



A Nordic Welfare Indicator System (NOVI)

Report for the Nordic Council of Ministers

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SUMMARY

The Nordic project on developing a system of Nordic welfare indicators was initiated as one of three projects within the Nordic Welfare Watch during the Icelandic Presidency of the Nordic Council of Ministers in 2014. It has been a 3 year project with the aim to develop welfare indicators which can be useful for policy making in the Nordic countries. The project was based on the Icelandic experience of their Welfare Watch established following the economic crisis in 2008 and more specifically on its system of social indicators.

The focus of this project has been to develop an easily accessible system of indicators with a limited number of indicators that in a timely way could be used as early warning indicators for the impacts of crises. Thus, an important feature in the design has been the use of timely and policy relevant information for the Nordic countries and the possibility of distributional analyses of sub-groups of the population. Such features could enable detecting groups in the population that are hit earlier or more severe by e.g. an economic crisis. Furthermore, it would enable analyses of national policies and if and how policies have been successful in mitigating the social consequences of a crisis. Last but not least, the system of Nordic welfare indicators could facilitate more general monitoring of social trends in the Nordic countries.

The outcome of the project presented in this report gives some concrete suggestions how a system of indicators could be implemented and maintained. Furthermore, based on the long Nordic tradition of register and administrative data the project also suggests how these could serve as a basis in developing the indicator system and how to complement it with both register bases and contextual information. Since not all aspects that the project judged important to include were possible to quantify the report also give suggestions for future work.

The project developed a web-based prototype of the suggested indicator system in order to highlight its added value. The idea is to give potential users the possibility of hands on elaboration and analysis of some of the indicators. The indicators can be accessed on <http://nomi.bazooka.se/>.¹

¹ For download of diagram as picture the use of Google Chrome is recommended.

1. INTRODUCTION AND OUTLINE OF THE REPORT

The project presented in this report originates from the experience of the Icelandic Welfare Watch that was established following the economic crisis in 2008 and more specifically on its system of social indicators. The social indicators were developed in order to increase the understanding of current and future health and social needs in the population and to monitor the welfare of the population but also to serve as a base for policy making and political decisions. Thus, the system of Nordic Welfare Indicators suggested in this report is based on the same principle.

The work of the project was carried out in collaboration with NOSOSCO (Nordic Social Statistical Committee) and NOMESCO (Nordic Medico-Statistical Committee). The delegation leaders in NOSOSCO have acted as steering committee. The national teams have consisted of a team leader and of experts and the teams have in turn consulted national experts from e.g. governments, government agencies and national statistical institutes. The project group consisted of the following members: Lárus Blöndal, Statistics Iceland; Preben Etwil, Statistics Denmark; Thomas Helgeson, Statistics Sweden; Elisabeth Rønning, Statistics Norway and Timo A. Tanninen, Ministry of Social Affairs and Health, Finland. The following national experts have been consulted during the work: PhD Anders Barstad, Statistics Norway, Associate professor Erik Bihagen, Stockholm University, Professor Stefán Ólafsson, University of Iceland, Director Niels Ploug, Statistics Denmark; Professor Mika Gissler, National Institute for Health and Welfare and Karolinska Institute and Deputy Director General Heli Mikkilä, Statistics Finland. Håkan Nyman at the Swedish Ministry of Health and Social Affairs has been the project leader and Sigríður Jónsdóttir at the Ministry of Welfare, Iceland has been responsible for the project management.

An important task of the project has been to review relevant existing international as well as national indicator system to find indicators and indicators systems suitable for the Nordic collaboration. While, most of the existing indicator systems use similar approaches and indicators the one presented in this report has tried to target specific Nordic features and challenges. The task was also to develop a comprehensive yet user friendly system that could be easily and quickly implemented and maintained.

The project also observed during its work indicators that were considered central for the Nordic countries but which were not possible to measure because of lack of comparable

data. Another result of the project is, therefore, suggestions how a more complete system of Nordic welfare indicator system could be designed and implemented, in part through un-tapping the potential of national data and already collected Nordic statistics.

The project suggests in this report how such a system could be implemented and maintained. Since it was not possible within the frame of the project to implement the project and launch a full functioning indicator system, the report describe and refer to a web-based prototype that gives an illustration of the capacity of the suggested indicator system in monitoring and analysing Nordic welfare.

It should be noted that the concept of welfare is referred to an overall condition, emphasizing individuals' standard of living in financial or material ways and is synonym to the notion of well-being or living conditions. Thus, the concepts are used interchangeably in the report. The concept of welfare also refers to the condition of an entire country or economy and the welfare indicators suggested in this report indicate the conditions of countries through measuring individuals' welfare.

The outline of the report is as follows. In the next chapter is presented the rationale behind and the added value of implementing a common system of Nordic welfare indicators. **Chapter 3** gives a brief overview of national and international indicators and systems which have been reviewed in the process of selecting indicators and developing the indicator system. In **chapter 4** is given a short description of the methodological basis behind the suggested indicator system, drawing mainly on international work in the area of well-being. In the chapter is also described the process of selecting the indicators as well as the technical and statistical criteria behind the selection. **Chapter 5** presents the suggested indicators and also refers to the web-based prototype that gives a hands-on example of how the indicator system could be used. **Chapter 6** then presents concrete aspects to be considered in the process of implementing the system of Nordic welfare indicator and some preliminary assessments of costs. In **chapter 7** are described aspects that were not, at this stage, possible to capture by indicators and how the indicator system could be developed further. Finally, **chapter 8** summarise the recommendations of the project group for the implementation and management of a Nordic welfare indicator system. A detailed description of the suggested indicators is presented in appendix.

2. WHY A NORDIC WELFARE INDICATOR SYSTEM?

The Icelandic experience following the financial crisis in 2008 revealed the need to mobilise society and to structure information on how individuals and families had been affected. The social indicators developed within the work of the Icelandic Welfare Watch were one important task to meet these needs. Indeed, an independent evaluation commissioned by the UN Human Rights Council found that the Welfare Watch resulted in improved social monitoring and in improved targeted intervention by authorities and welfare organisations (Bohoslavsky J.P, 2015). An important message of the evaluation was also the successful focus within public authorities and welfare organisations that *“nobody should be left behind as a consequence of the banking crisis”* (Bohoslavsky J.P, 2015). An assessment by the Social Science Research Institute of the University of Iceland also concluded that the Welfare Watch was important for the Icelandic society during the first years of the crisis and that it had a significant effect on welfare in its initial phase (Arnalds et. al., 2015).

A similar experience of the need for better social monitoring was made within the EU collaboration on social issues where existing indicators and tools were found inadequate and not timely enough to capture the impact of the 2008 financial crisis on individuals’ and households’ welfare (European Commission, 2009).

These experiences and the observed need to facilitate harmonised monitoring and analyses of individuals’ welfare in the Nordic countries are the main reasons why the Icelandic presidency in 2014 suggested developing a system of common Nordic Welfare Indicators.

The project has focused on the Nordic welfare states with an implied understanding of a common Nordic welfare model and that the development of a system of comparative indicators also would serve as an important tool to enhance the possibilities of monitoring, planning and decision-making. Thus, a common Nordic welfare indicator system would improve the possibility to compare with each other and increase the understanding of similarities and differences and would, furthermore, facilitate analyses of specific Nordic features and challenges.

Numerous reports and projects have described and analysed the Nordic welfare state and the challenges it faces, both in the short and the long-term. These have also served as a background for the project’s work it goes beyond the scope of this report to review these

analyses and for more in-depth discussions we refer to e.g. Andersen (2004 and 2014), Palme and Kangas (2005), Normann, Rønning and Nørgaard (2009), Kvist et.al. (2011) and Jonson and Stefansson (2013). Another important source for the definition of Nordic challenges was a kick-off meeting of the project, held in Reykjavik in June 2014, and more importantly the continued dialogues within the project teams and with national experts.

Much of previous work addressing the Nordic welfare state, including its challenges, often has focused on systems and structures rather than on individual outcomes. While individuals' well-being must be interpreted in relation to the society they live there is also a need to develop tools that enables more concrete and systematic monitoring and analyses of overall well-being in the Nordic countries. The Icelandic experience has concretized how such a monitoring tool could look like and how it could be used to identify current and future challenges. Thus, an added value of the system of Nordic welfare indicators presented in this report is the focus on early warning indicators which are captured through the monitoring of individuals' welfare. Such a system would enable monitoring the effect of crises including in-depth analyses of distributional aspects of individuals living condition, health and welfare.

Throughout the work of this project it has become evident that there is a lack of harmonised and detailed Nordic data on individuals' welfare. Although the reports by and the statistics collected through NOSOSCO and NOMESCO cover a large number of harmonised statistics and indicators, also on individual's welfare, these figures have limitations both in accessibility and when it comes to analyses of sub-groups of the population. An important focus of the project has, therefore, been to build further on this work and more specifically the potentials to align to the work of NOSOSCO and NOMESCO.

Another insight reached by the project was that although existing international data and indicator systems, such as the OECD and the EU, do cover the Nordic countries the focus of and access to these indicators often lack specific Nordic dimensions. Often, the large amount of countries covered in these international indicators systems force the selection of data and indicators to consider the lowest common denominator. Nevertheless, the Nordic countries are frequently put forward as good examples or best practice of well-functioning welfare states and with a focus on their similarities. Still, the stories and analyses reveal little about differences and unique national features that also exists and the indicator systems seldom enable more thorough analyses of concrete Nordic challenges. Although such analyses to some extent could be possible various aspects complicates in-depth Nordic

comparisons such as for example; the size of these indicator systems, their lack of important distributional presentations by population groups and not least the accessibility of these indicators.

By focusing on the common challenges and specific features a Nordic welfare indicator system would facilitate and improve such comparisons. Furthermore, a well-functioning and easily accessible indicator system that contains up-to-date policy relevant information and that are possible to analyse further by comparing countries and sub-groups of the population over time would provide a tool for detecting future Nordic challenges. More specifically, it would for example enable detecting if there are groups in the population that are hit earlier or more severe by an economic crisis. Experiences have shown that this could for example be the case for groups of the population with smaller financial margins or less strong foothold on the labour market (see e.g. European Commission, 2015a). Thus, such a tool would facilitate the monitoring of how vulnerable groups in the Nordic countries have fared during a crisis and would enable analyses of national policies and if and how policies have been successful in mitigating the social consequences of a crisis. This would also have the potential to complement with a specific Nordic focus the work in the EU and the OECD in measuring social conditions and well-being.

Since one aim of the project was the focus on indicators that in a timely way can be used as early warning indicators of a crisis the project investigated also, based on the long Nordic tradition of register and administrative data, how these could serve as a basis for Nordic welfare indicators. Although such an approach was considered both useful and possible it would need more time and investments than was possible within the scope of the project. Nevertheless, the suggested system of welfare indicators could serve as a catalyst for developing indicators based on national register and administrative data as well as to be used as contextual background information in analysing the indicators.

3. REVIEW OF EXISTING INDICATOR SYSTEMS

In addition to the experiences from the Icelandic Welfare Watch the project has drawn on experiences from existing national and international indicator system. This chapter gives a brief overview of some of the indicator systems that has been reviewed by the project. As it would go beyond the scope of this report to present all existing indicator systems in detail a selective and exemplary approach is used giving basic information for each of the ones addressed.

3.1. National examples in the Nordic countries

The origin of this project is the Icelandic Welfare Watch that was established in February 2009, only months after the hit of the crisis, with the aim to monitor the social and financial consequences of the financial crisis for families and households in Iceland, assess the measures already taken, propose improvements, and implement them on behalf of the government.

The main role of the Welfare Watch was to act as analysts and advisors but in two cases the Welfare Watch was responsible for implementing projects. One of these two projects was to set up social indicators since the steering committee judged this to be one of the most important projects of the Welfare Watch. These social indicators provide a collection of statistical data in one place, enabling the public and the government to follow developments and changes in society and compare the situation of various groups to that in other countries (Arnalds et.al., 2015). An important result of the work was the recognition of the need of relevant and up-to-date social indicators and a range of methods were developed to also measure and understand these social indicators, i.e. the impact of the economic crisis on a range of social factors - both visible and less obvious. The set of social indicators that were developed and collected consists of around 150 indicators. These indicators are compiled and published regularly by Statistics Iceland and then presented on the Ministry of Welfare's home page (<https://www.velferdarraduneyti.is/felags-og-fjolskyldumal/felagsvisar/>).

The types of social indicators in the Icelandic Welfare Watch are measures that are also reported and presented in different ways in the other Nordic countries. The most comprehensive work on collecting and presenting social indicators is found in Finland. In the

following are briefly described three Finnish indicator systems of social indicators. The web-based social indicator system *Findicator* introduced in 2009 is a collection of indicators that was set up together with a wide range of governmental bodies with the aim to facilitate the access to statistics and indicators that were already available in different formats (<http://www.findicator.fi/en>). Thus, the aim was to gather up-to-date, reliable information on social progress for decision makers, public servants, specialists, teachers, journalists and citizens. Findicator is almost exclusively based on objective indicators and only includes very few subjective measures. Efforts were made to ensure that the service was as user-friendly as possible and the data are regularly updated and accessible in different formats (graphs, tables), which also allows comfortable further usage and manipulation of the data for different purposes. Findicator, moreover, provides access to the statistical databases behind the indicators and enables users to do their own calculations, although limited to rather simple analyses. The service is based on solutions enabling automatic updates directly from Statistics Finland. Within the frame of Findicator there is also selected subset of ca 20 well-being indicators presented under eight dimensions². The Finnish *Welfare Compass* is a collection of ca 100 indicators with the purpose to provide an overview, on the web, of the development of health, welfare, and social and health services in Finland and to facilitate comparisons of the situation in different regional and local areas in Finland (<http://hyvinvointikompassi.thl.fi/en/web/hyvinvointikompassi/>). The indicators are structured over three main dimensions; welfare (e.g. living conditions, health status), services (e.g. the provision and use of services) and population (e.g. demographic structure). A third Finnish indicator system is the *Sotkanet* Indicator Bank that includes indicators on health and welfare as well as key population welfare and health data from 1990 onwards on all Finnish municipalities (<https://www.sotkanet.fi/sotkanet/en/index>). The Sotkanet contains ca 2 300 indicators and constitutes the basis for the Welfare Compass and both systems are administrated by the National Institute for Health and Welfare (THL).

In Denmark, Norway and Sweden there are no similar collection of social and welfare indicator that is structured as in the Icelandic or Finnish case. The main place to find such indicators in these countries is their respective national statistical institutes and which in

² Well-being indicators of Findicator in the Eurostat Quality of Life framework; Material living conditions, Productive or main activity, Health, Education, Leisure and social interaction, Economic and physical safety, Governance and basic rights and Natural and living environment.

various ways allow comparisons and analyses of individuals' welfare. However, some recent initiatives in Denmark and Sweden may be noted.

In Denmark, the region Syddanmark has since 2013 monitored quality of life in their municipalities. The indicators are reported for each municipality and covers indicators on structural changes, in e.g. business, housing, incomes and education but also on subjective well-being such as life satisfaction. The indicators build mainly on public statistics from registers but also on four smaller surveys per year. A similar approach was initialised by Statistics Denmark late 2014 and with the aim to develop quality of life indicators for 38 Danish municipalities covering areas such as life satisfaction, health, safety, education, work, income, social relation, housing and social participation. The work was presented in 2016 and has similarities with the OECD and Eurostat quality of life indicators (<http://dst.dk/extranet/livskvalitet/livskvalitet.html>).

In Norway, the main reporting and monitoring on social indicators has been the publication Samfunnsspeilet prepared by Statistics Norway. It was published several times per year and focus on social indicators every third year. In a recent governmental initiative the Norwegian Directorate of Health was commissioned to develop a strategy to secure the collection and the quality of data related to quality of life in the population (<https://helsedirektoratet.no/publikasjoner/gode-liv-i-norge-utredning-om-maling-av-befolkningens-livskvalitet>). In the report is also reviewed different Norwegian monitoring system. The approach relates to the OECD work on Better life initiative. The Norwegian Directorate of Health has also developed an interactive tool with a system of public health indicator which enables comparison of public health in municipalities and counties (<https://www.fhi.no/hn/helse/hent-folkehelseprofil-for-kommune-f/>).

In Sweden, the Swedish Agency for Economic and Regional Growth together with Reglab has developed a project with the aim to implement and develop regional quality of life indicators. As in the Danish case the structure is based on the OECD approach covering nine dimension of quality of life but in addition the project aims at measuring the values of some stocks of capital; economic capital, capital in natural resources and social capital (Giorgi and Norin, 2016). Other examples are the indicator system Max18, administrated by the Children's Ombudsmen (<http://max18.barnombudsmannen.se/max18-statistik/>) with the aim to monitor children's well-being in Sweden and Kolada, a database on local and regional statistics including so called Open comparisons covering e.g. key figures in social

and health care (https://www.kolada.se/index.php?_p=index). In Sweden there has also been a recent Inquiry with the aim to map and analyse existing quality of life measures, as well as to propose measures for quality of life development in Swedish society (SOU 2015:56).

3.2. International organisations

Within the Nordic co-operation NOSOSCO and NOMESCO have since the 1940s worked to collect, analyse and present harmonised social and health statistics. The reports have covered a wide range of statistics and analyses both on individual and on aggregate level (<http://nowbase.org/da/publications>). Also within the Nordic co-operation, Nordic statistics on welfare and social issues are collected and presented in e.g. the database Nordic Statistics, the Nordic Statistical Yearbooks and more recently in the iLibrary, which is currently being developed in collaboration with the OECD (<http://www.norden-ilibrary.org/>). The database Nordic Statistics also contain several indicator system which are related to the one suggested in this report, such as for example the Nordic gender-equality indicators and the Nordic indicators for sustainable development. These Nordic statistics and indicators are all accessible at the home page of the Nordic co-operation i.e. www.norden.org.

The EU and supranational organizations such as the OECD, the WHO, the World Bank and the United Nations, have played an important role in developing system of social and well-being indicators. In recent years there have been a range of activities in the field of social monitoring and reporting initiated by supranational organisations and the European Union, many of them resulting from broader policy strategies and projects.

At the European Union level, the Open Method of Coordination (OMC) on social issues, introduced in 2000, has played an important role as a framework for the development of social indicators. In this context, around 150 commonly agreed social indicators have been agreed. The OMC has been implemented in areas such as social inclusion, health care and long-term care and pensions (<http://ec.europa.eu/social/main.jsp?catId=758&langId=en>). Some important and recent developments within the social OMC are the so called Joint Assessment Framework (JAF) in the area of employment, social protection and health and the Social Protection Performance Monitor (SPPM). Their main aim is to serve as analytical framework monitoring the progress toward the Europe 2020 target and identifying national key challenges and bottlenecks (<http://ec.europa.eu/social/main.jsp?catId=758&langId=en>).

A recent social monitoring activity at the European Union level is the Eurostat Quality of Life Indicators, which have been developed within a project initiated by the European Statistical System. The initiative is closely related to the European Commission's "GDP and beyond – measuring progress in a changing world" communication which in turn was a response to the report of the "Commission on the Measurement of Economic Performance and Social Progress" (Stiglitz et. al. 2009). The data used for the quantification of the indicators are taken from different sources within the European Statistical System, such as the European Union Statistics on Income and Living Conditions (EU-SILC), European Labour Force Survey (EU-LFS) and the European Health Interview Survey (EHIS). In the case that official data are not yet available, data from sources outside the European Statistical Systems are sometimes referred to (Eurostat 2015). Also at the EU level, the tripartite European agency, the European Foundation for the Improvement of Living and Working Conditions (Eurofound), collects, analyse and presents social statistics and quality of life indicators based on two regular pan-European surveys, the European quality of life survey and the European working condition survey (<https://www.eurofound.europa.eu/>).

The OECD has been a key player in the field of social monitoring for many years, for example through the regularly publishing of a compilation of Social Data and Indicators as part of its report Society at a Glance. These indicators address issues of self-sufficiency, equity, health and social cohesion and also include general context indicators in the OECD member countries (OECD 2014). Another social monitoring activities launched by the OECD's is the Better Life Initiative. The initiative was launched in 2011 as an outcome of the previous work around the project on the Measurement of Well-being and Progress and was also directly stimulated by the Stiglitz et al. commissions report. The Better Life Initiative includes two main elements: the How's life set of well-being indicators and the (composite) Your Better Life Index (<http://www.oecdbetterlifeindex.org/>). In addition to the regular monitoring of living condition and well-being the OECD has also devoted a specific focus on the impact of the latest economic crisis and notably on the effect on individuals living conditions (OECD, 2013).

The United Nations Organizations are engaged in several social monitoring activities, including also the Nordic countries. Examples are the Human Development Index (HDI) and related Human Development Indicators, which are provided as part of the United Nations Development Program (UNDP). Launched in 1990, the HDI as well as the circa 45 human

development indicators – structured in 14 dimensions – are published in the annual Human Development Reports. The calculation of the HDI has been revised several times since its first release (<http://hdr.undp.org/en>).

More recent activities of the United Nations – in collaboration with several partners – are the Millennium Development Goals Indicators - Project (www.un.org/millenniumgoals/). A set of 60 indicators that were selected with a view to monitoring progress toward the achievement of the eight internationally-agreed development goals and with the target date of 2015. This was followed up in 2015 by the 2030 Agenda for Sustainable development. The agenda includes 17 goals and 169 targets (UN, 2015).

Also the World Bank publishes the regularly updated Social Indicators of Development since the 1980s. The 26 indicators cover issues like child labour, gender inequality, refugees and asylum seekers. Indicators also address issues of gender disparities related to key topics such as education, health, labour force participation, and political participation. The selected social Indicators are part of the World Development Indicators, which are a compilation of more than 300 indicators, structured in 18 dimensions and presented for 214 countries from 1960 until today (<http://data.worldbank.org/data-catalog/world-development-indicators>).

Finally, there are also some activities initiated and maintained by other institutions, such as research institutes, think tanks or NGOs. One such example is the European System of Social Indicators which is one of few comprehensive indicator systems to be used to continuously monitor the individual and societal well-being in Europe (Noll et.al. 2014). This indicator system, developed and maintained by the Social Indicators Research Centre at GESIS - Leibniz Institute for the Social Sciences in Germany, covers the EU member states, Norway and Switzerland as well some non-European reference societies. At present there are timeseries data available for more than 700 indicators from 10 out of the projected 13 lifedomains.

4. METHODOLOGICAL APPROACH

The adopted approach for the suggested indicator system builds on the idea of linking individual welfare and the command over resources and more specifically the notion of freedom of action (see e.g. Sen 1985; 1992; 1993). The approach has also a long tradition in Nordic welfare measurement (Johansson, 1979) and it has increased in popularity during

recent years following e.g. the so called Stiglitz report (Stiglitz et. al., 2009). The freedom of action of individuals could be interpreted as to which extent individuals can direct their lives at their own discretion and depends on the resources they have at their disposal as well as on their environment. Using freedom of action as a basis leads to a measurement of quality of life in terms of a number of central conditions of life, which is similar to the way welfare in society has been described.

Thus, quality of life as freedom of action provides measures that can be expected to change if individuals' conditions change for the better or worse and this interpretation can provide a basis for assessing how society is developing. The approach is also similar to the OECD framework for measuring well-being (see e.g. p21 OECD, 2013) and the suggested multidimensional approach is structured according similar dimensions as e.g. the OECD framework, the Stiglitz report but also the work by Johansson in 1979.

The dimension can be seen as relevant for all societies but could also be adjusted to better reflect country-specific dimensions. The dimensions suggested for the Nordic approach, thus, differs somewhat from the one used by the OECD. While OECD looks at both current and future well-being the Nordic approach do not explicitly, at this stage, focus at sustainability of well-being or welfare over time.

The project suggests the following nine dimensions to constitute a structure for the indicator system and a basis for monitoring and analysing welfare in the Nordic countries:

- 1. Health*
- 2. Educational skills*
- 3. Employment*
- 4. Work-life balance*
- 5. Income and earnings*
- 6. Housing*
- 7. Social network and participation*
- 8. Personal security*
- 9. Subjective well-being*

4.1. Considerations when selecting the indicators

An important aspect in the process of selecting indicators for the Nordic welfare indicator system has been the focus on features and challenges in the Nordic welfare states. Numerous indicators were discussed during the work of the project, both in the project group and in the national teams. Many of the indicators discussed were also judged important to include but due to lack of comparable data for all the Nordic country over time it was not possible to incorporate them in the system. Thus, the suggested indicator system should also be seen in the light of what comparable Nordic indicators were currently possible to define for all the Nordic countries.

The focus of the indicators is, as far as possible, on individual outcome rather than on e.g. the supply of social services. For example, the aim should be to measure individuals' health rather than the number of visits to the doctor, which may fail to capture that people do not consult doctors despite having health problems. In the same way, a measure of security should refer to citizens' exposure to crime rather than the number of police officers. Thus, the focus is on "how" rather than "why" individuals living conditions change and the indicators have, as far as possible, been selected to measure outcomes rather than the inputs and the outputs that could deliver these outcomes. The suggested indicators are of both objective and subjective nature. While the objective indicators could be said to be observable by a third party the subjective indicators concern an individual's own experience of a circumstance.

A key aspect has been that the indicators are able to take into account the distribution of welfare in the population and in particular differences across for example age, gender and socio-economic backgrounds. Another important aspect has been to keep the number of indicators manageable in size since a specific indicator could be presented broken down by e.g. gender, age and educational level there are a large number of outcome that can be presented and analysed. It was agreed already at the kick-off meeting of the project to restrict the maximum number of indicators to ca 30.

Various rationales behind the construction and technical feature of an indicator have been developed by e.g. the OECD and the EU (se OECD, 2011 and European Commission, 2015b). The following criteria have been guiding the selection of the suggested Nordic

welfare indicators. The criteria should be seen as ideal and would not be possible to meet for all the selected indicators:

- 1. An indicator should capture the essence of the problem and have a clear and accepted normative interpretation*
- 2. An indicator should be robust and statistically validated*
- 3. An indicator should have maximum country coverage.*
- 4. An indicator should be built on available underlying data, and be timely and susceptible to revision*
- 5. An indicator should be collected through a recurrent instrument, in order to allow for monitoring changes over time.*
- 6. An indicator should be responsive to policy interventions but not subject to manipulation*
- 7. An indicator should enable analysis of distributions and differences between social groups.*

It should also be mentioned that many of the indicators suggested in this report are already used in other international indicator system which means that many of the above criteria have been considered by other organisations when selecting and defining the indicator.

An important feature of the indicator system is also the multidimensional picture of well-being and the importance of going beyond a simple summary approach and look at which individuals in which countries that do well in which dimensions of well-being. The various dimensions and indicators enable comparative analyses that can reveal relative strengths and weaknesses on a country-by-country and indicator-by-indicator basis. Furthermore, compared to e.g. the OECD framework the suggested system of Nordic welfare indicators would also allow for distribution analysis of sub-groups of the population.

Thus, an important feature of the suggested indicator system is that it, over time, follows individuals' well-being in Nordic countries in a number of different welfare dimensions. By using timely indicators and providing indicators that can be presented by various sub-groups of the population and notably by vulnerable groups it is possible to have an early indication of negative or positive developments.

5. THE SUGGESTED INDICATOR SYSTEM

In the process of selecting and defining the indicators various national and international indicators systems as well as data sources have been reviewed by the project as well as by the national experts. The approach and principles described above have been guiding in this work, thus, the suggested indicators shall be seen as a limited selection of those judged important, available and that in an easily and timely way could be used as early warning indicators for the impacts of crises in the Nordic welfare states.

In table 1 is presented the suggested system of 30 Nordic welfare indicators by dimension, their definition, for which sub-groups of the population they can be presented and their data source. All the indicators are available for comparison over several years and usually collected every year, however, some few indicators are only available every second year. In appendix are given more details about the indicators including also example of interpretation and which years each indicator is available. The indicators are suggested to the presented for the Nordic countries for which data are available i.e. Denmark, Norway, Sweden, Finland and Iceland. Only for a limited number of indicators, notably those based on the work of NOMESCO, has it been possible, at this stage, to present indicators also for the Faroe Islands, Greenland and Åland. It is also suggested that the indicators are presented for the 27 or 28 members of the European Union, when possible, in order to enable comparisons.

Table 1 A system of Nordic Welfare Indicators

Dimension	Indicator	Definition	Sub-groups	Source
1. Health				
1.1	Self-reported health status	Self-perceived health is surveyed through a question on how a person perceives his/her health in general, using one of the following answer categories: very good, good, fair, bad or very bad. Measure: percentage	Age Gender Work Status	Eurostat: EU-SILC
1.2	Self-reported unmet need for medical care (examination)	Total self-reported unmet need for medical examination for the following three reasons: financial barriers + waiting times + too far to travel. Person's own assessment of whether he or she needed examination or treatment for a specific type of health care, but didn't have it or didn't seek for it. Measure: percentage	Age Gender Income level	Eurostat: EU-SILC

1.3	Self-reported unmet need for dental care (examination)	Total self-reported unmet need for dental care for the following three reasons: financial barriers + waiting times + too far to travel. Person's own assessment of whether he or she needed examination or treatment for a specific type of health care, but didn't have it or didn't seek for it. Measure: percentage	Age Gender Income level	Eurostat: EU-SILC
1.4	Deaths from circulatory diseases	Deaths from circulatory diseases per 100 000 inhabitants by gender, age standardized rates. ICD-9: 390-459 and ICD-10: I00-I99. NOMESCO definition.	Age Gender	NOMESCO
1.5	Cancer mortality rate	Death rates from malignant neoplasms per 100 000. ICD-9: 140-208 and ICD-10: C00-C97. NOMESCO definition.	Age Gender	NOMESCO
1.6	Deaths from suicide	Deaths from suicide per 100 000 inhabitants. For children - ICD-10: X60-X84. NOMESCO definition.	Age Gender	NOMESCO
2. Educational skills				
2.1	Early leavers from education and training	Early leavers from education and training denotes the percentage of the population aged 18 to 24 having attained at most lower secondary education and not being involved in further education or training. Measure: percentage	Age Gender Work status Country of birth	Eurostat: EU-LFS
2.2	Educational attainment	The distribution of the share of the population (18-24, 25-54) who have successfully completed education that equals International Standard Classification of Education (ISCED) level (0) 1-6, Focusing on those with either low (0-3) or high (5-6). Measure: percentage	Age Gender Work status Education	Eurostat: EU-LFS
3. Employment				
3.1	Employment rate	Employed persons (age 20-64) as a proportion of total population in the same age group. Measure: percentage	Age Gender Country of birth	Eurostat: EU-LFS
3.2	Unemployment rate	Unemployed persons as a percentage of the labour force. Measure: percentage	Age Gender Country of birth	Eurostat: EU-LFS
3.3	NEET	Young people Neither in Employment nor in Education and Training. Measure: percentage	Age Gender Country of birth	Eurostat: EU-LFS
3.4	Long-term unemployment rate	The share of unemployed persons since 12 months or more in the total active population. LFS variable: Total long-term unemployed population (≥12 months' unemployment; ILO definition) as a proportion of total active population aged 15 years or more. Measure: percentage	Age Gender Country of birth	Eurostat: EU-LFS

3.5	Involuntary part-time	Involuntary part-time employment as percentage of the total part-time employment. Persons working on an involuntary part-time basis are those who declare that they work part-time because they are unable to find full-time work. Measure: percentage	Age Gender	Eurostat: EU-LFS
4. Work-life balance				
4.1	Childcare	Percentage of children (0-3 and 3-cumpulsory school-age) cared for by formal arrangements by weekly time spent in care. By duration (less than 30 hours a usual week; 30 hours or more a usual week). Measure: Percentage	Hours of child care Age of child	Eurostat: EU-SILC
4.2	Parental leave	Number of days in which maternity benefits were drawn per new-born - days with daily cash benefits in connection with pregnancy, childbirth or adoption during the year. And of which men in percent. Measure: days and percent	Maternity days Men's days	NOSOSCO
4.3	Average number of actual weekly hours of work	Average number of actual weekly hours of work in main job, by sex, professional status, full-time/part-time and occupation (hours). Measure: days per week	Gender Working time Work status	Eurostat: EU-LFS
5. Income and earnings				
5.1	Mean and median net income	Median net income after taxes and transfers. Equivalised, nominal in PPS, Euro and nat. currency. Eurostat applies an equivalisation factor calculated according to the OECD-modified scale. Measure: income (mean, median) in euro, PPS and national currency	Household type	Eurostat: EU-SILC
5.2	Distribution of disposable income	Distribution of equivalised household net disposable income by quintiles. Measure: percent	Quantiles (population by income level)	Eurostat: EU-SILC
5.3	Relative at risk of poverty rate	Share of persons with an equivalised disposable income below 60% of the national equivalised median income. Measure: percent, poverty threshold and income threshold	Household type Income status	Eurostat: EU-SILC
5.4	Persistent low income	Having an equivalised disposable income below the at-risk-of-poverty threshold in the current year and in at least two of the preceding three years'. The 'at-risk-of poverty threshold' is taken, as 60% of the national median. Measure: percent	Age Gender Income status	Eurostat: EU-SILC

5.5	Material deprivation	Share of population living in households lacking at least 3 and 4 items out of the following 9 items: i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, or could not afford (even if wanted to) vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone. Measure: percent	Age Gender No. of items Income status	Eurostat: EU-SILC
5.6	Arrears on payments	Percentage of the population reporting arrears (mortgage or rent, utility bills or hire purchase). Measure: percent	Household type Income status	Eurostat: EU-SILC
6. Housing				
6.1	Median share of housing cost in income	Median share of housing cost in disposable income. Measure: percent	Household type Income status	Eurostat: EU-SILC
6.2	Self-reported financial burden of total housing cost.	The financial burden of the total housing cost refers to the percentage of persons in the total population living in a dwelling where housing costs consist a financial burden, based on the following levels of financial burden: 1. Households with heavy financial burden due to the housing costs, 2. Households with financial burden due to the housing costs. 3. Households without financial burden due to the housing costs. Measure: percent	Household type Income status	Eurostat: EU-SILC
7. Social network and participation				
7.1	Social network	How often socially meet with friends, relatives or colleagues. Present distribution focusing at those reporting once a month or less. Measure: percent	Age Gender	European Social Survey
7.2	Social support	Anyone to discuss intimate and personal matters with (2004 and 2008), How many people with whom you can discuss intimate and personal matters (2012). Measure: percent	Age Gender	European Social Survey
7.3	Social participation	Worked in political party or action group last 12 months and/or worked in another organisation or association last 12 months. Measure: percent	Age Gender	European Social Survey
8. Personal security				
8.1	Crime, violence or vandalism in the area	Share reporting crime, violence or vandalism in the area. Measure: percent	Household type Income status	Eurostat: EU-SILC
8.2	Deaths from accidents	Causes of death per 100000 inhabitants. Accidents and/or assault. ICD-10 =V01-X59. NOMESCO definition.	Age Gender	NOMESCO

9 Subjective well-being				
9.1	Life satisfaction	How satisfied with life as a whole (European survey), Overall life satisfaction (EU-SILC from 2017). Measure: Distribution by low (0-5), high (6-8) and high (9-10) and mean.	European Social survey: Age, Gender EU-SILC: Age, Gender, Socio-economic status	European Social Survey and EU-SILC from 2017

The description of the indicators above and in the appendix should not be seen as exhaustive since there are various aspects that could be added such as e.g. the quality of the distributional presentation of the indicators by sub-groups and the complementarity between some of the indicators. There are also various technical aspects related to some indicators that need to be addressed in an implementation of the system. One such aspect is the comparisons over time of income data which has to be adjusted using an appropriate price index.

It should be repeated that the indicators primarily should be seen as a system with indicators aimed at indicating the defined welfare dimensions and that a central feature of the indicator system is the possible distributional presentations by sub-groups of the population that may give early signals on negative trends for vulnerable groups. Finally, it should be mentioned that the indicators also enables monitoring and analyses of gender equality and to some extent of children's welfare through the presentation by household type and age.

5.1. A prototype of the Nordic Welfare Indicator system

In order to highlight the added value of the suggested indicator system the project commissioned a web-consultant to set up a prototype web-page with a limited number of the suggested Nordic Welfare Indicators. The main idea behind the prototype is to enable hands on elaboration and analysis of some of the indicators. In the prototype is presented seven of the suggested 30 indicators based on real data including possibilities of distributional analysis over time for some sub-groups of the population.

The prototype enables elaboration of an indicator by choosing sub-group, country and time period and by presenting the indicator in the form of column charts, line charts or tables. The charts and tables can be downloaded as visualised on the screen or for further

elaboration by downloading the data in Excel. The prototype also contains brief descriptions of the indicators as well as references to the main data source. Although the prototype only contains some limited number of functions it illustrates how the access to comparable Nordic statistics could be facilitated. The indicators can be accessed and explored on <http://nomi.bazooka.se/>.³

6. HOW A SYSTEM OF NORDIC WELFARE INDICATORS COULD BE IMPLEMENTED AND MAINTAINED

In order to implement a Nordic system of welfare indicators data is needed that enables monitoring and analyses of individuals' well-being in the Nordic countries over time. This chapter discuss how the system of Nordic welfare indicators could be implemented focusing on how the underlying data is collected, maintained and presented. In the chapter is also discussed the roles of concerned actors such as the National Statistical Institutes, the NOSOSCO and NOMESCO and the contractor managing the Nordic statistics at the Secretariat to the Nordic Council of Ministers.

There are various aspects that need to be considered when it comes to *where* the indicators should be presented and which in turn may affect how the underlying data is collected. The project investigated some alternative options concerning the hosting of the indicator system but find the home page of the Nordic co-operation and the available structures of presenting statistics as the natural choice. The current tools available for visualising the suggested indicators would not allow for presenting the Nordic welfare indicators in the way as presented above and notably the distributional presentations by sub-group per indicator. However, the statistics collected and presented at norden.org is currently being reformed in order to facilitate the access to the statistics and may have the potential to present the Nordic Indicators in line with the suggestion of the above web-prototype. Thus, the preferred alternative would be to align to the new platform (iLibrary) that is being developed. Another important aspect in favour of presenting the Nordic welfare indicators at norden.org is the large amount of related statistics and indicators available on the same place such as for example the Nordic Statistical Yearbook and

³ For download of diagram as picture the use of Google Chrome is recommended.

indicators related to demography, sustainable development, gender equality and the economy.

It is also the case that some of the indicators presented in the iLibrary originate from the same source as the Nordic welfare indicators which means that structures are already in place to collect, update and present some of the suggested indicators. It should, however, be noted that although some indicators may have the same definition and data source most of the Nordic welfare indicators requires additional background data in order to present the suggested distributional presentations by sub-groups of the population. Currently about one third of the Nordic welfare indicators have the same data source and definition, but different categories of sub-groups, as existing indicators in the database Nordic Statistics. The project has also tried to align to the already existing data in order to facilitate an implementation of the suggested welfare indicators.

6.1. Data management

The project has of course reviewed the work and publications by the Nordic cooperation such as the NOSOSCO, NOMESCO, the database Nordic Statistics and the Nordic Statistical Yearbook and to what extent these would be possible to use as data sources for the Nordic welfare indicators. Indeed, some of the suggested indicators do build on already existing figures collected within the Nordic framework, both through national statistical institutes and through DST consulting at Statistics Denmark, contracted by the Secretariat to the Nordic Council of Ministers to manage e.g. the database Nordic Statistics.

Earlier work by NOSOSCO also explored how the EU-SILC could be used as a basis for comparable indicators at the Nordic level (Normann, Rønning and Nørgaard, 2013). Due to the lack of harmonised Nordic surveys and data on individual welfare over time, the project found that the EU-SILC (13 indicators) as well as the European Union Labour Force Survey (EU-LFS) (8 indicators) currently constituted the most suitable data sources for a majority of the indicators, a total 21 of the suggested 30 indicators. In addition 5 indicators are suggested to be based on national statistics collected within the framework of NOMESCO and NOSOSCO and additional 4 within the European Social Survey (ESS).⁴

⁴ The indicator on Life satisfaction is based on the ESS. Since the indicator will be collected on a regular basis in EU-SILC from year 2017 it is suggested to then change data source for this indicator.

The EU-SILC and EU-LFS surveys are collected by the national statistical institutes and delivered to Eurostat which in turn process and publish the figures. These statistics are in the form of micro-data and it would be necessary to process the data in order to retrieve the underlying data needed for the suggested Nordic welfare indicators. For all the indicators based on EU-SILC and EU-LFS program codes need to be adjusted to create the underlying data and thus the indicators. It should be noted that the national statistical institutes already today publish some of the suggested indicators, though often with less detailed presentations of sub-groups. Thus, in order to create indicators with additional possibilities for sub-groups of the population additional work by the national statistical institutes would be needed. Concerning the limited number of indicators that are based on the European Social Survey these would in the initial phase need to be retrieved and updated manually.

The preferred first step considered by the project is that the indicators are retrieved directly from Eurostat's by DST consulting at Statistic Denmark. This approach would enable a quick and smooth implementation of the Nordic welfare indicator system and to a low cost. However, compared to collecting and updating of the system through the national statistical institutes the approach would have negative effects on timeliness because of the time Eurostat would need to calculate and publish the data. Therefore, the project suggests that further work is needed to improve timeliness by provision of the underlying data directly by the national statistical institutes.

Storage and maintenance of data

It is suggested that the Nordic welfare indicators are stored and presented in the database Nordic Statistics and are made available to be presented in the iLibrary. It is furthermore suggested that the indicators are updated according to their frequency of collection i.e. indicators based on EU-SILC, EU-LFS and a majority of the NOMESCO and NOSOSCO indicators would be updated on a yearly basis while the indicators based on the EES would be updated every second year. Concerning the EU-SILC and EU-LFS these may, in a later stage, be considered to be updated more frequently in order to take into account possible revisions in the underlying data.

It should be noted that there is usually a time lag between the collection of surveys and the release of the data for the available harmonised indicators. Although efforts are being made by the national statistical institutes and Eurostat to shorten these time lags

there are still in many cases two years between the time of the survey and the time when the data is being published.⁵ This time lag could be shortened if the underlying data for the Nordic welfare indicators are provided directly by the national statistical institutes.

Finally, it is important to note that all the underlying data for the suggested indicators would be based on aggregate and that no micro-data will be stored or accessed. This would in turn mean that there would be no conflicts concerning data confidentiality. However, the underlying data that are suggested to become available would need to meet national or Eurostat standard requirements concerning number of observations displayed.

Coherence with other indicator

The possibility to measure and monitor social outcomes and individual welfare has increased dramatically over the last decades. As a consequence, there are often several measures or indicators describing a specific social outcome and that the same measures and indicators may be based on different data samples. Thus, in many cases national figures may differ from those published by e.g. OECD and Eurostat. It was, therefore, necessary for the project to decide if the Nordic welfare indicators would need to be fully harmonised with figures published notably by Eurostat. On the one hand, an important aim with the suggested system of Nordic welfare indicator is to present timely indicators with a Nordic focus. If this is clearly stated, the project sees no problem that the Nordic welfare indicators differ from those presented by Eurostat. In fact, it is already the case that figures presented in e.g. the database Nordic Statistics do not always correspond to the ones presented by e.g. Eurostat partly due to the frequency of updating and revisions of the figures published by Eurostat on their home page and in printed reports. On the other hand, it should be recognised that publishing figures that differs from the one published by e.g. Eurostat may cause doubt about the reliability of the Nordic welfare indicators which in turn may deter potential users.

Concerning the suggested approach of retrieving the indicators from Eurostat the project sees no problems with the issue of coherence. In the case the indicators are provided by the national statistical institutes there may be discrepancies due to e.g. differences in processing and cleaning of data. However, since the national statistical institutes provide the underlying data and the indicators this would serve as a guarantee of the quality and would

⁵ For researchers to access the EU-SILC User Data Base the time lag is longer.

in turn promote the use of the indicators. The project suggests that timeliness should be the main guidance and that differences between figures published by different actors may occur anyway. Nevertheless, it's important to clearly present the source as well as time of update of the indicator.

6.2. Presentation of the indicators

An easy access to the indicators is crucial for the indicators being used as intended. The experience from the implementation and management of e.g. the Findicator has been guiding the suggestion below. As mentioned above, it is suggested that the indicators are presented in the database Nordic Statistics and eventually on iLibrary. Physical presentations could be considered but should be limited to e.g. brief fact sheets or leaflets. A visualisation of the indicators, directly on the web-page in e.g. graphs and tables, enables a quick overview of negative/positive developments and diverging/converging trends. There are of course various ways and techniques to visualise the indicators and the approach should be kept as clear and transparent as possible. However, the project has not found any examples of comparative indicator systems that provide such a comprehensive presentation of indicators concerning the number of distributional presentations of sub-groups that are suggested for the Nordic welfare indicators, let alone covering the Nordic countries.

It is furthermore suggested that the access of the indicators on the web allow for some additional direct elaborations than what is currently possible in the database Nordic Statistics and the iLibrary (see the web based prototype referred to above). In order to facilitate more in-depth analyses of the indicators it is also suggested that the underlying data for the indicators are possible to download in e.g. excel format. Thus, there should be direct links to the underlying data, preferable also in an open access (API) format. The underlying data source should also be clearly referred to including references to possible primary source and definitions. Any changes in underlying data over time should be indicated as well as changes in the definition of the indicator. Any breaks in trends or changes in definitions should be indicated e.g. in line with the Eurostat flag system. The indicators should also be clearly explained.

Finally, in order to reach concerned users it is suggested that the launch but also the yearly update of the Nordic welfare indicators are communicated and that this should be done in relation to some event by the Nordic co-operation.

6.3. Estimated cost of implementation and maintenance

The project also found it important to facilitate the implementation of the Nordic welfare indicator system by pointing at some practical aspects. Below is, therefore, presented rough estimates of the related costs for the two alternative approaches. Please note that the estimates of the cost are preliminary and that some of the factors behind these suggestions for implementations still are uncertain or under development. Thus, further work would be needed in order to implement the system in the alternative approach, notably related to the role of the national statistical institutes.

The below estimates for the National Statistical Institutes are based on an ad hoc assumptions of number of work hours needed to perform the tasks which is 5-8 hours per implemented indicator and 1-2 hours per update. The estimated cost in DKK is based on an average hourly cost for a majority of the national statistical institutes (ca DKK 780 per hour). The hours and costs related to the suggested approach are based on a preliminary estimate provided by DST consulting at Statistics Denmark for implementing and updating the suggested indicators. While there are already some structures in place for implementing the system the costs lies mainly in the extraction of new data, processing the data and uploading the indicator in the database Nordic Statistics.

In the suggested approach, DST consulting at Statistics Denmark implements the full indicator system and updates the indicators. The implementation includes the extraction processing and publishing the indicators in the database Nordic Statistics but not on the iLibrary. The estimated one-off cost in hours of work needed for implementation is approximately 100 hours or DKK 100.000. The estimated hours needed for updating the Nordic welfare indicators are approximately 50 hours or DKK 50.000 per update.

In the alternative approach the national statistical offices extract, process and deliver the data to DST consulting which in turn process and upload the indicators in the database Nordic Statistics. For the implementation phase it is assumed that hours of work are relocated to the national statistical institutes while reducing somewhat the hours of work for DST consulting. The estimated one-off cost of implementing the indicators following this approach is between 750 and 1.200 hours or approximately between DKK 700.00 and DKK 1.000.000. The estimated hours needed for updating is between 150 and 300 hours or approximately DKK 150.000 and DKK 250.00 per update.

7. IDENTIFIED FUTURE NEEDS AND POTENTIAL DEVELOPMENTS

During the work of the project it became clear that not all Nordic welfare aspect identified as important could be captured through existing data sources. Although the approach employed in developing the suggested system would cover some of the identified needs there were several that were not at all possible to capture. The reasons were mainly the lack of comparable data and trends but also that some aspects, such as for example data about homelessness, mental health and segregation are not regularly collected or collected in a harmonised way. Although some of the data needed concerning e.g. segregation could be possible to develop it was beyond the scope of the project. Nevertheless, the project finds it important to highlight gaps in the measurement of Nordic welfare, which sometime coincide with general obstacles of measuring welfare at national level. Below are, therefore, listed some aspects and challenges that the project found important but for which it was not possible to define common Nordic welfare indicators.

A current issue that was identified already at the kick-off meeting and that has become even more prominent during the work of the project is the *immigration* flows and its consequences on the individual and overall welfare. While some of the suggested indicators could capture these flows although with some time-lag e.g. through presentation by foreign born, many aspects of *integration* and *segregation* can only be found in non-harmonised national data.

Problems related to increase in *mental health* problem has during recent year been in focus both in research and in policy. Although, harmonised indicators have been developed that try to capture mental health problems issues related to e.g. measurement and coverage remains a problem and the project was not able to find any suitable indicators that was possible to follow over time for the Nordic countries.

Some of the suggested indicators are able to capture *children's welfare* either through age or through presentation by family type, however, various central aspects such as e.g. children's subjective well-being have not been possible to capture in the suggested indicator system.

Issues related to *evictions and homelessness* have long been discussed and addressed at national as well as at international level and lack of harmonised measures and approaches to measure these phenomenon has been acknowledged. While at least evictions may be

possible to capture through administrative data homelessness need other types of tools to be measured at individual level.

Furthermore, the general problem of the limitations of survey in covering certain sub-groups of the population could to some extent be solved by extended use of administrative data and registers. Still, various aspects such as e.g. *the situation of ethnic minorities and human trafficking* require alternative approaches to be adequately monitored and analysed.

For various aspects of welfare, that the project judged important to include in the indicator system, indicators and data were available for the five Nordic countries; however, the frequency of collection was limited to once or twice and with time gaps of several years. This was especially the case for indicators based on the EU-SILC and e.g. indicators related to *access to services, civic engagement and social participation*.

The project was not able to find any suitable harmonised individual outcome indicators of welfare that took into account disability or activity limitation. Although such indicators exist further work is needed in order to assess their quality.

Problems related to crimes statistics has also been noted as an area for development and notably *domestic violence*. Although harmonised comparative statistics exists at e.g. EU level it is seldom possible to present as individual outcome indicators. Administrative data at national level may have the potential to cover the extent and effect of e.g. domestic abuse on individual's welfare.

Ideally, the measurement of individual welfare should be able to link individual outcomes in all indicators and all the nine dimensions of the suggested indicator system. The current definition of the indicator system enables individual linking of some few indicators through the use of the EU-SILC and EU-LFS surveys, however, their sample sizes as well as the other data sources used, limit the extent in which indicators and dimensions can be measured at the individual level. Thus, an extended use of national registers and administrative data would increase the possibility to link individual welfare outcomes in a larger number of indicators and welfare dimensions.

7.1. Potential future developments of the system

One of the aims of the project has been to develop indicators that in a timely way can be used for early warning of negative impacts of crises. The Nordic countries have a long tradition of register and administrative data that could serve as a basis for such indicators.

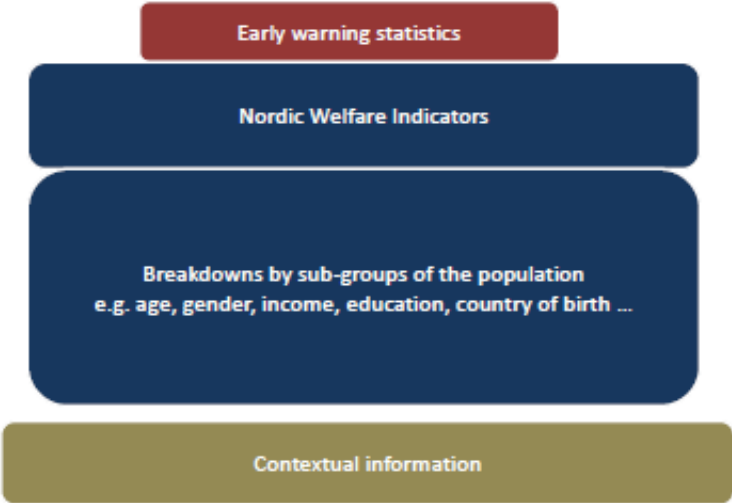
This approach was also discussed and assessed by the project but it was not possible to pursue within the scope of the project. Still, the project would like to highlight both the importance as well as the potentials of increased use of national register and administrative data and below is therefore suggested some ways for the system of Nordic indicator could be developed further in order to tap some of the potentials of registers and administrative data in the Nordic countries as well as how to incorporate the statistics already delivered, by the national statistical institutes, in the database Nordic Statistics.

The increased use of administrative data and register and in particular tax register has the potential to develop more timely reporting of negative trends and thus more timely warning. Another important result of more harmonised use of register and administrative data is the potential to develop tools for comparing and analysing tax and benefit systems and thus the potential of ex ante and ex post policy analyses in the Nordic countries, in particular through common micro-simulation models.

Thus, the Nordic welfare indicators and their possible presentation by sub-groups could be complemented with timely statistics based on register and administrative data which is illustrated on the top in figure 1. While these could cover statistics available on monthly, quarterly or yearly basis e.g. number of unemployed persons, number of new sickness cases and social assistance they would bring important information on potential early social trends that may need to be monitored. These developments should be seen as complement to the Nordic welfare indicators, illustrated by the boxes in the middle in the figure, which would have the potential to analyse in more depth the trends both in specific welfare dimensions and in potential groups at risk.

Furthermore, at the bottom of the figure is illustrated contextual and background statistics which would give important information for in-depth Nordic comparisons. Most of this information would already be available in e.g. the database Nordic Statistics, Nordic Statistical Yearbooks and NOSOSCO and NOMESCO publications in the form of e.g. aggregated demographic, economic, environmental and social statistics.

Figure 1. An extended indicator system for early warning, monitoring and comparative analyses of Nordic welfare



In addition to monitor individuals welfare the suggested approach would enable monitoring of important factor of individuals’ welfare such as for example increase in sickness absence as well as timely indications on negative or positive developments. The project judge that such developed and comprehensive system could serve an important role, both as a more complete early warning system and as a more comprehensive tool for in-depth Nordic comparisons.

8. RECOMMENDATIONS

The project team is positive that the system of Nordic welfare indicator presented in this report would bring an added value to the monitoring of Nordic welfare and more importantly, it has the potential to become an important tool for analysing the impacts of crises on individuals’ welfare in the Nordic countries and with a focus on e.g. gender, age or vulnerable groups in the population. It has furthermore the potential to increase the sharing of experience between the Nordic countries about which policies can respond effectively to negative trends and crises.

While the suggested system of indicators presented in this report should be seen as a first step and while the suggested presentation by sub-groups of the population of each indicator are still limited due to technical restrictions, the system suggested above, as it

stands, could be a powerful tool that easily could be implemented and to a relatively low cost. The project therefore hopes that the following **recommendations** would serve as guidelines for the implementation of the Nordic welfare indicators and its future role:

- It is recommended that the suggested system of Nordic welfare indicators is implemented and updated by DST consulting at Statistics Denmark.
- Although there are currently technical restrictions of presenting the Nordic welfare indicators when it comes to the presentation of sub-groups of the population it is recommended that the collection of indicators start as soon as possible and thus becomes available for initial presentation in the database Nordic Statistics and at an aggregate level in the iLibrary.
- It is recommended that NOSOCO is given the role to assess the Nordic welfare indicator system, after two years from the implementation, including also assessing and suggesting how national collection and delivery of data could improve the timeliness and the presentation of sub-groups of the population for the indicators.
- It is furthermore recommended that NOSOCO is given the overall responsibility for the management of the system of Nordic welfare indicators concerning its structure, content and development. In this work a special focus should be given to the potentials of national register and administrative data.
- It is recommended that efforts are made to improve the access to and use of the Nordic welfare indicators following the suggestions in this report and in line with the presented web-prototype.
- Finally, it is recommended that both the implementation and the yearly update of the Nordic welfare indicators are communicated and that the communication is made in relation to an event by the Nordic co-operation.

APPENDIX

A SYSTEM OF NORDIC WELFARE INDICATORS

Dimension	Indicator	Definition	Sub-groups	Example of interpretation - focus on effect of crisis	Data source	Available years*
1. Health						
1.1	Self-reported health status	Self-perceived health is surveyed through a question on how a person perceives his / her health in general, using one of the following answer categories: very good, good, fair, bad or very bad. It refers to health in general rather than the present (perhaps temporary) state of health and concerns physical, social and emotional functions and biomedical signs and symptoms. Measure: percentage	Age groups Gender Employment status	Self-reported health status may respond slowly to shocks from financial crises. It may decrease due to increase in unemployment and long-term unemployment and health status is correlated with life satisfaction.	Eurostat: EU-SILC	2004-
1.2	Self-reported unmet need for medical care (examination)	Total self-reported unmet need for medical examination for the following three reasons: financial barriers + waiting times + too far to travel. Person's own assessment of whether he or she needed examination or treatment for a specific type of health care, but didn't have it or didn't seek for it. EU-SILC collects data on two types of health care services: medical care and dental care. Measure: percentage	Age groups Gender Income status	An increase in the self-reported unmet need for medical care is related to a negative outcome in welfare. It may decrease due to increased difficulties in the access to medical care.	Eurostat: EU-SILC	2004-

1.3	Self-reported unmet need for dental care (examination)	Total self-reported unmet need for dental care for the following three reasons: financial barriers + waiting times + too far to travel. Person's own assessment of whether he or she needed examination or treatment for a specific type of health care, but didn't have it or didn't seek for it. EU-SILC collects data on two types of health care services: medical care and dental care. Dental care: refers to individual health care services provided by or under direct supervision of dentists. Health care provided by orthodontists is included. Measure: percentage	Age groups Gender Income status	An increase in the self-reported unmet need for dental care is related to a negative outcome in welfare. It may decrease due to increased difficulties in the access to medical care.	Eurostat: EU-SILC	2004-
1.4	Deaths from circulatory diseases	Deaths from circulatory diseases per 100 000 inhabitants by gender, age standardized rates. ICD-9: 390-459 and ICD-10: I00-I99. NOMESCO definition.	Age groups Gender	Decreases due to e.g. less work related stress. Decreases if consumption of alcohol and tobacco decreases, even if work related stress increases.	NOMESCO	2000-
1.5	Cancer mortality rate	Death rates from malignant neoplasms per 100 000. ICD-9: 140-208 and ICD-10: C00-C97. NOMESCO definition.	Age groups Gender	Decreases due to less alcohol and tobacco consumption but less efficient screening may cause increased incidence in breast and cervix cancer among women.	NOMESCO	2000-
1.6	Deaths from suicide	Deaths from suicide per 100 000 inhabitants. For children - ICD-10: X60-X84. NOMESCO definition.	Age groups Gender	Decreases due to less alcohol and tobacco consumption and work related stress. A financial or economic crisis may increase deaths from suicide if the crisis is severe and/or last over a longer period.	NOMESCO	2000-

2. Educational skills					
2.1	Early leavers from education and training	Early leavers from education and training denotes the percentage of the population aged 18 to 24 having attained at most lower secondary education and not being involved in further education or training. The numerator of the indicator refers to persons aged 18 to 24 who meet the following two conditions: (a) the highest level of education or training they have completed is ISCED 2011 level 0, 1 or 2 (ISCED 1997: 0, 1, 2 or 3C short) and (b) they have not received any education or training (i.e. neither formal nor non-formal) in the four weeks preceding the survey. The denominator in the total population consists of the same age group, excluding the respondents who have not answered the questions 'highest level of education or training successfully completed' and 'participation in education and training'. Measure: percentage	Age groups Gender Employment status Country of birth (Foreign country, Reporting country)	Early leavers from education and training may face considerable difficulties in the labour market: for example, they may find it difficult to obtain a secure foothold as employers may be more reluctant to take them on with their limited education.	Eurostat: 2004- EU-LFS
2.2	Educational attainment	The distribution of the share of the population (25-54) who have successfully completed education that equals International Standard Classification of Education (ISCED) level (0) 1-6, Focusing on those with either low (0-3) or high (5-6). Measure: percentage	Age groups Gender Employment status Educational level	Educational attainment is positively related to e.g. health, individual income situation and welfare. Education may indicate imply less risk of a negative effect of a crisis	Eurostat: 2004- EU-LFS

3. Employment

3.1	Employment rate	Employed persons (age 20-64) as a proportion of total population in the same age group. Measure: percentage	Age groups Gender Country of birth (Foreign/reporting country)	Employment rate may change quickly following a financial or economic crisis and groups with less strong foothold on the labour market may be affected more quickly. Employment may be positively correlated to welfare and income	Eurostat: EU-LFS	2003-
3.2	Unemployment rate	Unemployed persons as a percentage of the labour force. Measure: percentage	Age groups Gender Country of birth (Foreign/reporting country)	Unemployment rate may change quickly following a financial or economic crisis and groups with less strong foothold on the labour market may be affected more quickly. Unemployment may be negatively correlated to welfare and income	Eurostat: EU-LFS	2003-
3.3	NEET	Young people neither in employment nor in education and training. Measure: percentage	Age groups Gender Country of birth (Foreign/reporting country)	NEET rate may change quickly following a financial/economic crisis and it especially target groups with less strong foothold on the labour market. NEET may be negatively correlated to welfare and income	Eurostat: EU-LFS	2004-
3.4	Long-term unemployment rate	The share of unemployed persons since 12 months or more in the total active population. Measure: percentage	Age groups Gender Country of birth (Foreign/reporting country)	Long-term unemployment is negatively related to welfare and income. May increase following a financial or economic crisis.	Eurostat: EU-LFS	2004-
3.5	Involuntary part-time	Involuntary part-time employment as percentage of the total part-time employment. Persons working on an involuntary part-time basis are those who declare that they work part-time because they are unable to find full-time work. Measure: percentage	Age groups Gender	Involuntary part-time may be negatively correlated with welfare and income. May increase following a financial or economic crisis.	Eurostat: EU-LFS	2004-

4. Work-life balance

4.1	Childcare	Percentage of children (0-3 and 3-compulsory school age) cared for by formal arrangements by weekly time spent in care. Formal childcare by age group and duration - % over the population of each age group by duration (less than 30 hours a usual week; 30 hours or more a usual week), age of the child (0-2 years; 3 to admission age for compulsory school; admission age for compulsory school to 12) and country. Measure: Percentage	Hours of child care Age of child	A high participation in childcare has a positive effect on parents, notably mothers, participation in the labour market.	Eurostat: EU-SILC	2005-
4.2	Parental leave	Number of days in which maternity benefits were drawn per new-born - days with daily cash benefits in connection with pregnancy, childbirth or adoption during the year. And of which men in percent. Measure: days and percent	Maternity days Men's share of days	Men's share of parental leave has a positive effect on mothers' participation in the labour market and on the sharing of domestic work.	National Statistical Institutes and NOSOSCO	2000-
4.3	Average number of actual weekly hours of work	Average number of actual weekly hours of work in main job, by sex, professional status, full-time/part-time and occupation (hours). Measure: days per week	Gender Working time Employment status	A higher average number of weekly working hours may indicate problems in combining family and work. However, this also depends on the average number of weekly hours by women and men.	Eurostat: EU-LFS	2005-

5. Income and earnings

5.1	Mean and median net income	Median net income after taxes and transfers. Equivalised, nominal in PPS, Euro and nat. currency. Eurostat applies an equivalisation factor calculated according to the OECD-modified scale which gives a weight of 1.0 to the first person aged 14 or more, a weight of 0.5 to other persons aged 14 or more and a weight of 0.3 to persons aged 0-13. Measure: income (mean, median) in euro, PPS and national currency	Household type**	Change in income may also indicate how well welfare systems respond to a financial or economic crisis through social insurance and social protection systems. Income may be positively correlated to e.g. welfare, health and income. Income may change quickly due to financial or economic crisis.	Eurostat: EU-SILC	2004-
5.2	Distribution of disposable income	Distribution of equivalised household net disposable income by quintiles. Measure: percent	Quantiles (i.e. share of population by various income thresholds)	Change in the distribution of disposable income may indicate that groups are affected more negatively by a financial and economic crisis.	Eurostat: EU-SILC	2005-
5.3	Relative risk of poverty rate (possibly also by illustrative AROP threshold)	Share of persons with an equivalised disposable income below 60% of the national equivalised median income. Measure: percent, poverty threshold	Household type**	Relative risk of poverty may increase follow a financial or economic crisis if the disposable income of those with an income below the risk of poverty threshold decreases more than those with income above the threshold. However, the relative risk of poverty rate may decrease if the income of those above the risk of poverty threshold decreases more than for those below the threshold. The risk of poverty rate may identify groups that are affected more negatively by a financial or economic crisis.	Eurostat: EU-SILC	2005-

5.4	Persistent low income	Having an equivalised disposable income below the risk of poverty threshold (40 and 60%) in the current year and in at least two of the preceding three years', where 'current' means the last year for which income data are available and the 'at-risk-of poverty threshold' is taken, as 60% of the national median. Measure: percent	Age groups Gender Poverty threshold (40 and 60%)	Individuals and households with an income below the at risk of poverty threshold during several consecutive years are more vulnerable to a financial or economic crisis. The share of individuals with persistent low income may increase following a financial or economic crisis.	Eurostat: EU-SILC	2005-
5.5	Material deprivation	Share of population living in households lacking at least 3 and 4 items out of the following 9 items: i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, or could not afford (even if wanted to) vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone. Material deprivation refers to the inability for individuals or households to afford those consumption goods and activities that are typical in a society at a given point in time, irrespective of people's preferences with respect to these items. Measure: percent	Age groups Gender Number of items Poverty threshold (above and below 60%)	Material deprivation may increase following a financial or economic crisis, however, possibly more slowly than for example disposable income. Material deprivation and the at-risk-of poverty (and conventional income measures) are complementary perspective on financially vulnerable groups.	Eurostat: EU-SILC	2005-
5.6	Arrears on mortgage, rent payments, utility bills and hire purchase	Percentage of the population reporting arrears (mortgage or rent, utility bills or hire purchase). Measure: percent	Household type** Poverty threshold (above and below)	The indicator complements conventional income measures and indicates financial problems of individuals and households. The indicator may also respond relatively quickly to financial and economic crises.	Eurostat: EU-SILC	2004-

6. Housing

6.1	Median share of housing cost in disposable income	Median share of housing cost in disposable income (e.g. EU-SILC Measure: percent	Household type** Poverty threshold (above and below 60%)	Median share of housing cost in disposable income indicates how much if the disposable income is devoted to housing and may indicate the financial margin of household in the case of financial and economic crises. The lower margin the higher financial risk for the household.	Eurostat: EU-SILC	2005-
6.2	Self-reported financial burden of total housing cost.	The financial burden of the total housing cost refers to the percentage of persons in the total population living in a dwelling where housing costs, including mortgage repayment (instalment and interest) or rent, insurance and service charges (sewage removal, refuse removal, regular maintenance, repairs and other charges), consist a financial burden, based on the following levels of financial burden: 1. Households with heavy financial burden due to the housing costs, 2. Households with financial burden due to the housing costs. 3. Households without financial burden due to the housing costs. Measure: percent	Measure of affordability Household type** Poverty threshold (above and below 60%)	The indicator complements the indicator 6.1 "Median share of housing cost in disposable income" and indicates the households subjective financial burden of housing cost. The indicator may respond relatively quickly to financial and economic crises.	Eurostat: EU-SILC	2005-

7. Social network and participation

7.1	Social network	How often socially meet with friends, relatives or colleagues. Present distribution focusing at those reporting once a month or less. Measure: percent	Age groups Gender	Social network may indicate potential support in both social and professional life and may be a positive factor in meeting financial and economic crises.	European Social Survey (ESS)	Every 2 nd year 2002 - 2014 Except Iceland 2008 and 2012.
7.2	Social support	Anyone to discuss intimate and personal matters with (2004 and 2008) How many people with whom you can discuss intimate and personal matters (2012) Measure: percent	Age groups Gender	Social support may indicate potential support in notably social life and may be a positive factor in relation to mental health.	European Social Survey (ESS)	Every 2 nd year 2002 - 2014 Except Iceland 2008 and 2012.
7.3	Social participation	Worked in political party or action group last 12 months and/or worked in another organisation or association last 12 months. Measure: percent	Age groups Gender	Social participation may indicate a society's engagement and preparedness in meeting challenges such as financial and economic crises.	European Social Survey (ESS)	Every 2 nd year 2002 - 2014 Except Iceland 2008 and 2012.

8. Personal security						
8.1	Crime, violence or vandalism in the area	Share reporting crime, violence or vandalism in the neighbourhood area. Measure: percent	Household type** Poverty threshold (above and below 60%)	The indicator relates to individuals perception of safety in the country and may increase following a financial and economic crisis.	Eurostat: EU-SILC	2004-
8.2	Deaths from accidents	Causes of death per 100000 inhabitants. Accidents. ICD-10 =V01-X59. NOMESCO definition.	Age groups Gender	The indicators relate to actual risk of death from accidents and may complement indicator 8.1 "Crime, violence or vandalism in the area".	National Statistical Institutes and NOMESCO	1998-
9 Subjective well-being						
9.1	Life satisfaction	How satisfied with life as a whole (European social survey) Overall life satisfaction (EU-SILC). Distribution by low (0-5), high (6-8) and high (9-10) and mean.	European social survey: Age groups, Gender EU-SILC: Age groups, Gender, Socio-economic groups etc.	Indicate the overall life satisfaction and is e.g. positively related to subjective health and negatively related to unemployment rate. The indicator may respond relatively quickly, but usually temporarily, to a financial and economic crisis.	European Social Survey and EU-SILC module and from 2017 only EU-SILC	ESS: every 2 nd year 2002 – 2014, Iceland 2008 and 2012. EU-SILC: 2013, 2017-

*Collected yearly if not stated otherwise. **Household types: Single person, One adult younger than 65 years, One adult older than 65 years, Single person with dependant children, Two adults, Two adults younger than 65 years, Two adults, at least one aged 65 years or more, Two or more adults with dependant children, Two or more adults without dependant children, Households with dependant children, Households without dependant children

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