking into consideration quality aspects and sustainable development, by

- Increasing the clients' (owners') competence and ability to lead the
- Building process;
- Reducing the number of defects in building construction and
- management;
- Eliminating non-value-adding activities during the building process;
- Focusing on early phases (planning, sketching and design) and feed
- back of experience into the building process;
- Introducing an industrial approach (processes, logistics, procurement
- and purchasing, both at the factory and the construction site);
- Stimulating a life cycle cost (LCC) approach in building construction
- and management;
- Utilization of ICT.

The purpose of a first stage was to survey, describe and analyze initiatives already taken in the Northern Dimension region countries. In those descriptions, attention should be paid to possible effects of reduced costs on quality standards or aspects as well as on sustainable development.

Country representatives (members of a Working Group) and other actors in concerned countries were asked to describe, analyze and provide supplementary information on how programs are organized and on their

evaluated results, if any. An early description of Swedish initiatives served as a template for other national descriptions. With these descriptions as a background the project report proposed main outlines of a program for further cooperation to reduce housing construction costs.

A first stage of the project thus gave the following deliverables.

- A network (a Working Group) for exchange of experience and newfound knowledge on how costs of housing construction can be reduced;
- A written report with descriptions and analyses of governmental and/or industrial initiatives and programs for reducing the costs of housing construction;
- A seminar (a Working Group meeting) where the national descriptions as well as problems and possibilities with different approaches was discussed;
- A proposal for main lines of a program on how the experience and
- newfound knowledge base can be broadened among countries in the Northern Dimension region.

3.3 Network for exchange of experience and newfound knowledge

The members of the Steering Group, representing the 9 co-operating countries, were asked to appoint representatives to a Working Group and all countries except Estonia appointed national representatives to the project. According to a decision by the Steering Group, a working group should support the project leader in

- Finding national and international sources of information and
- knowledge in project related issues;
- Bringing in new ideas and unconventional solutions to the project;
- Giving the project a Northern Dimension aspect;
- Securing the relevance of the project to the Action plan;
- Commenting on a draft project report before publishing.

In this project the representatives should also be able to document national initiatives taken in recent years to reduce housing construction costs. In some cases the national representative is not the same person as the author of a national description.

A two days seminar (a Working Group meeting) was held in Stockholm in January 2007. The aim of the seminar was to review and to discuss the national descriptions as well as to discuss problems and opportunities in different approaches to reduce housing construction costs. The participants also proposed a number of topics for further co-operation on this issue as

well as some ideas on how such a co-operation could be organized. As there is great interest in further co-operation in this field among those experts, one conclusion of the project was a recommendation to plan a program for future co-operation in the field of initiatives to reduce housing construction costs based on the network created in this project.

3.4 Some conclusions of national descriptions

All the co-operating countries in the Northern Dimension region have had problems with runaway building costs and housing prices, despite a historically low rate of inflation. The causes differ, however, and in those cases where there is a political will to halt the trend the approaches taken to address them vary.

In 2001, the Swedish Government instructed the National Board of Housing, Building and Planning to establish a Forum for Building Costs (BKF) for collecting, analyzing and disseminating knowledge and experience on factors of importance for development, increased efficiency and lower costs to concerned actors in the building sector.

BKF was supposed to promote increased efficiency and lower building and housing costs by serving as a knowledge and idea bank for builders, municipalities, national authorities and building contractors. The purpose was to disseminate knowledge concerning building projects or processes that lead to lower building costs without compromising quality or equipment standards, and to reduce building costs and, above all, housing costs in the long term by means of information, education and development.

The point of departure for the work initiated has been the knowledge that it is possible to build functional, healthy, aesthetically appealing and sustainable housing for households with ordinary incomes. It has therefore been important to show that there are builders who defy the widespread notion that it is not possible to build new housing for households with ordinary incomes. By carrying out pilot projects, BKF has shown that it is possible to cut building costs despite claims to the contrary. But then all those involved, from municipal town planners and building permit processors to landowners, designers, contractors and material suppliers, and not least the builder himself, must want the same thing at the same time and in the same project.

Several of the pilot projects have focused on the building process per se, and not least opportunities for reducing building costs and improving quality by applying a consistent industrial approach. Careful planning and design, an industrial process that is carefully thought out in advance, new procurement procedures, new purchasing channels and purchases agreed on in good time before the start of production have led to considerable

cost reductions, more efficient production, fewer errors, higher profitability, and low long-term housing costs.

In 2004 the Norwegian Government initiated a similar initiative by concluding an agreement with representatives of the building industry, the civil engineering industry and the property industry on a five year program (2005–2009) for better and more cost-effective housing production by means of reduced production costs and increased productivity. The purpose of the agreement was to bring about a more competitive building industry, better cooperation between the public sector and the industry and a better functioning housing market.

The program will focus on 3 main areas.

- Increased client competence and development of buildings that are
- more cost-effective to operate;
- Fewer construction defects;
- Increased productivity by means of innovation, industrialized building processes and utilization of ICT.

The program is intended to stimulate new thinking and innovation. Efforts will be concentrated on areas where the industry is already successful and at the forefront of progress. The program will attach great importance to the use of existing knowledge and technology. Feedback and re-use of experience will be facilitated, which can contribute to learning and transfer of expertise between value-adding activities in the building process as well as between different building projects.

Strategies to be used will include dissemination of information and new knowledge, establishment of meeting places, investigation and analysis, subsidizing of pilot projects, measurements and evaluations.

These examples from Sweden and Norway show how the state and representatives of the construction industry are trying by means of joint development initiatives to find solutions in the form of industry agreements and good examples. Similar experience exists from Denmark and Finland. In Denmark in particular, great resources have been devoted for many years to research and development aimed at improving quality, increasing productivity, reducing construction defects and lowering costs. Despite great efforts in the Nordic countries to cut costs in housing construction, however, productivity has not improved significantly in recent years and is in most cases poorer than in other sectors of industry.

For new member states, accession to the EU has led to increased growth and living standards, resulting in a sharp increase in the demand for housing. At the same time, EU membership has led to considerable emigration of skilled labor in particular, which has been greatly detrimental to the domestic construction companies in those countries. Besides increased demand and higher prices for buildable land, the costs of housing construction are also increasing due to capacity problems at a juncture

when demand is skyrocketing. Neither in the Baltic countries nor in Poland or Iceland has any clear initiatives been taken by the governments to reduce high building costs.

A problem for the construction industry in some of the countries in question is a lack of interest in building economics as a profession and an academic discipline. Many engineering schools and universities have too few undergraduate students, inadequate teaching resources and not enough postgraduate students in the field of building economics. Improving productivity and cost-effectiveness in construction companies is not just a question of resources for professional development in the building sector but requires as one condition knowledge and implementation of business models that can be adapted to such companies – and such knowledge and reaction is unfortunately sorely lacking.

3.5 Main lines of a program for future cooperation

The countries in the Northern Dimension region share a common interest in cooperating for the purpose of finding new ways to reduce construction costs and share knowledge. In some countries, no political initiatives have been taken to reduce housing construction costs in a systematic way. On the other hand, a couple of countries have implemented extensive programs for reduction of construction costs, and their experience from these programs will be of great value to the other cooperating countries. Discussions at the seminar in January 2007 showed considerable agreement on the following statements as a basis for future cooperation.

- Reducing the costs of housing construction, taking into consideration
- quality aspects and sustainable development should be the overall goal for the activities;
- The cooperation program should include both government and
- industry involvement and determine what tools government and industry need to manage the situation;
- The building industry (including the professional owners and clients)
- should be involved in the activities, since it is the target group of
- measures aimed at achieving more efficient housing construction.

The discussions at the seminar also concluded in a recommendation that the following aspects should be included in future cooperation.

- Dictionaries and vocabularies;
- Clusters of authorities, industry and universities;
- Communication platforms and structures for statistics from each country or sub-region on costs, prices, quality and productivity;
- Case studies for comparisons at project level;

- Workshops on actual development projects in the Northern Dimension region countries.

Finally, a future cooperation program should be planned for a period of 3–5 years and organized in 3 different constellations.

- A program group of 1–2 representatives from each country to organize and to lay down guidelines for the work to be done;
- A knowledge group of representatives from industry, universities and authorities to develop comparable national statistics on costs, prices, quality, efficiencies and productivities and create a common language;
- An improvement group for an industry cluster to discuss solutions and set targets for improvement, measured for example in terms of the number of defects, effectiveness, quality and costs and how to compare different building projects between countries and sub regions.

4. Comparative analysis of regulations in the Building Sector

4.1 Background

The final report of this project (*Comparison of Building Legislation in the Northern Dimension region*, TemaNord 2009:506) is mainly based on two earlier reports concerning comparison of the building legislation. The project has all the way been managed by Sintef Building Research (the former Norwegian Building Research Institute).

In the first report the building legislation in the five Nordic countries were compared. The report was published as a book in Norwegian language in 2004, titled *Bygningslov for bedre bygg? Sammenligning av bygningslovgivningen i Norden* (*Building legislation for better buildings?*), TemaNord 2004:526.

In the second report the building legislation in the three Baltic countries and Poland were compared (*Increased exchange in the Building Sector – Building Legislation in Balticum and Poland*, TemaNord 2008:578).

In the final report, the building legislation in all the nine countries has been compared and the information updated. The general patterns and the similarities between the countries are focused. In addition, the project has carried out a case study for the control systems, as it has been considered to be an issue of high importance and with a wide range of varieties in main principles. In addition, many of the countries are currently working on improvements of the control systems.

The project will contribute to the main goal of the programme – increased exchange in the construction sector – by increasing the understanding of the legislations of the countries. By pointing out the main pattern and similarities and differences related to this pattern, especially concerning control systems, some of the hindrances related to cross-border activity may be easier to overcome.

4.2 Building legislation as a system

The building legislation is primarily meant to function within each country, and must be seen as a complete system for each country. Taking one single element and just compare this element between different countries will not give a justified picture. The challenges are not the same in all the

countries, but the main elements in the legislation are the same – just given different weight and attention.

In this comparison we have tried to find the main pattern for the most important elements by focusing on similarities. And for each main issue we are looking for deviations from the main pattern.

The history of the involved countries display tight connections between all the countries – not only between a) the Nordic countries and b) the Baltic countries/Poland, but also connections crossing the Baltic Sea – with Sweden as the most active country in such relations.

The five Nordic countries display a wide variety both in political history, way of income, and of structure/challenges for the construction sector. The scope and focus of the building legislation then also display wide variety – from the dialogue-based focus in the Danish legislation, to the focus on strong public control in the Icelandic legislation.

The Baltic countries have had a more similar recent history, all being a part of the former Soviet Union since the WW2 until 1991. But after the liberation, the new building legislations are based on different models, reflecting their different earlier historical connections. Estonia used the Finnish legislation as model, Lithuania used the German/EU-legislation, and Latvia has converted the Soviet legislation more gradually.

Poland has been under strong influence of the former Soviet Union until the liberation in 1989, but did not adapt the Soviet legislation directly. The current building legislation from 1994 is based on the law of 1974, and there have been several amendments of the legislation. The Building Act is now like a patchwork, and there are political promises on a new law.

Today the multi-national ties are stronger: all the countries are parts of the EU/EEA. The free-trade principles within the EEA encourage construction sector to cross borders (not only between these 9 countries). All the countries are now working on converting technical requirements into functional requirements, and they all work on implementing new EU-directives. Thus, the legislations are getting closer, and in all countries, the amendments made after 2000 also focus on simplifications and more flexible handling procedures.

The planning and building legislations are administered differently in the countries. Of nine countries, five of those have one common law for planning and building, while four have separate laws. All the three Baltic countries and Denmark have separate laws, while the rest of the countries have joint laws. There is no “general pattern” regarding the link and/or division between the planning and the building legislations.

The administration of the building legislation display the diversity of the aspects of the building activities – in the major part of the countries, the building legislations are closely connected to housing policy (Lithuania, Iceland, Finland, Norway and Sweden), in the minor part (Denmark, Esto-

nia and Latvia), the building legislations are connected to the economic policy. And in Poland, the focus is on built environment in general.

Most of the countries have delegated the implementation of the building legislation to special agencies.

Planning is providing the most important frames for building activity, since all of the countries proclaim that an approved local plan is the most important element for approval of an application for a building permit. Formally and theoretically, this is similar in all the countries.

The planning hierarchy and degree of predictability deriving from plans as a frame for building activities may differ between the countries. This may be due to differences in the types of plans and their degree of legal binding – from practically no planning hierarchy at all (Sweden) to a strict and legally binding planning system (Denmark, Iceland, Lithuania and Poland). The remaining countries have binding planning hierarchies only as soft obligations. A plan must observe the superior plan, and in a way the systems are interactive. Strong and hierarchic planning systems provide a high level of predictability for building activity – but at the same time new challenges related to use of land may be more difficult to handle.

In case of lack of approved plans, the planning system as a frame for building activity also may differ due to different strategies. Lack of approved plans is a challenge especially in Poland (where the Mayor decides the procedures in such cases), and partly in the Baltic countries (where their different strategies are stated in the legislations). The Nordic countries also have procedures in case of lack of plans.

Interpretation of the planning content may also be an issue in some of the countries, especially in the Nordic countries. The aesthetical dimension or other questions related to the interpretation of a plan will most often be evaluated by public officers as a part of the handling procedures of an application for a building permit. But in the Nordic countries, interpretation of plans and aesthetical development/guidelines is a matter of interest, and they have much focus on handling procedures to take care of this – by visualization plans, property plans, mandatory or voluntary early dialogues and more.

Development agreements represent another type of challenges.

Verification of the ownership or other rights to the construction site is also important in Poland and some of the Baltic countries.

4.3 Responsibilities / requirements on actors

Division of responsibility between public and private parties is based mainly on the same principles in all the countries. Defining design criteria and requirements for a project is a part of the planning process, and thus a responsibility of the planning authorities – even where private actors may also produce local plans.

Providing adequate technical infrastructure (transport, energy, water supply etc.) is normally a responsibility of the authorities, and also normally public property. But in Latvia and Poland, these structures are often undertaken by private actors, and the local authorities have only a supervisory function. In other countries, the cost for using these structures is a matter of negotiations between the developer and the local authorities. In Finland, this is even used as a factor to force clients to complete their construction works. Formally, the clients will need a completion certificate to connect to permanent electricity and water supply.

Democracy in the planning process is a responsibility of the local governments in all the countries. All the countries state that building permits must be in compliance with an approved local plan – and then the democracy processes are taken care of by the planning process. But Finland and Norway hold the basic view that neighbors and other stakeholders have a right to express their opinions also in building projects as a part of the case handling for building permits – mainly related to aesthetic issues.

The control systems display a variety of division of responsibilities. The Client formally has complete liability towards the authorities in all the countries. And there are no qualification requirements on the Client in any of the countries.

However, in Norway the Client does not have this liability alone – there are several other actors with direct liability towards the authorities, and the authorities may use penalty reactions directly towards these actors in case they do not fulfill their liabilities. In most of the other countries, there are other actors mentioned as mandatory actors to help the client to fulfill his obligations. In the Nordic countries (except Denmark), this will most often be persons related to the project management. In the Baltic countries and Poland, it will most often be persons related to the control systems for the projects. The actors mentioned in the legislations and their responsibilities are both defined and described more detailed in the report.

Qualification requirements and accreditation systems related to actors vary between the countries, due to the differences in responsibilities. In general, the countries have qualification requirements on the central actors mentioned directly in the legislation. In addition, all actors even if they are not mentioned directly, must perform according to professional standards for the work they carry out. And in general, the countries have some kind of accreditation systems on the actors mentioned with qualification requirements in the legislations.

But this is not always the case. On the one hand, we have Denmark, holding the basic view that the client has complete liability – then the authorities would neither need to have qualification requirements nor accreditation systems or registers. On the other hand we have Norway, holding the basic view that the client cannot fulfill all obligations by him-

self (except for very small projects). Then they have laid both direct responsibility towards the authorities and qualification requirements on all the actors. And then they would also need to follow up by having approval systems and registers held by the authorities.

In between, all the countries have qualification requirements on some or all of the actors, even if the client has complete liability towards the authorities – either to help the client fulfilling his tasks, and/or to secure high quality in the projects. But the consequences of this differ, regarding approval systems and/or public registers. In each country, there is an inner logic related to the issue.

4.4 Quality in built environment

High quality in built environment is one of the major goals for the legislation in all the countries. To obtain this, they all (in principal) use both requirements on the projects, requirements for quality systems, and other requirements mentioned in related legislation.

Requirements on the projects are mainly given in local plans, which will provide utility criteria, design criteria, requirements and restrictions. Some of the criteria are measurable, and must be fulfilled to get a building permit. But other requirements are not so precise.

Aesthetical development is the most complex issue. In most of the countries the building legislation comprises general formulations about aesthetical development – but these formulations are not precise, and aesthetics is considered to be a planning issue, to be taken care of by the design criteria. In Denmark, this is also followed strictly as a principle. But in Finland and Norway, aesthetics is one of the most common issues for public reactions/complaints, and may be proved by public/political boards or by court. In Lithuania, aesthetics is considered to be a professional issue to be judged by people with special knowledge (architects) in case of protests. The view that aesthetics should be a matter of the design professions is also held by Latvia and Poland, where they want to enforce the importance of the issue by giving the designer (author/architect) some extended authority in such matters. However, in Estonia and in Iceland, the building legislations do no mention aesthetics, except for general terms as a part of the intentions.

In most of the countries, the general opinion seems to be that they want to have a stricter regime on aesthetical matters, but that they until now do not have sufficient tools to practice stricter control on this.

Cultural heritage is primarily protected through other laws. But planning shall observe this, and follow it up by criteria in local plans.

Sustainability and environmental issues according to directives given by EU must be followed up in all the countries – related both to criteria given in local plans, and to technical requirements given in prescriptions.

Technical/functional requirements are important elements in the building legislations, and most often they are drawn out of the legislation text, and placed as prescriptions in separate documents – which will make them more easy to change in a fast way, when development is needed or in case of innovation of solutions. They may also be placed in a separate law (Sweden) or in separate building regulations (Denmark).

Using functional requirements leads to some new challenges, because it is not so easy to say if a solution is good enough. A system based on functional requirements will then also need a set of pre-accepted solutions, documentation from the client, or an independent part to evaluate the solutions. There are several processes on interpretation of functional requirements going on in most of the countries.

Securing quality in built environment may be done by requirements on quality systems in the processes by the companies/actors.

Building faults and building errors are not easily measured, as no authority in the countries keep any statistics on faults and errors – even if they try to monitor the development in the field in several ways, and have great focus on the issue.

By this, and by general impression, they conclude in all the countries that a relatively high number of faults and errors in the construction works are caused by mistakes made by the designers. Then there is a high number of damages caused by moisture due to a badly organised work process. Many damages are also caused by the climate, or may be normal faults and errors made by the construction companies.

In addition, the legislation in Lithuania and Poland comprise separate chapters on procedures for handling severe accidents of construction works.

Requirements on quality systems vary between the countries. In all the countries, the client is obliged to have his own system for quality control, initially done by stating the clients' complete responsibility.

In Denmark, this is regarded as formally sufficient. In the three Baltic countries and Poland, they hold the same basic view, but quality control is regarded as closely connected to competence, and then the requirements on actors are the most important part of it. In Finland, Norway and Sweden, they also have requirements on control plans. A control plan will give documentation on how the owner's supervision will be performed. In Iceland, they have extended public control.

In principle, the clients must have their own quality systems in all the countries, but they may perform this the way they want.

Universal design/accessibility for disabled people is in focus in all the countries, and the issue is mentioned in general terms in the legislations. The question is also given attention in the technical/functional requirements. In most of the countries they are working on guidelines and/or prescriptions on this issue.

Maintenance of construction works is in general regarded as a matter of the clients' own interests. The authorities/building control offices can

normally only demand repair works if the construction is dilapidating or is in such a bad shape that it is representing a danger to third party. However, maintenance is an issue with increased focus, and some of the countries mention it in the legislation. In Latvia, local authorities may adopt local guidelines for maintenance. In Finland, the client must present a plan for facility management prior to the issue of a completion certificate. In Poland, a separate chapter only concerning maintenance has been taken into the Construction Law. A mandatory building structure log is then needed to prove that the obligations for maintenance are being kept.

Security and health of workers is not a part of the construction law in any of the countries, but is normally a part of other legislation.

Insurance of construction works is in all the countries regarded as a matter of private interest, and there are no formal requirements on insurance except for an insurance on the construction company in case of damages on third party or on workers. However, in Denmark, the focus on building faults and building damages have resulted in changes of the requirements on insurance of construction works, and they have tried out solutions with mandatory funds to secure the interest of the third party.

4.5 Handling procedures

Handling procedures may be described in a very detailed manner. This comparison is meant to focus on superior similarities and differences, and therefore it will be difficult to give detailed descriptions in a summary.

Basic conditions (types of procedures and more)

All the countries have simplified procedures for very small buildings, where a building permit will not be needed, and where notifications to inform the authorities will be sufficient – but the definition of a very small building differs between the countries.

Two parallel procedures for building permits are parts of the system in some of the countries, due to the planning system or to the structure of the legislation and/or authorities. This may be caused by other procedures in case of lack of approved local plans (Estonia and Poland). This may also be caused by variations between the municipalities because of the degree of local democracy (Denmark and Finland). In Sweden, the application for a building permit shall be evaluated according to two different laws (the Planning and Building act – PBL, and the Law on Technical Requirements for Construction Works – BVL).

Early steps in the procedures are given special attention in most of the countries, and they may have several steps in the application procedures – even if the types of steps differ quite a lot. In some countries, the first step may be a visualization plan more similar to a detailed plan, in other

countries, the project documentation may be handled in several steps. In some of the countries, it may be a combination. And in some of the countries, there will be mandatory early meetings between the client (and other important actors) and the authorities.

Electronic handling and possibilities for digital applications are either already introduced or soon coming in almost all the countries.

Time limits for handling procedures are valid in most of the countries – sometimes rather detailed, and in other countries not detailed at all.

Procedures to obtain a building permit

In all the countries, an approved building permit compliant with an approved local plan is mandatory for all building activity. But criteria for obtaining this differ. Elements that may be required in applications are

- Verification of ownership to the construction site;
- Design documents (drawings and descriptions);
- Names, qualifications and certificates on central actors / companies;
- Verification of listing of companies in Merchant Registers, and
- Control plans for actors and/or owners' supervisors.

The importance of these elements differs a bit between the countries.

Dialogue between the client and the building control authorities

In all the countries, the dialogue between the client/developer and the building control authorities is very important – with Denmark as the most extreme. Some parts of the dialogue are mandatory in some countries. Such dialogue basically comprise following possible elements.

- Clients take early informal contact to get information about the site;
- Early meetings for defining requirements, start-up of design;
- Collaboration meeting after application, start-up of handling;
- Dialogue / contact in the construction period;
- Dialogue related to completion of the building process.

Following-up during the construction period/control system

Handling procedures for following-up of construction works during the construction period are closely connected to the core activities of a control system. The practice in the countries differs from almost no contact (Norway), to a tight almost day-to-day follow-up (Iceland) – and several in-between solutions. In some of the countries the contact is based on construction site inspections, while in other countries the dialogue or the diary is the main tool for control in this period.

Procedures to obtain a completion certificate

In all the countries, as-built-documentation is needed to apply for a completion certificate. In some of the countries, additional requirements are needed, and these may differ. Additional elements could be a final construction site inspection (Iceland, Estonia, Latvia and Poland), approved control plans (Finland, Norway and Sweden), plans for maintenance (Finland), or other conditions given by the local municipality councils (Denmark and Finland).

Summing up

In principle, all the countries use more or less the same elements in different parts of the handling procedures, but their focus may differ a lot.

In Denmark, the dialogue is the most important element, used both in the pre-phases and design process, as well as in the handling procedures and in the following-up of construction sites. In addition to the elements directly mentioned above, they also focus widely on support elements like guidelines, information meetings, personal support and more.

In Iceland, the strong public control is the most important element in the handling procedures – both document control and construction site inspections, and lately also more focus on control of competence of the actors.

In Norway and partly Lithuania, the strong responsibilities laid on each of the actors are the main element in the handling procedures. The focus is then on control of the actors' competences and of their own control plans/control routines.

The rest of the countries have combinations of elements from these three poles in different ways. In Estonia, Finland and Sweden, owners' supervisors are mandatory, and in these countries the follow-up during the construction period is not as close as in Latvia and Poland, where the public control is stronger.

4.6 Main directions for further development

The building legislations are in constant development in all the countries, both improvements of technical requirements for implementing new EU-directives, and for other more nationally based reasons. However, three of the countries have on-going processes on major revisions of their building legislations, or even completely new laws.

In Iceland, they are preparing a completely new Building Act. The proposal implies a division between the planning and the building legislations, a completely new governance of the legislations, and major changes of practically all important parts of the content of the building legislation – except for the control system.

In Norway and in Sweden, they are preparing major revision, and in both countries, the control systems are in focus of the revisions.

Still, in all the countries, there is an ongoing development, and first we will see if this development is working in directions co-operating with the directions pointed out as wanted by the informants in the case study on control.

In Denmark, the informants basically wanted some support for the dialogue-based system, focused on better possibilities for sanctions if the dialogue does not work out well. Here, the direction of the amendments is based on further development of the system – but more flexibility, and efforts on additional issues, like guidelines, education and more.

In Estonia, the informants wanted better clarification of the roles and their responsibilities including independent control, and stronger sanctions in case of bad quality. Here, the directions of the amendments are clarification of the roles and responsibilities, and more flexibility between the planning and the building part and towards other legislations.

In Finland, the informants wanted better focus on requirements both on actors and on constructions, and they also pointed out that the possibilities for a neighbour to complain were too wide. In addition, they pointed out that the differences between the procedures on the municipality level caused problems to the construction sector. Here, the directions of the on-going processes are better focus on all types of requirements, and on increased use of independent private controllers. In addition, they prepare major changes in the municipality governance, by proposing big-municipalities.

In Iceland, the informants wanted to keep the strong public control, but they also wanted improvements of this system, by complementary private control. The proposal for a new planning act is still based on strong public control, and improving the system by complementary private control. In addition, the new proposal emphasize better requirements on actors and better administration of the legislation on all levels, including establishment of big-municipalities to improve the competence of public officers.

In Latvia, the informants wanted more resources to public control offices, to enable them to perform even better. Here, the direction of the amendments is more responsibility to the client/private actors, also for control activities – even if they at the same time will strengthen the public control on single family houses. In addition, they look for simplifications of the handling procedures.

In Lithuania, the informants wanted a focus on the requirements on actors, to encourage better education (and also better salaries) to improve the quality of the built environment. In addition, they wanted improvements in the administration of public control. Here, the focus in on-going processes primarily is improvements of the control system and of sanction possibilities, to stop illegal building activities. They also have on-

going processes on administration of the control system, on certification systems, and on other issues to stop “social dumping”.

In Norway, the informants wanted improvements in the requirements on a project – more in direction of requirements *less* functional based, because of lack of competence among public officers to evaluate solutions. Here, the major revision mainly focus on the control system, focusing on independant private controllers. In addition, it will focus on maintenance and flexibility in handling procedures.

In Poland, the informants wanted a debate on the control system, and improvements on the requirements on actors. Here, the amendments are aiming at simplifications of the handling procedures combined with less requirements on the buildings but more requirements on the actors.

In Sweden, the informants wanted simplifications of the complete legislation system, and they wanted a focus on the control systems. Here, they will propose a major revision of the complete legislation, and this will comprise focus on control and on an independant private controller.

Summing up this, most of the countries fulfill the wishes from the informants in the case study. But in some cases, the authorities provide other answers to the same problems as the informants describe, and in other cases they have additional solutions. The countries where they are getting more answers than they asked for, are mainly Denmark, Latvia and Norway.

However, in Poland, the informants wanted a stricter system, but the amendments are in direction of a less strict regime – due to the challenge of an urgent need of getting new houses built, and thus encouraging developers to start construction works.

The next aspect will be if they all are developing their building legislation in the same direction. And on a superior level, they do so.

Most of the countries focus on the control systems in their amendments, and most of them also want solutions based on independant private controllers – both the countries currently having systems based on extreme private control and based on extreme public control.

In addition, most of the countries focus on improvements of the requirements on actors, even if they already have a good system for this.

In the countries where handling procedures are focused, they all want simplifications and more flexibility. And in the countries where they need changes in the administrative systems, they seem to go in the same direction: Big-municipalities or better co-operation between municipalities, to secure better competence among public officers, and better possibilities to specialize this competence.

The last aspect to be commented, is the basic question for this programme on Increased exchange in the construction sector in the Northern Dimension region: Do they harmonize their building legislation within this region?

None of the countries have any intention of harmonizing their legislation with other countries in the region with the intention of increasing the interaction between the countries regarding building activities.

However, they partly look to each other when developing their legislations, and especially the Baltic countries and Poland are looking to the Scandinavian countries for inspiration – Estonia more to Finland, and Poland more to Denmark (even if the Finnish and Danish legislations differ rather much). And as concluded above, they all develop their legislations in the same direction.

5. Validation of competency requirements on certain actors in the Building Process

5.1 Background

Free provision of services in the enlarged European Union (EU) requires a simple and clear system for recognition of professional qualifications. In order to facilitate the mobility of service operators and to improve public services, the EU has established a legislation, which states basic principles of mutual recognition. Several attempts of improving already existing recognition systems and setting up constructive proposals for advanced development led to an essential new directive (2005/36/EC) known as the “New directive of the general system” (hereafter the New Directive).

Despite expectations for more specific conditions regarding different recognition situations, the new document only partly satisfies these aspirations and may be more considered as a consolidated framework of previously adapted directives. Principles laid down in the New Directive do not give answers to all questions arising in practice. Interpretation of recognition procedures as well as guidelines even for key profession categories is not satisfactory explained. Automatic recognition may be required only for definite professions attributed to a comparatively narrow circle of professions.

Architects are the only category of civil engineering profile, which falls in this category and may present a claim for recognition on the basis of minimum training conditions. No specific reference is given, which might facilitate recognition problems of the building sector in a more extensive range. As a consequence, remaining professions of construction profile comply with requirements of the general system. It means that a Member State allows access to the profession in question and pursuit thereof under the same conditions as for nationals. In order to be able to gain access to the profession in a host Member State, which does regulate that profession, the applicant has to provide a proof as specified in general terms in the Directive. As a result, there is still great freedom in recognition rules, which enables a great variety of recognition schemes in different countries.

Therefore, a detailed study of provisions existing in the labour market of building profile in a limited area, particularly in the countries of Northern Dimension region turned out as an unsettled and essential prob-

lem. Furthermore, new opportunities uncovered by provisions of the New Directive and expressed as a possibility to elaborate a set of criteria (in the Directive entitled as a common platform) to compensate for the substantial differences identified between the training requirements in different countries underline the importance of such a study. Results of the study should be considered as a prerequisite for elaboration of a common platform thus to promote transposition of the New Directive into national legislation.

To prepare preconditions for a transparent and improved systems for recognition of professional qualifications in the building process at the working group level is more efficient from different points of view. First, specific criteria for a certain set of building professions are common to all participants of the region due to the climate and cultural and social peculiarities. Secondly, submitting proposals for transparent and improved systems of recognition representing countries of the Northern Dimension region would be more effective in order to withstand a pressure from other countries - potential opposition concepts. Finally, a certain insight in the problem area has been acquired in the framework of the project's first stage, which may provide a reasonable starting position for proceeding with the problem solving.

5.2 Goals

The global objective of the project has been to promote increased transparency of recognition procedures, particularly making national systems easier to manage and more clear, quick and friendly to use, improving transparency of qualifications to ensure that customers can rely on a more comprehensive service.

Results of the project are intended to provide sufficient information on rules for free movement of qualified labour force and to make those available in all participating countries. Under rules should be understood conditions of recognition formulated in a clear and concise way, which would be exploited twofold. First, applicants obtaining qualification in their home country and applying for job abroad should be aware of provisions in the recipient country. Second, relevant administration of the recipient country should be at disposition and provided with procedures how to deal with applications with various confirmations about qualifications of the applicants. Improvement of recognition systems consists in simplification of recognition procedures and reduction of bureaucracy in document processing, taking into account that these procedures are sufficiently selective in order to separate and eliminate inadequate qualifications and thus to guarantee safety of construction works.

5.3 Working mode

The execution of the project was organised in two steps or by means of two inquiries. The inquiries covered assessed results of the first stage in order to exploit it for the project, as well as acquisition of recommendations for the recognition system in compliance with objectives of the project. The questionnaires had a strict structure of description. Particularly the second questionnaire included eight characteristics. Those were

- The role of the state in governing the recognition process;
- The role of non-governmental institutions related to the recognition problems;
- Considerations about regulated engineering and technician professions;
- Qualification indicators and acceptance criteria for regulated professions;
- Alignment of qualifications obtained in different countries;
- Types of official qualification confirmation;
- Approval procedures of qualifications to secure safety of construction works, and
- Proposals for potential improved systems.

5.4 Results

The recognition process in all responding countries is regulated by legislation and governed by at least one ministry. Professional non-governmental institutions and associations take part in the recognition process as well. However, the scale and the level of activities of professional associations in participating countries differs significantly – as of recommendations for awarding engineering titles (Iceland), providing training and disseminating information (Finland), awarding professional qualifications (Estonia), assessment of professional knowledge and expressing opinions during qualification tests for national professionals (Lithuania) as far as accredited certification according to European standard (Latvia).

Even greater variety was observed regarding regulated engineering professions – not regulated at all (Denmark), voluntary recognition of key qualifications (Finland), compulsory recognition of a few high responsibility qualifications (Iceland, Sweden), certified qualifications for almost all building profiles (24 titles in Lithuania and 29 titles in Latvia). Architect's profession should be regulated in all Member States according to requirements of the New Directive. However, not all countries give notice to that obligation. Qualification indicators in all participating countries follow the so called Bologna principles in main points.

As it follows from the results of the inquiry, the countries might be divided into two groups depending on the approach applied to guarantee safety of construction works. The first group exercises a liberal (soft) approach, based on mutual recognition of education and voluntary certification of engineering and technician professions (Denmark, Finland, Iceland and Sweden). The second group applies a strict (hard) approach requiring permit to the market only by an approval or certificate (Estonia, Latvia and Lithuania). The liberal system is the most attractive one from the point of view of facilitating mobility of professionals, which is the key objective of the project and of global importance to the European Community. Safety of construction works in this case is secured by entrusting responsibilities to supervision operators, building developers and building authorities.

The main argument of hard-line defenders is the necessity to guarantee safety of construction works by high qualified, reliable and approved operators in all crucial positions. Competence is assessed by approval procedures authorised by the State. However, competence criteria introduced in these procedures have only local character, as there is no harmonization of competence requirements achieved at a regional (Baltic) level.

Recognition systems of two countries (Denmark and Finland) are proposed as models for the liberal system. The Finnish model has a more detailed description, whereas the attractive feature of the Danish model is availability of information on recognition issues in the Internet medium. As a model for hard line supporters, would be a combination of systems of all three Baltic countries, implementing the most appropriate elements of each country, particularly introduction of profession standards (Estonian model), approval of procedures in accordance with European standards (Latvian model) and the legislative structure from the Lithuanian system. Assessing advantages of these approaches, it is impossible to give priority to any of them, as developers of the recognition systems have been guided by the necessity to provide high level of security for construction. Only the means selected for reaching these goals are different.

Results of the project are expressed as coordinated recommendations for correspondent authorities of each participating country submitting proposals to the European Commission in compliance with requirements of the New Directive. The following target groups would be interested in results of the project.

- National institutions empowered for initiation of legislation;
- Authorised management bodies for administration of the recognition process and

- Professional associations and non-governmental institutions involved in developing competence criteria for different qualifications, compiling training programmes and recognition requirements.

Finally, results of the project would be of interest for authorised governmental institutions responsible for alignment of requirements of the New Directive with national legislation. Free mobility of labour force is a crucial problem not only for the Northern Dimension countries, but also for the whole European Community (one of the four basic principles of the EU) and the New Directive is an attempt to summarize experience of more than thirty years in this area (see more in detail in the report of the first stage – *Increased exchange in the Building Sector* . *Validation of competency requirements*, TemaNord 2007:502).

However, the New Directive in its present shape does not regulate engineering professions. The only regulated profession related to the building sector is architecture, which is attributed to so called professions of automatic recognition and conditions for automatic recognition for that profession are already set (see Article 46). It means that, if these conditions are met, recognition shall be granted without additional approval procedures and any bureaucracy. Further on, initiatives according to the New Directive is to appeal to communities of critical professions (and civil engineering is one of them) to create similar systems in order to simplify recognition procedures. In other words, the intention is to develop a clear and improved system of recognition in specific areas of the economy. Nevertheless, the project is not intended for implementation of the New Directive. Results of the project (no matter how defined) will be a contribution to alignment of national legislation necessary to requirements of the New Directive. Particularly, the project is related to one requirement (Article 15) of this document and only for one specific industry (Building), however very important (citation from Article 15 follows):

For the purpose of this Article, ‘common platforms’ is defined as a set of criteria of professional qualifications which are suitable for compensating for substantial differences which have been identified between the training requirements existing in the various Member States for a given profession. These substantial differences shall be identified by comparison between the duration and contents of the training in at least two thirds of the Member States, including all Member States which regulate this profession.

5.5 Future developments

Developing the subject on recognition problems may be continued, if that will be accepted by corresponding decision making bodies. The goal of extending the research would be formulated as development of prerequisites (approach, structure, technological task) for a data base on recognition of professional qualifications in the building sector. The work on this

project has proved an urgent need for information in electronic media (Internet, down loadable data base, etc.). First, experience has shown, that every participating country has a contact point for obtaining information. However, information retrieval is rather complicated due to different approach in systematizing data. Second, experiences in Denmark has demonstrated a possibility to collect and to store information on the subject, which could be easy available by the Internet. The Working Group of the project expressed that continuation of the study on recognition problems particularly in this direction is highly recommended.

Next suggestion for future development is related to a completely different problem. Practice of teamwork obtained would be exploited for fulfilment of tasks set by the Nordic Council of Ministers in prospected programmes, if such intention will take place. In this regard, attention should be paid to current problems of building character specific for the Northern Dimension countries. For example, the problem of gathering information about testing facilities of building materials and coordination of improvement activities would be subject of common interests. The situation in the testing area is similar to recognition problems. Testing facilities are also specific to a certain region depending on geographical, cultural and historical factors. Some tests are extremely expensive and there is no use to install it in all countries. This problem is especially pronounced in small countries (actually in most of the region), where investments give no return.

It is possible to build up a regional recognition system in civil engineering in different ways, for, example, to lay brick by brick (each country separate) or by heated discussions of a teamwork, i.e. to build a piece of a wall for the EU building (partly the project's objective). Obviously, the second approach would be most effective, as resulting an outcome of a teamwork includes all advantages of this approach. The essence of the project actually is close to this goal - to find out common principles for harmonization of recognition procedures at least in the Northern Dimension region. Recognition systems of this region are substantially different, as of quite liberal requirements (Scandinavian approach) down to approval procedures by state authorised certification bodies (Baltic approach). Therefore, to harmonize these procedures would be considered as a great challenge.

In any case, the objectives of the project are not to force governments immediately to change the recognition systems, but to give a benchmark to the background of the experience of a whole region with common geographic and cultural characters. The first prerequisite of success is to understand the importance of problems hindering free mobility of labour force. To some extent, results of the project would contribute to reach such understanding and to initiate a process in finding solutions. For that reason, considerations should be made by responsible authorities of each

participating country of the region through their representatives in the Steering Group. The following scenarios may take place.

- A participating country decides not to regulate professions of building profile (including vocational professions) and no common platform is necessary in this case, as well as there is no need to participate in future activities. As a consequence, any applicant from another Member State, possessing qualification documents issued in his home country may claim rights to practice in selected professions in the recipient country despite different contents and requirements for education and practice. However, countries represented in this project do not belong to this category, as a limited number of professions is submitted to regulation in any of them (vocational professions in Denmark, professions of supervision character in Finland, Iceland and Sweden, a great number of engineering professions in the Baltic countries). As a consequence, this model is not appropriate for the present situation.
- Engineering professions are not regulated leaving some vocational professions of building character under ruling (the present Danish model). Conditions of mobility for engineering professionals should be similar to these described in p.1. Vocational professions participating in actions at EU level should be carefully followed up. If two thirds of the Member States (Article 15 in the New Directive, 2005/36/EC) will set up a committee on recognition at the European Commission, participation in this committee should be secured.
- A participating country decides to elaborate its own set of criteria, which would be presented as required in accordance with the procedure of the New Directive (model of the Baltic countries). Obviously, in this case the country should participate in future activities in the framework of coordinated actions at the EU level, particularly, to be represented in the Committee on recognition of professional qualifications at the European Commission (Commitology Committee), which is a requirement of the Directive (Article 58). The Member State representative in this case should defend his standpoint alone against consolidated versions of other Member States. As a consequence, the country should comply with rules (the Common platform) established by the Commitology Committee, if defence of its standpoint will be unsuccessful. No participation in subsequent activities in the framework of NCM programmes is required in this case.
- A group of Member States, for example countries in the Northern Dimension region join together in order to elaborate a draft common platform in order to defend a consolidated standpoint of the region (in best case – nine countries) against agreed versions of other Member States. In this case it would be useful to continue the teamwork.

6. Establishing a network for joint R&D relevant to the issues in the Action Plan

6.1 Background

Co-operation and exchange of knowledge are important premises for trade to be facilitated and mobility and cross-border construction activities to be stimulated. Research and development (R&D) plays an important role in this context by contributing with conducting survey, sharing information and developing new knowledge.

A larger and more transparent market will offer new opportunities for R&D in new processes and cooperation forms, new tools and methods for utilisation of ICT, new materials and design solutions. Thereby providing new opportunities for increasing productivity in the construction and building sector as well as obtaining a higher degree of understanding and fulfilment of user and society needs in buildings and the built environment. In addition this will support development of a more sustainable construction and building sector and improve the innovation up-take in the sector. Further a harmonization of building regulations and free mobility of labour will provide an important basis for the single market in the Northern Dimension region.

More transparent markets in terms of housing demand, economics and demography as well as the local legislation and building culture will potentially expand the markets from highly local markets to a regional single market. In addition, household mobility and economic interaction will change the housing landscape in all countries. Analytical instruments and new approaches that can support the development of a more transparent market will provide new opportunities for a more efficient housing market with a higher fulfilment of user and society needs.

Historically there has been a considerably R&D co-operation between the Nordic countries based on similarities in culture, climate and traditions. This is now being gradually expanded to the other countries in the Northern Dimension region. However lack of funding possibilities and other incentives for joint R&D is creating greater barriers to future expansion of joint R&D in the region.

A joint network for R&D in the region will strengthen the research capabilities and possibilities for joint research projects utilising the regional advantages. Further it will provide an excellent platform for influence on and success of the European research programmes and considera-

tion for a joint European Research Area (ERA). In particular it will support and strengthen the possible outcome of the European Construction Technology Platform (ECTP) for the region. Further the joint Network for R&D will be an important research advisory panel for decision-makers in the various countries regarding research aspects on building and construction. In the long term, the network will contribute to a more transparent and harmonised building and construction market in the Northern Dimension region.

6.2 Goals and objectives

The overall goal of the Nibcor project has been to develop and establish a co-operation programme for a regional network for joint R&D in building and construction relevant to the issues in the Action plan.

The project has been intended to be fulfilled in three phases. The objective of the first phase was to develop a co-operation programme.

The objective of the second phase was to establish a regional network that could contribute to identification of research challenges, dissemination of knowledge and to strengthen the research co-operation in the region.

The objective of a third phase will be to support the running of a regional network, and thereby supporting identification of research challenges of common interest, dissemination of knowledge and strengthening the research co-operation in the region.

6.3 Administration

The Steering Group for the Action Plan discussed the project and made useful comments concerning the first phase. The project management was carried out by the Nibcor Steering Group comprising Director Lone Møller Sørensen (project leader) and senior researcher Kresten Storgaard, Danish Building Research Institute, and Professor Bengt Turner, Uppsala University until his all too early death. Thereafter Professor Rune Wigen, Uppsala University took up his function.

A working group with one member from each of the participating countries was established according to the Action Plan. Together with the Nibcor Steering Group the Working Group provided a proposal for the next phase of the project. The Nibcor Working Group was a central actor in the Nibcor programme, phase 2. At a workshop in Helsingore, Denmark in January 2007, and at a following Working Group meeting, themes for further action were taken.

6.4 Executive process and results

All members of the Working Group have participated in providing input and initial prioritising of the research topics at the Workshop in Copenhagen in June, 2006, except for the members from Poland and Latvia who due to political situation and the time constraint for the project were not able to provide input for the first phase. Keynote presentation was given at the workshop by Christophe Lesniak, DG Research EU Commission and by Knud-Erik Busk, chairman of the Danish Client Association, Chairman of the Danish National Technology Platform and Member of ECTP High Level Group. A draft report has been circulated to all members of the Working Group for correction and approval.

Some 30 researchers and administrators representing 15 stakeholders in the building segment in the Northern Dimension region, participated in the Nibcor workshop in January 2007, in Helsingore. In a following workshop for the Working Group, decisions for further dissemination on the Nibcor home site of three themes were made.

A number of regional or European research initiatives covering both networks and funding programmes for building and construction exists. Even though some of the programmes have elements which could support the Action Plan, none of these have the same research objectives.

Therefore developing and establishing a co-operation programme for a regional network for joint R&D in building and construction relevant to the issues in the Action Plan has been identified as a central part. However co-operation with relevant networks and funding programmes will be an important part of the Nibcor project. In addition a joint R&D network will strengthen the research capabilities in the region and provide an excellent platform for influence on and success in the regional and European research programmes.

Through a workshop and correspondence with a national member of each country in the Northern Dimension region three research areas were identified as key focus areas for Nibcor.

- Meeting client and users requirement;
- Transformation of the Construction Sector;
- Digital Built environment.

These were selected as important research areas for reduction of barriers to cross-border transfer of research, knowledge and building activities.

Further an initial screening of research partners in the Northern Dimension region has given a first overview of the research partners. This shows a potential for an increased R&D cooperation both with partners with similar and with complementary research competence.

The objective of Phase 2 of the project has been to establish a regional network for joint R&D in building and construction covering research

issues relevant for the Action Plan. Phase 2 included an activity plan for establishing a regional network for joint R&D, covering

- Vision and research areas – Confirmation of key focus research areas;
- Mapping of research partners and barriers for cooperation;
- Research project portfolio preparation – from exchange of ideas to support and facilitate combined research initiatives.

Central in Phase 2 has been the completion of a workshop for stakeholders in the building industrial complex, including firms, researchers and administrators to identify central themes for research and development.

A home site for the Nibcor project was established as well, for information and communication between stakeholders in the sector.

Phase 3, concerning activities to support and facilitate the network as well as completion of R&D projects with commercial potential for the sector has not been completed, but funding has been sought for without success so far.

6.5 Overview of existing research initiatives on regional level

An overview of the major existing research initiatives has been given covering both networks and initiatives by funding organisations with influence on the region of the Northern Dimension.

European Construction Technology Platform – ECTP

The European Construction Technology Platform (ECTP) was launched in October 2004 at the B4E Conference. ECTP is a network formed by all stakeholders in the building and construction sector with the purpose of positioning the sector for the coming research programme in Europe (see www.ectp.org). The technology platforms are an instrument founded by the European Commission and are industry lead. Today ECTP is supported by representatives of major stakeholders of the construction sector and by the European Commission. It gathers more than 700 individual members working at the European level. The ECTP has developed a vision for a sustainable and competitive construction sector by 2030.

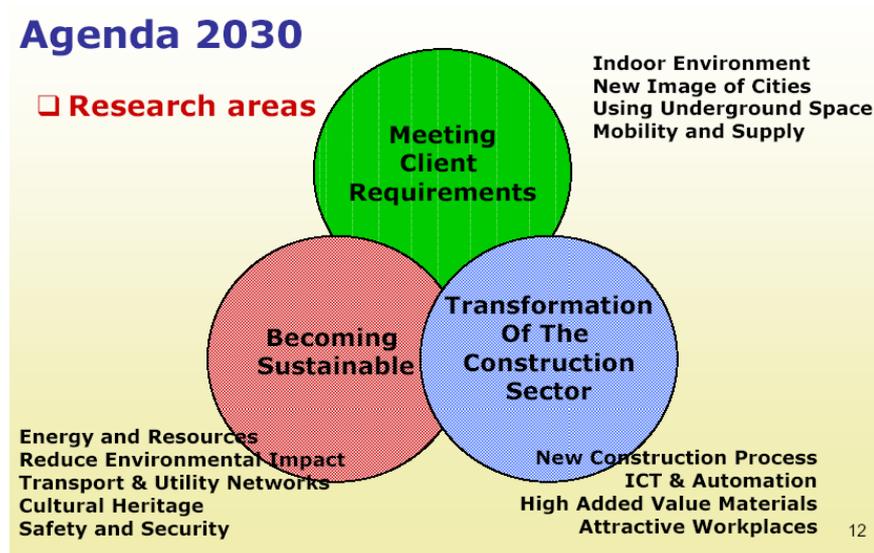


Figure 1. ECTP Vision 2030

Based on the vision and the research agenda ECTP has identified the following priorities for research.

- New technologies, concepts and high tech materials for efficient and clean buildings;
- High added value construction materials;
- Reduced environmental and man-made impacts on landscape and cities;
- Improved safety and security;
- New integrated processes;
- A living cultural heritage for an attractive Europe;
- Underground innovative construction technologies;
- Sustainable management of transports and utilities networks;
- Nanotechnologies for materials in construction.

ECTP is in close dialogue with the Commission and the relevant DG's about research priorities for the European Framework programme, FP7.

National Construction Technology Platforms

In order to involve the many stakeholders of the construction sector a network of National Construction Technology Platforms was established under ECTP. Today more than 25 national platforms exist in Europe. For a large number of the participating countries in the Northern Dimension region a national platform has been established or is in process of being established.

Countries with national platforms in the Northern Dimension region

- Denmark
- Finland
- Estonia
- Lithuania
- Norway
- Poland
- Sweden

The vision and the research agenda of ECTP has partly been adopted by National Technology Platforms in most of the participating countries in the Northern Dimension region.

Together with 18 National Platforms ECTP has launched a Eureka Umbrella on construction related projects to develop some SRA priorities through Eureka projects.

European Network for Housing Research – ENHR

The Network

- Sponsors major international conferences every two years;
- Publishes a comprehensive Newsletter four times a year;
- Provides a framework for nearly twenty working groups;
- Encourages smaller conferences and seminars every year;
- Has an active group of PhD students (new housing researchers).
- (See: www.enhr.ibf.uu.se/).

The Network is composed of researchers from a variety of social science disciplines dealing with housing and urban issues. In addition to its basic goal of supporting research, the Network also seeks to promote contacts and communications between researchers and practitioners within the housing field. Membership can either be in the form of individual membership or of institutional membership.

ENHR was established in 1988 and now has more than 1000 individual and nearly 100 institutional members representing every country in Europe. In addition to a general assembly held every two years, the ENHR is directed by a democratically elected board, the Coordination Committee. A secretariat including the editorship of the ENHR Newsletter is located at the Institute for Housing and Urban Research, Uppsala University, in Gävle, Sweden.

European Network for Building Research Institutes – ENBRI

The European Network for Building Research Institutes (ENBRI) links the leading, non-academic centres for building and construction research in Europe (see: www.enbri.org/). Its 21 members employ in total over 3000 professional research staff. The aims of ENBRI are

- To promote cooperation among its members, and with the European Commission and stakeholders of the European construction sector, in order that ENBRI members may contribute effectively to the improvement of competitiveness, sustainability, quality and safety of the built environment;
- To promote the benefits of investment and development in construction and the built environment at regional, national and European levels;
- To advise policy makers and wider public on issues related to research and innovation in the built environment.

Key elements in supporting these aims are research, innovation and knowledge transfer activities for development of the built environment.

Based on the challenges that the built environment is facing today and its strong link with both industry and government bodies and their broad expertise within in the built environment it is the vision of ENBRI to contribute to the development of a sustainable and knowledge-based European construction sector, which is competitive, innovative, market driven and meets users and societal needs by providing the best living and working conditions for all people.

The main action lines identified to reach this vision are respectively concerned with

- Raising environmental standards;
- Fulfilling user and stakeholder requirements and aspirations;
- Changing construction processes and relationships;
- Updating and improving the built environment;
- Exploiting new materials and technologies;
- Promoting education and training, knowledge transfer, quality employment and innovation.

Nordic Innovation Centre

The Nordic Innovation Centre is the Nordic Council of Ministers single most important instrument for promoting an innovative and knowledge-intensive Nordic business sector (see: www.nordicinnovation.net/). The basic assumption is that each of the Nordic countries possesses knowledge, which through increased co-operation significantly will improve innovation capabilities and competitiveness for Nordic businesses.

Nordic knowledge platforms

Today, the Nordic Innovation Centre is an important player in Nordic knowledge platforms within the areas of innovation policy, creative industries, biotechnology, food safety and innovative building & construction. Establishing common Nordic knowledge platforms on strategically important areas give Nordic businesses access to the best knowledge possible and greatly enhance their innovation capabilities. It is the believing that building common Nordic knowledge markets are vital to all Nordic business life, enabling firms and institutions to compete in a global market which is becoming more and more knowledge driven.

Investments

The total project portfolio of the Nordic Innovation Centre consists of approximately 120 ongoing projects and networks. Together with several hundred completed projects of great value to Nordic businesses, these projects involve the Centre in nearly all strategically important Nordic areas.

Innovative Building

One of the preconditions for living in the Nordic Region is a building shield is of high quality. The traditional market in building and building materials are under change, pushed by new materials, new transnational regulations and a free market for services and labour. A vision can be to

"Establish and develop a new approach for the Nordic property and construction industry – while there are still opportunities. Go in advance of the rest of Europe in working for change that entails very profound consequences for both society and the individual".

ERABUILD

ERABUILD is a strategic co-operation between national programmes promoting sustainable construction and operation of buildings (see: www.erabuild.net/). ERABUILD aims at having a major impact on creating the European Research Area (ERA) in research on sustainable development in the construction and operation of buildings. A step towards this aim is planning and preparing a trans-national R&D programme in the area. A short term goal for the project is the development of a learning network of governmental organisations. The ERABUILD will be running from 2004–2007 and the partners are Finland, Austria, Denmark, France, Germany, Netherlands, Sweden and United Kingdom.

ERABUILD has identified the following three areas for future research needs.

- Renovation and Maintenance;
- Energy in the Building Sector;
- Processes.

So far three joint-calls have been carried out with the following titles.

- Managing information in construction;
- RFID – state of art report;
- Transformation of the construction sector through industrialisation.

Summary

None of the identified networks or initiatives by funding organisations has the same research objectives as the Action Plan. However most of those have elements which could support the Action Plan. Therefore it will be an important part of Nibcor to co-operate with the relevant networks and funding programmes. Through Nibcor it will be possible to strengthen the synergy between the relevant parts of the other programmes and networks for the benefit of the Action plan.

6.6 Vision and Research Areas

As a central part of the initial phase of the project a workshop was held in Copenhagen with national representatives of the participating countries of the Northern Dimension region. The national input on research areas for the Nibcor programme are given in appendix. Through the workshop and a following up correspondence the following five research areas were identified as potential main topic areas for the proposed Nibcor programme.

- Meeting clients and users requirements;
- Transformation of the Construction sector;
- Digital Built Environment;
- Becoming Sustainable;
- Building technology and high added value materials.

Together they will have the potential to support the development and expansion of the Northern Dimensions markets from highly local markets to a regional single market, a demand-driven market with more innovation, higher quality and reduced construction costs and building prices.

Meeting clients and users requirements

Market/Business drivers, impacts and potential

- Increased demand for customer and end user influence on the design of products and systems; diversification of the customer and user segments based on demography, wealth, region, trend etc.;

- Increased quality requirements on the performance of the built environment and increased capabilities to simulate the psychical phenomena and human response;
- Transparent markets in terms of housing demand, economics and demography, legislation and regulation;
- Pressure to reduce construction costs and building prices through better procurement.

Research focus and scientific goals

- Understanding and defining user and society future needs in a business perspective;
- Demand studies (modelling and forecasting of build and human environment) including housing wealth, mobility and demographic changes, cost of building and planning regulations;
- Total lifecycle management;
- Value-based procurement including new procurement methods and their legal barriers in terms of partnerships and operation etc (public-private partnerships (BOOT, BOT));
- Financial integration and guarantee systems for clients/residents;
- Knowledge base of best practice including user feedback, benchmarking;
- Remove barriers in regulations as a basis for deliberations in possible harmonization – identification & research of consequences on possible changes.

Transformation of the Construction Sector

Market/Business drivers, impacts and potential

- Increased global competition, low profit margin in the sector, fragmented sector dominated by small firms, bad image and safety record, low quality, high price;
- Pressure to increase productivity and quality in the construction sector;
- Diminishing workforce in general or for construction sector will increase the need to increase the productivity and attract other groups of resources.

Research focus and scientific goals

- New integrated processes (partners, industrialization, productivity, claims by delivery);
- Competence requirements and free mobility of resources (labour, materials and activities);
- Impact of shadow market/economy;
- Building cost analysis + management studies, competition;

- Remove barriers in regulations as a basis for deliberations in possible harmonization – identification & research on consequences of possible changes.

Digital Built Environment

Market/Business drivers, impacts and potential

- Due to aging and diminishing workforce as well as increased global competition there is a pressure to radically improve the productivity of the whole real estate and construction sector from the product manufactures to the owner;
- Need for better, more flexible and reliable control of conditions and operating costs according to diverse customer requirements;
- High business potential.

Research focus and scientific goals

- New integrated construction processes with dynamic supply networks (web, e-integration) including digital tender and procurement, both internal and across company boundaries in the building process;
- Information management over the lifetime of the products and systems in the built environment;
- Integrated product models: interoperability, simulation and visualization;
- ICT-based services for mobile users;
- Ubiquitous environment: sensor networks combined with adaptable materials;
- Life-long learning and intelligent tutoring systems.

Becoming sustainable

Market/Business drivers, impacts and potential

- The built environment accounts for nearly 50% of the resource consumption and has a large environmental impact. With the consideration for the environment and energy shortage there is a huge need for development of concepts, business models, technology, materials and solutions for energy and resource reduction, which generates new business opportunities;
- A high percentage of the people live in the cities. However due to wealth, pollution, quality of housing and urban areas people are increasingly moving out of the inner city. Therefore there is a huge need to upgrade a large proportion of the building stock and urban areas;
- Urban sprawl as a result of conflicting individual demands and societal needs for less traffic, less energy consumption;

- Public and commercial demand for measures against crime and terror and to mitigate consequences of accidents and natural disasters.

Research focus and scientific goals

- New technologies, concepts, business models and materials for resource efficient and clean buildings and urban areas based on users needs and lifecycle management;
- Total lifecycle management – modelling, forecasting and operation of the build and human environment;
- Integrated design tools, information systems and manufacturing technologies for high efficient buildings (energy, raw materials, water, low energy industrial processes) fulfilling users needs in terms of comfort, design and price;
- Detection, identification, protection and assessment methods for safety and security of people, critical infrastructures, industrial production systems;
- Urbanisation, suburbanisation and urban sprawl; Segregation and integration – social cohesion;
- Remove barriers in regulations as a basis for deliberations in possible harmonization – identification & research on consequences of possible changes.

Building technology and high added value materials

Market/Business drivers, impacts and potential

- Quest for more carefree, durable, safe and economical products in various industrial and consumer applications to fulfil user requirements including customized properties;
- Demand for sustainable growth, reduction of environmental impact: less materials, durable materials and recycle materials.

Research focus and scientific goals

- Durability /rehabilitation, performance of products and structures under long-term or extreme exposure;
- Building technology;
- New materials and design solutions, new-fibre based, high added value building products, new and modified materials and methods to bond materials into composites and structural systems;
- Functional and nano materials using new technologies of bio, nano and it to provide new performance and value of buildings products and systems to the end-user.

Summary

In the Nibcor programme it was recommended especially to focus on the topics important for reduction of barriers to cross-boarder transfer of research, knowledge and building activities. The following three areas were seen as especially important.

- Meeting client and users requirement;
- Transformation of the Construction sector;
- Digital Built Environment.

6.7 National research partners and networks

Table 2. The Nibcor Working Group

	Name
Denmark Project Leader / Secretariat	Ms. Lone Møller Sørensen, Director, Danish Building Research Institute (SBI) Kresten Storgaard, Senior Researcher, SBI
Iceland	Mr. Haakon Olafsson, Director, Icelandic Building Research Institute (IBRI)
Estonia	Mr. Roode Liias, Professor, Dean, Faculty of civil engineering, Tallinn University of Technology
Latvia	Mrs. Silvija Strausa, Latvia University of Agriculture
Lithuania	Mr. Arturas Kaklauskas, Professor, Vilnius Gediminas Technical University
Finland	Mr. Matti Kokkala, Research Director, VTT Technical Research Centre of Finland
Norway	Mr. Bjørn Svensvik, Professor, Director, SINTEF Bygforsk
Poland	Mr. Roman Gajownik, ITB
Sweden	Mr. Bengt Turner, Professor, Chair, Institute for Housing and Urban Research, Uppsala University, Sweden Mr Rune Wigren, Professor, Uppsala University
Project Coordination Group	Bengt Turner, IBF Uppsala University, Lone Møller Sørensen, SBI, Rune Wigren, Uppsala University.
Programme Coordinator	Mr. Bengt Nyman, Director

In all countries in the Nordic Dimension region research in Building and Construction deliver important results for the industry and governmental bodies, participate in education of students to the sector, and participate in international cooperation. But scope, amount of research effort, strength and focus differ to some degree. This also accounts for the national partners performing building and construction research. Below is given an initial overview of the main national research actors in the field.

The overview is based on the workshop for the Nibcor Working Group, taking place at SBI, Copenhagen, in June 2006, and supplementary inputs from the working group.

Sweden

In Sweden research in building and construction are carried out on the main Universities and Technological High School. Institute for Housing and Urban Research (IHUR) at the University of Uppsala is a multidisciplinary research department which covers a wide variety of issues concerning housing and the built environment. Mainly financed by the university budget (75%) also external funding from research fund and various partners are seen, including EU programmes. In Interreg III B programmes projects in the Baltic region is carried out. In the research the institute emphasis cooperation with the other departments at Uppsala University and in other parts of the academic environment and the importance of large, coordinated projects, where a thematic and disciplinary focus is integrated.

The international cooperation is encouraged and there are cooperation agreements with large research departments in Europe (Delft, Glasgow, Cardiff, York, Berlin). The Institute has in-house international journals as HTS (Housing, Theory and Society) and EJHP (European Journal of Housing Policy). The Institute is host for a regular Nordic research seminar (IBF/NSBB) and invite regularly guest researchers to the Institute. Also the Institute are heavily involved in the ENHR (European Network for Housing Research), which involves more than 100 research institutions and nearly 1000 individual members all over the world. Affiliated organisations, created by EHNR are APNHR (Asia-Pacific Network for Housing Research), ANHR (Arabic network for Housing Research), SSNHR (Sub-Sahara Network for Housing Research) and LANHR (Latin America Network for Housing Research).

Iceland

In Iceland research in building and construction is mainly delivered by the IBRI (Icelandic Building Research Institute). IBRI is an independent research institute which falls under The Ministry of Industry and Commerce. Its main activities are applied research and technical testing for the whole of the building and construction industry. The concrete division is experienced in material technology and durability and has been acknowledged as one of the leading centres in the field of rheology of cement based materials. Emphasis has been on international collaboration and cooperation and IBRI is currently a partner in eleven EU research projects funded in the 5th framework program on RTD. For the last two years IBRI has been in charge of the presidency of ENBRI (European Network of Building Research Institutes).

Estonia

In Estonia there are not any specialised research institutions for the building and construction sector. At the Tallinn University of Technology research are carried out with importance for the sector. Especially the Departments for Structural Design, for Building Production and for Environmental Engineering are central for the research in sector. At the Government level The Ministry of Economic Affairs and Transportation (Department for construction and housing) and The Ministry of Interior (Planning Department – spatial planning) is of importance. Co-operation with other institutions and partners is carried out with Estonia University of Life Science, Estonia Academy of Arts, Tallinn College of Engineering and Estonian Centre for Standardisation.

Participation in international research projects takes place especially in Interreg programs and also in UN-programs.

Lithuania

In Lithuania research in building and construction is mainly delivered by the Civil Engineering Faculty at Vilnius Gediminas Technical University. At the Department of Construction, Economics and Real Estate Management (CEPM) researchers participate in more than twenty European (EC) and US projects. Master students from all over Lithuania are studying in three e-learning master programs: Real Estate management, Construction Economics and Internet and Real Estate Business. The master courses are given in three languages (Lithuania, Russia and English). Spheres of current research are Web-based intelligent systems for building and construction, life-long learning and intelligent tutoring systems, development of knowledge base of best practice and knowledge systems for the build and human environment, exchange and developing of new knowledge, electronic collaboration, e-cities, e-government, retrofit, facilities and real estate management, clean built and human environment, integrated building life cycle analysis, total life analysis, modeling and forecasting of build and human environment, sustainable development, innovation management, total quality management, improvement of competitiveness, sustainability, quality and safety of the built environment, fulfillment of user and society needs.

Finland

In Finland, VTT Technical Research Centre of Finland, carries out research for the building and construction sector. Competitiveness of enterprises is the key to all major research activities – and a long tradition of Public Private Partnerships in R&D funding and projects exist. VTT, Helsinki University of Technology and Tampere University of Technology are working on creating a virtual institute in the construction sector.

The Ministry of Environment is responsible for buildings and the built environment, but has hardly any R&D funds available for the sector. The most important performers of research in the public sector are VTT, financed especially from TEKES (the Finnish Funding Agency for Technology and Innovation) and are organized under Ministry of Trade and Industry. A Vision for 2010 is developed by Finland's Real Estate and Construction Cluster in 2000 and TEKES has developed a Technology Programme, which has been input for the VTT strategic programme for 2007 to 2011.

Financed by TEKES as well as by other ministries are also other research institutes as the TE-Centres, where research activities in relation to Construction are carried out as well. Under the Ministry of Education are the Universities, where research in Building and Research are seen at Helsinki Universities of Technology and Tampere University of Technology. The role of national borders is disappearing in R&D policy, and an open platform approach is seen. VTT carry out R&D in cooperation industrial and business enterprises, organisations, universities and research institutions. VTT participates in many international projects and in the Finnish national R&D policy, cooperation with technology leaders like US and Japan are above everything else. EU is seen as a domestic market. VTT have had a heavily impact on the pan European ECTP work and participate in significant RP projects, as RoadCon.

Denmark

In Denmark the main part of research in building and construction take place in 9 universities and research institutions, including Danish Building Research Institute (SBI), Technological Institute, Aalborg University, Danish Technical University, Copenhagen Business School, Copenhagen University, Roskilde University, The Royal Academy of Fine Arts and Aarhus School of Architecture. Beyond this, research is carried out in private firms.

National R&D funding is primarily the responsibility of The Danish Research Councils. Further State Governmental Bodies, such as National Agency for Enterprise and Construction, also influence the research activities, especially by (co)funding activities.

Private firms (consulting and architecture, contractors, developers, etc) as well as trade organisations participates in networking activities related to research, and have been active in the national ECTP work. The Danish National Platform is headed by the chairman of the Danish Client Associations.

Danish research institutions participate in international EU FP projects and in the ECTP work at a pan/trans European level as well as in UN programmes. Participation in further international research organisations as ENBRI, CIB, ENHR are especially covered by SBI.

Norway

Construction related R&D in Norway is primarily performed at NTNU (the Norwegian University of Science and technology) and the two major research institutes – SINTEF Buildings and Infrastructure (merger of the previous Norwegian Building Research Institute and the construction related parts of SINTEF) and the Norwegian Geotechnical Institute (NGI). Research is, however, also conducted at several smaller institutes e.g. linked to regional university colleges and by several of the more technology active private companies and public authorities. The Norwegian Public Roads Authorities, with their several laboratories and the cement producer Norcem (a company in the Heidelberg Cement Group) have traditionally been among the most active R%D performers outside the institutes.

The Federation of Norwegian Construction Industries, BNL – organizing the majority of Norwegian construction related industry has established an innovation forum with the aim to promote construction R&D. This forum (FIB) joins together leading representatives from contractors, consultants, building materials producers, branch organizations, building owners/developers, public authorities, research institutes and universities. The FIB also acts as the HLG for the Norwegian technology platform of the ECTP, the secretariat of which is handled by SINTEF Buildings and infrastructure. National R&D funding is primarily the responsibility of The Norwegian Research Council – who is also the official representative versus the EU research programs. Besides, funding of innovation activities/close to market research programs are handled by Innovation Norway.

Summary

Networking is increasingly essential for the research going on in all countries in the Northern Dimension region. The focus in research differs and potentially the research at the different institutes and countries can be complementary to each other. Often diversity in research is not followed by cooperation and there is a tendency for cooperation to take place between partners similar to each other. A need for a special effort to strengthen cooperation can be identified.

A more efficient cooperation between the research institutes to get the advantages of this diversity is seen to have the ability to strengthen the research in all countries independent of the current state and scope of research in each country. Also a will to participate in such a process of collaboration is found.

7. Proposed activities for further cross-border co-operation

A conclusive seminar on a draft version of this report was organized in Stockholm in June, 2009. Invited participants were Members of the Steering Group as well as project leaders of the Action plan program and representatives for the Nordic Innovation Centre (NICE) and the Secretariat of the Nordic Council of Ministers. Representatives for the Building Industry in the participating countries were also invited as well as Era-cobuilt and DG Internal Market of the European Commission.

At the seminar completed projects of the Action plan program were reported and discussed. Proposals for further collaboration were also discussed as one task for the Steering Group and the Coordinator has been to propose further measures for cross-border co-operation to remove entry barriers to the national markets for housing construction, according to the Ministerial decision in November 2004.

As mentioned already in the Ministerial decision the process initiated by the Action plan should be seen as the first step on the road towards increased integration of the construction market and it can be expected to be a long process. It was emphasized that it will be of crucial importance that the business sector has access to easily accessible information on other markets if the ambition for an increased exchange is to be realized.

The seminar stressed the fact that the most important project from that point of view (*Making market information accessible to potential actors*) has not been completed and that it should be of most importance to fulfil that mission with a focus on facilitating SMEs and specialized companies in the building sector. The intention should then be to create a publicly accessible database with information on best practices and regulations in the countries that are of importance for the actors in the building sector. Examples are information on contractual conditions, tendering rules, general and technical provisions, requirements on guarantees and insurance, construction workers health and safety, etc.

All the completed projects have generated proposals for further cross-border co-operation which were accepted and strongly recommended by the seminar as an appropriate point of departure for a plan on how to continue the cooperation. Then it will be up to NCM and concerned countries to decide on organization and financial resources for further collaboration.

The proposed activities are as follows.

- *Finding new ways to share knowledge on reducing construction costs*
The intention should be to develop a co-operation program including government and industry involvement aiming at reducing the costs for housing construction. Quality aspects as well as sustainable development should be considered.
- *Harmonize systems for independent control in the building legislation*
According to the Action plan the comparative analysis of regulations should serve as a basis for deliberations on possible harmonization measures or other changes in legislation aimed at making it easier for companies to do business. As several countries are looking for systems for independent control when preparing major revisions of their building legislation, harmonization of such systems should be a suitable piece of work for further co-operation.
- *Harmonize the procedures for recognition of competency requirements on actors in the Building Process*
Danish experiences showing a possibility to collect and to store information on recognition of professional qualifications and to make it available by the Internet should be shared by all the countries in the Northern Dimension region. Recognition systems of the region are substantially different and to harmonize these procedures would be considered as a great challenge.
- *Running a network for joint R&D relevant to the issues in the Action plan*
According to the conclusive seminar some institution should be given the responsibility to initiate and to run the proposed network for joint R&D (Nibcor Phase 3) including to apply for financial resources.

Sammanfattning

Utvidgningen av EU under 2004 till att även omfatta länder i de nordiska ländernas omedelbara närhet skapade en potential för ökad konkurrens inom byggsektorn i hela regionen. För att utnyttja den situationen initierade Nordiska Ministerrådet en handlingsplan som hade tagits fram i nära samarbete med berörda ministerier i de nordiska och baltiska länderna samt Polen. Visionen var att göra en mer framgångsrik bostadspolitik möjlig i de berörda länderna som kan bidra till ökad nytta för svagare grupper i samhället genom att reducera inträdeshinder till nationella byggmarknader och stimulera till ökad konkurrens för att på det sättet reducera byggkostnader och byggnadspriser.

Ett nödvändigt krav för ökad konkurrens är att inträdeshinder till marknaden elimineras. Syftet med EUs interna marknad är att varor, tjänster, kapital och människor fritt skall kunna röra sig över nationella gränser. Men i praktiken är inte den interna marknaden ännu genomförd i alla avseenden och det finns fortfarande många hinder – i byggsektorn liksom i andra näringsgrenar – för fri rörlighet mellan medlemsländerna inklusive medlemmarna i EES. Det grundläggande syftet med handlingsplanen har varit att förbättra möjligheterna för ett ökat utbyte över gränserna och att lyfta fram politiska åtgärder för att stimulera ett sådant utbyte. Dessa åtgärder omfattar även att underlätta för marknadens aktörer att göra åtaganden i andra länder än där de normalt har sin verksamhet.

Studier har visat att det finns en rad formella och informella barriärer som förhindrar tillträdet till nya byggmarknader i länder runt Östersjön. Utmaningarna är därför betydande och kommer att kräva en rad åtgärder för att stimulera ett ökat gränsöverskridande utbyte i syfte att öka konkurrensen. De främsta utmaningarna som fokuseras i handlingsplanen är:

- Brist på information om utländska marknader och marknadsförhållanden,
- Skillnader i byggsektorns regelverk,
- Begränsningar i arbetskraftens rörlighet.

I ljuset av de utmaningar som byggsektorn står inför lovade de samarbetande regeringarna gemensamt att ta initiativ till att driva eller på annat sätt medverka i följande aktiviteter:

- Att göra marknadsinformation och information om nationella regelverk tillgänglig för potentiella aktörer på marknaden,
- Att utvidga underlaget för spridning av erfarenheter och ny kunskap i bostadsbyggandet,

- Att genomföra en jämförande analys av regleringar inom byggsektorn i syfte att skapa underlag för överläggningar om möjliga harmoniseringar,
- Att göra det möjligt att jämföra kompetenskrav som ställs på vissa aktörer i byggprocessen samt
- Att etablera ett nätverk för gemensam forskning och utveckling i frågor som är relevanta för handlingsplanen.

När regeringarna beslutade om handlingsplanen lade de också fast ett organisatoriskt ramverk för samarbetet med en programkoordinator och en styrgrupp. Styrgruppen beslutade i sin tur om riktlinjer för arbetsgrupper som knöts till projekten. Ministermötet avdelade inga finansiella resurser för programmet och en huvuduppgift för styrgruppen har varit att bistå de nationella processer som krävs för att finansiera projekten. Åren 2005–2008 har styrgruppen beslutat om sammanlagt DKK 5 161 000 i bidrag till projekt och programkoordinering. Omkring två tredjedelar (63%) har finansierats av Nordiska Ministerrådet med årliga bidrag och en tredjedel av nationella bidrag från medverkande länder.

En annan viktig uppgift för styrgruppen har varit att möta representanter för byggindustrin i medverkande länder i syfte att få information om marknadsförhållanden och branschens utvecklingsmöjligheter på de nationella marknaderna. Några iakttagelser från dessa möten tycks vara gemensamma för byggindustrin i hela regionen, såsom:

- Brist på välutbildad arbetskraft,
- Stigande arbetskostnader,
- “Grå” ekonomi som ett växande problem.

Gör aktuell marknadsinformation tillgänglig för potentiella aktörer på marknaden

Med hjälp av en allmänt tillgänglig kunskapsdatabas på Internet så har det antagits att aktörer på byggmarknaden kan få information om bästa sättet att hantera hinder som finns för att göra affärer i andra länder. Avsikten har varit att utveckla en allmänt tillgänglig databas med information om bland annat best practice och om regelverk som har betydelse för aktörer i byggsektorn. För att på ett optimalt sätt kunna anpassa urvalet av information och utvecklingen av en databas till den avsedda målgruppen skall arbetet ske i nära samarbete med representanter för marknadens aktörer. Informationen skall utföras främst för små och medelstora företag och vara en del av en kontinuerlig process.

Polen ombads att organisera och leda detta projekt och det polska byggministeriet utsåg en projektledare från ett institut underställt ministeriet. På grund av personliga omständigheter lämnade emellertid projekt-

ledaren sitt uppdrag efter en tids förberedelser och det blev sedan för sent i tidsschemat för hela programmet om handlingsplanen att omorganisera arbetet. Projektbeskrivningen i denna sammanfattande rapport är därför endast ett förslag för det utvecklingsarbete som krävs, eftersom de ursprungliga planerna inte har kunnat fullföljas.

Bredda underlaget för erfarenheter och nyvunnen kunskap i bostadsbyggandet

Höga markpriser och höga kostnader för arbetskraft och byggmaterial är problem i många länder, särskilt i snabbt växande områden. Ett utbyte av erfarenheter och nyvunnen kunskap mellan berörda länder är en viktig förutsättning för att kunna reducera byggkostnader och byggpriser. En större och mer transparent marknad kommer att kunna erbjuda större möjligheter för nya processer och samarbetsformer, nya verktyg och metoder för användning av informations- och kommunikationsteknologi (ICT) samt nya material och konstruktionslösningar.

En orsak till ökande bostadskostnader är minskande produktivitet i byggsektorn tillsammans med höga kostnader för byggfel. I de flesta länder har produktivitetsutvecklingen inom andra industrigrenar under senare år varit mycket bättre. Ett sätt att uppnå ökad produktivitet med färre byggfel vore att använda ett mer industrialiserat arbetssätt. Med ett mer industrialiserat arbetssätt skulle engångsprojektering kunna ersättas av kontinuerlig produktutveckling i syfte att höja kvalitén och minska kostnaderna.

Ett annat medel för ökad produktivitet är ökad användning av ICT. Undersökningar visar att en väsentlig del av byggkostnaderna orsakas av en fragmenterad byggprocess och bristande kommunikation mellan aktörerna. Ökad användning av ICT inom sektorn är av yttersta vikt för möjligheterna att få en snabbare och effektivare byggprocess, som kan resultera i bättre produkter för byggherrar och konsumenter.

Det långsiktiga målet för det här projektet, som har letts av Byggkostnadsforum vid Boverket i Sverige, har varit att bredda underlaget för erfarenheter och nyvunnen kunskap om hur kostnaderna för bostadsbyggandet kan reduceras med hänsyn tagen till kvalitetsaspekter och kraven på en hållbar utveckling. Syftet med en första etapp har varit att undersöka, beskriva och analysera initiativ som redan har tagits i de berörda länderna.

En gemensam slutsats av nationella beskrivningar i frågan var att alla samarbetande länder har haft problem med skenande byggkostnader och bostadspriser, trots en historiskt låg inflation. Orsakerna skiftar emellertid och i de fall där det har funnits en politisk vilja att vända utvecklingen har metoderna varierat.

Trots stora ansträngningar i de nordiska länderna att begränsa kostnaderna i bostadsbyggandet så har inte produktiviteten förbättrats under senare år och är i de flesta fall sämre än inom andra industrisektorer.

För nya medlemsländer har anslutningen till EU lett till betydande utflyttning av utbildad arbetskraft, vilket har varit till stor skada för de inhemska byggföretagen i dessa länder. Förutom ökad efterfrågan och högre priser på byggbar mark ökar kostnaderna för bostadsbyggandet även på grund av kapacitetsproblem när efterfrågan har varit hög.

De berörda länderna har ett gemensamt intresse av att samarbeta i syfte att hitta nya sätt att dela kunskap och reducera byggkostnader. Diskussioner vid ett seminarium 2007 visade en betydande enighet om några ställningstaganden som underlag för ett framtida samarbetsprogram under 3–5 år med målet att reducera kostnaderna för bostadsbyggandet med hänsyn tagen till kvalitetsaspekter och kraven på en hållbar utveckling. Byggsektorn (med professionella byggnadsägare och byggherrar) måste vara involverad i aktiviteterna, eftersom den är målgruppen för de åtgärder som syftar till att uppnå ett mer effektivt bostadsbyggande. Samarbetsprogrammet skall leda till förslag om de verktyg som regeringar och byggindustrin behöver för att kunna hantera situationen.

Jämförande analyser av regleringar i byggsektorn

I det här projektet, som har genomförts av Sintef Byggforsk i Norge (tidigare Norges Byggforskningsinstitut), har byggnadslagstiftningen i alla nio medverkande länder jämförts och generella mönster och likheter länderna emellan har fokuserats. Dessutom har projektet omfattat en fallstudie om kontrollsystemen, eftersom det är ett betydelsefullt område med stora olikheter i de huvudsakliga principerna. Flera länder arbetar för närvarande med att förbättra sina kontrollsystem.

Principerna om frihandel inom EU/EES-området stimulerar aktörer i byggsektorn liksom inom andra näringsgrenar att söka nya marknader. Samtidigt arbetar alla länder nu med att omvandla tekniska krav till funktionskrav och med att införa nya EU-direktiv. Lagstiftningen blir således mer likartad och i alla länder har de ändringar som genomförts under 2000-talet även fokuserat på förenklingar och en mer flexibel hantering.

Kontrollsystemen uppvisar stora skillnader i fördelning av ansvar. Byggherren har formellt ett totalt ansvar mot myndigheterna i alla medverkande länder. I Norge har dock inte byggherren själv detta ansvar. Där har flera andra aktörer också ett ansvar och myndigheterna har sanktionsmöjligheter direkt mot dessa aktörer om de inte fullföljer lagstiftningens krav. I de flesta andra länder nämns även andra aktörer i lagstiftningen som obligatoriskt skall hjälpa byggherren att leva upp till sitt ansvar.

I allmänhet har länderna kvalifikationskrav på de centrala aktörer som anges i lagstiftningen. Dessutom måste aktörerna utföra sitt arbete enligt

yrkesmässiga standarder. Normalt har länderna även någon form av ackrediteringssystem på de aktörer som är angivna med kvalifikationskrav i lagstiftningen.

Byggnadslagstiftningen är i ständig utveckling i alla länder, både när det gäller förbättring av tekniska krav för att införa nya EU-direktiv och när det gäller andra, mer nationellt betingade orsaker. Tre av länderna (Island, Norge och Sverige) har också pågående processer med omfattande förändringar eller helt nya lagar. Nästa fråga är om de utvecklar sin lagstiftning i samma riktning. Och svaret är att de gör det på en övergripande nivå.

De flesta länderna fokuserar på kontrollsystemen i sina förändringar och de flesta vill också ha lösningar som baseras på oberoende privata kontrollanter – både de länder som tidigare har system som baseras på extrem privat kontroll och de som baseras på extrem offentlig kontroll.

I de länder där frågor om ärendehantering ses över vill alla ha förändringar och större flexibilitet. Och i de länder där förändringar behöver göras i de administrativa systemen ser de ut att gå i samma riktning: Storkommuner eller bättre samarbete mellan kommuner för att säkerställa bättre kompetens hos tjänstemän och för att möjliggöra specialisering i kompetensen.

Den sista frågan som kommenteras i rapporten är den grundläggande frågan för hela programmet om handlingsplanen: Kommer länderna i regionen att harmonisera sin byggnadslagstiftning?

Inget av länderna har för avsikt att harmonisera sin lagstiftning med syftet att öka samspelet mellan länderna när det gäller byggandet. Länderna försöker dock delvis att lära av varandra när de utvecklar sin lagstiftning och särskilt försöker de baltiska länderna och Polen att lära av de nordiska länderna. Och som tidigare nämnts så utvecklar de alla sin lagstiftning i samma riktning.

Validera kompetenskrav på aktörer i byggprocessen

För att det skall gå att fritt kunna tillhandahålla tjänster inom den utvidgade Europeiska Unionen (EU) krävs ett enkelt och tydligt system för erkännande av yrkeskvalifikationer. I syfte att underlätta tjänsteföretagens rörlighet och förbättra den offentliga servicen har EU beslutat om en lagstiftning som slår fast några grundläggande principer för ömsesidigt erkännande. Flera försök att förbättra befintliga system har lett till ett helt nytt direktiv (2005/36/EC), mera känt som det "Nya direktivet för det generella systemet" (i det följande kallat det Nya Direktivet).

Det nya dokumentet kan ses som ett sammanslaget ramverk från tidigare omarbetade direktiv. Principer som läggs fram i det Nya Direktivet ger dock inte svar på alla frågor som uppstår i praktiken. Vare sig erkännandeprocedurer eller vägledningar för de viktigaste yrkesgrupperna är

förklarade på ett tillfredsställande sätt. Automatiskt erkännande kan komma ifråga enbart för vissa bestämda yrken som tillhör en jämförelsevis begränsad krets av yrkeskategorier.

Mot den här bakgrunden är en detaljerad analys av de villkor som gäller på arbetsmarknaden inom byggsektorn angelägen. De nya situationer som inte täcks av bestämmelserna i det Nya Direktivet, men som beskrivs som möjligheter när det gäller att utveckla en uppsättning kriterier (i direktivet kallat en gemensam plattform) för att kompensera för väsentliga skillnader i utbildningskrav mellan olika länder, understryker vikten av en sådan studie. Resultatet av studien kan ses som en nödvändig förutsättning för att utveckla en gemensam plattform i syfte att underlätta översättningen av det Nya Direktivet till nationell lagstiftning.

Målet för projektet, som har genomförts av Lettlands Certifieringsinstitut, har varit att bidra till ökad transparens i processerna för att erkänna yrkeskompetenser, särskilt när det gäller att hantera de nationella systemen och att göra dessa tydligare, snabbare och mer användarvänliga. Samtidigt har det också varit angeläget att förbättra transparensen när det gäller yrkeskvalifikationer för att kunderna skall kunna lita på att de kan få en mer allsidig service.

Projektets resultat skall kunna ge information om reglerna för fri rörlighet av kvalificerad arbetskraft och att göra dessa regler tillgängliga i alla deltagande länder. Sökande som skaffar sig kvalifikationer i sitt hemland och som söker arbete utomlands skall kunna förstå villkoren i mottagarlandet. Det skall även finnas en relevant administration i mottagarlandet med tillgång till rutiner för att hantera jobsökanden med olika former av bekräftelse på sina kvalifikationer.

Deltagande länder kan delas upp i två grupper beroende på den ansats man har valt när det gäller att kunna garantera säkerhet vid byggnadsarbete. Den första gruppen driver ett liberalt synsätt som baseras på ömsesidigt erkännande av utbildning och frivillig certifiering av ingenjörsvrken och tekniker (Danmark, Finland, Island och Sverige). Den andra gruppen tillämpar ett mycket strikt synsätt som innebär att man får tillgång till arbetsmarknaden endast efter ett godkännande eller med ett certifikat (Estland, Lettland och Litauen). Det liberala systemet är mest attraktivt när det gäller att kunna erbjuda yrkesfolk ökad rörlighet på arbetsmarknaden, vilket också är huvudsyftet med projektet och av största vikt för EU. Säkerhet vid byggnadsarbete säkerställs i det här fallet genom att anförtro ett ansvar till bygglednings- och byggföretag, bygg- och fastighetsutvecklare och myndigheter inom byggområdet.

Projektet ger också förslag om hur arbetet om erkännandefrågor skulle kunna drivas vidare. Målet för ett utökat projekt skulle kunna formuleras som utveckling av nödvändiga förutsättningar (synsätt, struktur, teknologisk lösning) för en databas om erkännande av yrkeskvalifikationer inom byggsektorn. Arbetet i det hittillsvarande projektet har visat på ett omedelbart behov av information på elektroniska media (Internet, nerladd-

ningsbar databas etc.). Erfarenheter från Danmark har visat en på möjlighet att samla in och lagra information inom detta område för att göra den enkelt tillgänglig genom Internet.

Det är möjligt att bygga upp ett regionalt system för erkännande av civilingenjörssyrken på olika sätt, t.ex. att lägga bit för bit (varje land för sig) eller genom ingående diskussioner i samarbete. Uppenbarligen bör den senare ansatsen vara mest effektiv, eftersom resultatet av ett samarbete ger alla fördelar med en sådan ansats. Kontentan av projektet är också nära detta mål – att finna ut gemensamma principer för harmonisering av erkännandeprocédurer åtminstone på regional nivå inom den Nordliga Dimensionen. System för erkännande av yrkeskvalifikationer i regionen är väsentligt olika, från ganska liberala anspråk (Skandinaviskt synsätt) till godkännandeprocédurer med statligt auktoriserade certifieringsorgan (baltiskt synsätt). Därför skulle en harmonisering av dessa procedurer kunna ses som en betydande utmaning.

Etablera nätverk för gemensam FoU om frågor i handlingsplanen

Samarbete och utbyte av kunskap är viktiga förutsättningar för att underlätta för handel och stimulera rörlighet och gränsöverskridande byggnadsaktiviteter. Forskning och utveckling (FoU) spelar en viktig roll i sammanhanget genom att bidra med utredningar, informationsspridning och utveckling av ny kunskap.

En större och mer öppen marknad erbjuder nya möjligheter för FoU i nya processer och samlarbetsformer, nya verktyg och metoder för användning av ICT samt nya material och designlösningar. Härigenom erbjuds byggsektorn nya möjligheter till ökad produktivitet liksom ökad förståelse för och bättre förverkligande av användarnas och samhällets behov när det gäller byggnader och den byggda miljön. Dessutom kommer detta att stödja utvecklingen av en mer hållbar byggsektor och att förbättra innovationsgraden i sektorn.

Ett gemensamt nätverk för FoU inom den Nordliga Dimensionen skulle stärka forskningsmöjligheterna och möjligheterna för gemensamma forskningsprojekt genom att utnyttja de regionala fördelarna. Det skulle också kunna erbjuda en plattform för inflytande över och att dra nytta av europeiska forskningsprogram och diskussionerna om ett gemensamt europeiskt forskningsområde (ERA). Det skulle särskilt stödja och förstärka de möjliga resultaten av den europeiska byggnadsteknologiska plattformen (ECTP) för regionen.

Det övergripande målet för det så kallade Nibcor-projektet, som har genomförts av Danmarks Byggforskningsinstitut, har varit att utveckla och etablera ett samlarbetsprogram för ett regionalt nätverk för gemensam FoU om frågor kring byggande som är relevanta för handlingsplanen.

Projektet har varit avsett att genomföras i tre etapper. Målet för den första etappen var att utveckla ett samarbetsprogram. Den andra etappen syftade till att etablera ett regionalt nätverk, som kunde bidra till att identifiera forskningsutmaningar, att sprida kunskap och att stärka forsknings-samarbetet.

Målet för en eventuell tredje etapp blir att stödja driften av ett regionalt nätverk för gemensam FoU och att därigenom stödja identifieringen av forskningsutmaningar av gemensamt intresse och spridningen av kunskap samt att stärka forskningssamarbetet i regionen.

Utveckling och etablering av ett samarbetsprogram för ett regionalt nätverk för gemensam FoU har identifierats som en central del. Samarbetet med andra relevanta nätverk och finansieringsprogram kommer emellertid också att vara en viktig del av Nibcor-projektet. Dessutom kommer ett gemensamt FoU-nätverk att förstärka forskningsmöjligheterna i regionen och att erbjuda en utmärkt plattform för att påverka och dra nytta av regionala och europeiska forskningsprogram.

Genom en workshop och korrespondens med en nationell medlem från varje land i regionen har tre forskningsområden identifierats som nyckelområden för Nibcor:

- Mötet med byggherrens och användarnas krav,
- Omvandlingen av byggsektorn,
- Digitaliseringen av byggandet.

En inledande genomgång av forskningsinstitutioner i regionen gav en första översikt av lämpliga partners. Den visade en potential för ökat FoU-samarbete såväl med partners med liknande som med kompletterande forskningskompetens.

Etapp 2 i projektet inkluderade en aktivitetsplan för att etablera ett regionalt nätverk för gemensam FoU, som omfattade:

- Vision och forskningsområden – bekräftelse av nyckelområden,
- Kartläggning av forskningspartners och hinder för samarbete,
- Förberedelser för en portfölj av forskningsprojekt – från utbyte av idéer till att stödja och underlätta kombinerade forskningsinitiativ.

Centralt i etapp 2 har varit att genomföra en workshop för intressenter i den byggnadsindustriella världen inklusive företag, forskare och administratörer för att identifiera centrala teman för forskning och utveckling. Dessutom etablerades en hemsida för Nibcor-projektet för information och kommunikation mellan intressenter i sektorn.

Etapp 3 om aktiviteter för att stödja och underlätta ett FoU-nätverk liksom att genomföra FoU-projekt med kommersiell potential för sektorn har inte fullföljts, men finansiering har sökts om än dock ännu utan framgång.

Förslag om fortsatt gränsöverskridande samarbete

Ett sammanfattande seminarium kring ett utkast av denna rapport organiserades i Stockholm i juni 2009. Vid seminariet rapporterades och diskuterades genomförda projekt i handlingsplanen. Även förslag om fortsatt samarbete diskuterades, eftersom en uppgift för styrgruppen och programkoordinatören enligt ministerbeslutet i november 2004 har varit att föreslå ytterligare åtgärder för gränsöverskridande samarbete i syfte att undanröja inträdeshinder till nationella marknader för bostadsbyggande.

Som betonades redan i ministerbeslutet är det nödvändigt att näringsgrenen har tillgång till lättillgänglig information om andra marknader, om ambitionen om ett ökat utbyte över gränserna skall kunna realiseras. Seminariet underströk det faktum att det viktigaste projektet från den utgångspunkten (*Gör marknadsinformation tillgänglig för potentiella aktörer*) inte har genomförts och att det skulle vara av största vikt att kunna fullfölja det uppdraget med fokus på att underlätta för små och medelstora samt specialiserade företag i byggsektorn.

Alla genomförda projekt har genererat förslag om framtida gränsöverskridande samarbete som accepterades och bekräftades av seminariet som en lämplig utgångspunkt för en plan om hur samarbetet bör fortsätta. Dessa föreslagna aktiviteter är följande:

- Hitta nya sätt att dela kunskaper om reducering av bostadsbyggnadskostnader,
- Harmonisera system i byggnadslagstiftningen för oberoende kontroll,
- Harmonisera procedurerna för att erkänna kompetenskrav på aktörer i byggprocessen,
- Driva ett nätverk för gemensam FoU i frågor som är relevanta för handlingsplanen.

Appendix A

Steering Group Members and Observers 2005–2008

Members

Denmark

Ms. Lone Möller Sørensen 2005–2008
Danish Building Research Institute

Estonia

Mr. Martin Lepp 2005
Ms. Kati Körbe 2006–2007
Ms. Nele-Kai Loorits 2008
Ministry of Economic Affairs and Communication

Finland

Mr. Sven-Eric Roman 2005–2008
Ministry of the Environment

Iceland

Mr. Björn Marteinsson 2005–2008
Icelandic Building Research Institute

Latvia

Mr. Andris Kiskurno 2005
Ms. Anna Krutja 2006
Ms. Santa Liepa 2006–2008
Ministry of Economics

Lithuania

Mr. Julius Laiconas 2005–2006
Ms. Edita Meskauskiene 2006–2007
Mr. Tomas Baranauskas 2008
Ministry of the Environment

Norway

Ms. Mariann Jodis Blomli 2005–2006
Ms. Solveig Aaen 2006–2007
Ministry of Local Government and Regional Development

Poland	
Ms. Barbara Kluza	2006
Ministry of Transportation and Construction	
Mr. Andrzej Olszewski	2006
Ministry of Construction	
Ms. Barbara Kluza	2007
Ministry of Construction	
Mr. Kazimierz Andrzej Kobylecki	2008
Ministry of Infrastructure	
Sweden	
Ms. Johanna Ode	2005–2006
Ministry of Finance	
Ms. Anna Karin Stoltz Ehn	2006
Ministry of Sustainable Development	
Ms. Åsa Karlsson	2007
Mr. Anders Lönnberg	2008
Ministry of Finance	
<i>Observers</i>	
For NCM Industry	
Mr. Troels Danielsen	2005
Mr. Ib Kjöllér	2006–2008
Danish Agency for Enterprise and Construction	
For the Nordic Innovation Center (NICe)	
Mr. Mads Peter Schreiber	2005–2007
Ms. Kari-Ann Kristiansen	2008
For the Nordic Council	
Mr. Reinoldh Furustrand	2005–2006
Ms. Lisbeth Grönfeldt Bergman	2007–2008
The Swedish Parliament	
For NCM Secretariat	
Mr. Thomas Winter	2005
Ms. Pouline Terpager Rasmussen	2006–2008
<i>Program Coordinator</i>	
Mr. Bengt Nyman	2005–2008
Stockholm	

Appendix B

Reports and publications

Reports and other publications may be ordered or downloaded at <http://www.norden.org/publications>.

- 1 Building Sector Regulations – A background to increased exchange between countries in the Baltic Sea region. Date: 29/10 2004. Number: 2004:547.
- 2 An action plan for increased exchange in the building sector between countries in the Northern Dimension region – Nordic-Baltic-Polish Ministerial meeting, November 1, 2004. Date: 01/12 2004. Number: 2004:415.
- 3 Declaration: Increased exchange in the building sector between countries in the Northern Dimension region – Nordic-Baltic-Polish Ministerial meeting, November 1, 2004. Date: 01/12 2004. Number: 2004:416.
- 4 Increased exchange in the Building Sector – Validation of competency requirements. Date: 09/01 2007. Number: 2007:502.
- 5 Increased exchange in the Building Sector – Network for joint R&D (Nibcor Phase 1). Date: 29/01 2007. Number: 2007:503.
- 6 Increased exchange in the Building Sector – Reduction of housing construction costs. Date: 02/08 2007. Number: 2007:539.
- 7 Increased exchange in the Building Sector – Building Legislation in Balticum and Poland. Date: 22/09 2008. Number: 2008:578.
- 8 Increased exchange in the Building Sector – Recognition of professional qualifications in the Building Process. Date: 12/01 2009. Number: 2008:603.
- 9 Increased exchange in the Building Sector – Comparison of Building Legislation in the Northern Dimension region. Date: 05/03 2009. Number: 2009:506.
- 10 Increased exchange in the Building Sector – Network for joint R&D (Nibcor Phase 1&2). Date: 23/04 2009. Number: 2009:524.