Nordregio

Public service delivery in the Nordic Region:
An exercise in collaborative governance

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Summary

Nordic welfare states are world renowned for providing high quality public services. Nordic municipal and regional authorities, in particular, play a central role in the delivery of key public services in areas, such as, health, education, and social care. However, in recent years, public authorities have faced several challenges which have reduced capacity and resources, including long periods of austerity following the 2008 financial crash, rapid demographic changes caused by an ageing population, and the COVID-19 health crisis. In response to these challenges many public authorities have looked to inter-regional, inter-municipal and cross-border collaborations to improve the quality and effectiveness of public service delivery (OECD 2017; ESPON 2019). Indeed, collaborative public service delivery is becoming increasingly prominent in the Nordic Region due to a highly decentralized systems of governance (Nordregio 20015; Eythorsson 2018).

This report highlights six best practice examples of collaborative public service delivery from across the Nordic Region, with a main geographical focus on remote rural areas. Nordic policymakers and other stakeholders can learn from a wide variety of experiences, which can inspire others to engage in collaborative governance initiatives. The report highlights the main drivers, challenges, enablers, benefits and replication potentials of Nordic collaboration. Lessons are drawn from both local community initiatives, inter-municipal, inter-regional and cross-border collaborations. Thematically, case studies cover key areas of public service provision, including healthcare, welfare/social care, education and transport.

The report finds that Nordic collaboration between different levels of governance remains strong despite the disruptions caused by the current pandemic. New and innovative models of collaboration are constantly emerging thanks to technological developments that are helping to bring stakeholders together to solve common societal challenges. The high levels of cooperation outlined in this report indicate that collaborative governance is continually evolving within the Nordic context.

Sammanfattning

Nordiska välfärdsstaterna är kända för att leverera högkvalitativ offentlig service, där kommuner och regioner spelar en central roll för att tillhandahålla hälso- och sjukvård, utbildning och social omsorg. Dock har offentlig förvaltning runt om i Norden under de senaste åren ställts inför en rad utmaningar som har minskat kapaciteten och resurserna; däribland långa åtstramningsperioder efter finanskrisen 2008, snabb demografisk förändring genom en åldrande befolkning och de kriser som pandemin Covid-19 utlöst. Som ett svar på utmaningarna har många offentliga organ börjat titta på mellanregionala, mellankommunala och gränsöverskridande samarbeten för att effektivisera och förbättra kvaliteten av offentlig service (OECD 2017; ESPON 2019). Olika samverkansprocesser (collaborative governance) för att tillhandahålla offentlig service blir allt mer framträdande inom de nordiska länderna på grund av, i stor utsträckning, decentraliserade styrningsmodeller (Nordregio 2015; Eythorsson 2018).

Denna rapport lyfter fram sex goda exempel på samverkan för att leverera offentlig service runt om i Norden, med geografiskt fokus på lands- och glesbygd. Lärdomar hämtas från lokala utvecklingsinitiativ, mellankommunala och mellanregionala samt gränsöverskridande samarbeten. Tematiskt belyses offentlig service såsom sjukvård och omsorg, utbildning, infrastruktur och kollektivtrafik samt digitala tjänster. Nordiska beslutsfattare och andra intressenter kan här lära och inspireras av de drivkrafter, utmaningar och möjliggörare, erfarenheter och replikeringspotential som fallstudiernas samarbetsprocesser belyser.

Rapporten konstaterar bland annat att samarbete mellan olika förvaltningsnivåer i den nordiska regionen är fortsatt starkt, trots de utmaningar som pandemin fört med sig. Nya och innovativa modeller av samarbete växer ständigt fram tack vare teknologisk och digital utveckling som bidrar till att sammanföra olika intressenter för att lösa samhällsutmaningar. Den nivå av samverkan för att tillhandahålla olika typer av services som fallstudierna belyser visar på att samverkansprocesser kontinuerligt utvecklas och kan bli ett allt viktigare inslag i den nordiska kontexten.

1. Introduction

This policy report assesses new and innovative approaches of inter-municipal, inter-regional and cross-border collaborations in the delivery of public services within the Nordic Region. Nordic welfare states are world renowned for providing high quality public service provisions. Indeed, regional and municipal authorities play a central role in the delivery of key public services within Nordic states in areas including social and elderly care or education. The ongoing Covid-19 crisis has also reinforced the important role of local actors in healthcare provision, where countries with decentralized systems of governance have proven more successful in implementing effective test, track and trace policies.

In recent years, the delivery of public services in the Nordic Region has become increasingly challenging as capacity and resources at the regional and municipal level vary greatly, often making regional and local authorities dependent on national level support (Wiberg & Limani, 2015). Resource deficiencies have been exacerbated by periods of austerity following the 2008 financial crash; furthermore, rapid demographic changes, caused by an ageing population and increasing levels of immigration, have put increasing pressure on the quality and effectiveness of public service delivery in the Nordics (Nordregio 2015). In response to these challenges, policy and decision-makers have embraced the idea of inter-regional, inter-municipal and cross-border collaborations to improve the quality and effectiveness of public service delivery (OECD 2017; ESPON 2019).

Collaborative public service delivery is becoming increasingly prominent in the Nordic Region due to highly decentralized systems of governance (Nordregio 20015; Eythorsson 2018). This type of cooperation is grounded in the concept of collaborative governance which emphasizes the need for local and regional actors to pool resources to deliver public policies and services efficiently and effectively (Ansell & Gash 2007; Emerson et al 2011). Collaborative governance is regarded as particularly beneficial for smaller Nordic regions and municipalities as they can potentially increase financial resources and administrative capacities, reduce transaction costs, and establish economies of scale and critical mass (Andersen & Pierre 2010).

However, there are multiple challenges in establishing collaborative ventures across jurisdictions, including different governance and legal frameworks, competing policy priorities and delivery methods, and an unwillingness to invest in horizontal coalitions or give up autonomy (Haveri, Nyholm, Roseland & Vabo 2009).

This report highlights some best practice examples of collaborative public service delivery from across the Nordic Region. The focus is on examining the main challenges and advantages of cooperation and whether they are consistent with the key features the collaborative governance concept. The overall objective of the report is to analyse whether collaboration enhances the quality and effectiveness of public service delivery, so that Nordic policymakers and other local stakeholders can learn from a wide variety of experiences, and gain inspiration for their own collaborative governance projects.

In meeting this objective, the report explores the following core research questions:

- What are the main drivers of collaboration?
- Who are the main drivers of collaboration?
- What are the main aims of collaboration?
- What governance structures are collaborations built on?
- Which stakeholders are involved in collaborations?
- What are the main benefits of collaboration?
- What are the main challenges of collaboration (e.g. institutional, financial, legislative, sector-specific)?
- Does collaboration enhance the quality, effectiveness and efficiency of service delivery?
- Does collaboration enhance legitimacy?
- What best practice learnings and recommendations can be made, also for replication and upscaling?

The report analyses examples of public service delivery collaborations from across all Nordic countries and autonomous regions, with a main geographical focus on remote rural areas. Careful case selection assures that the report provides lessons from both local community initiatives, as well as inter-municipal, inter-regional and cross-border collaborations. Thematically, case studies cover key areas of public service provision, including healthcare, welfare/social care, education and transport. Multifunctional units / "service bundles" are also included, as are those collaborations that embrace digitalization and social innovation, involving stakeholders from across the innovation chain, such as non-governmental and non-profit organizations (Table 1).

Map 1 shows all cases studies.

Case	Types of collaboration / levels of governance involved	Types of services covered
Denmark: Preparatory Basic Education and Training in Denmark	Inter-municipal	Education
Finland: Local collaboration for service provision on the island of Bergö	Local community initiative	Education, health, elderly care
Iceland: Bolungarvíkurgöng tunnel	Inter-municipal	Infrastructure (road/tunnels)
Norway: HentMeg Sauda & HentMeg Bodø	Inter-regional	Transportation
Sweden: #fulltäckning	Inter-regional	Infrastructure (IT)
Sweden-Norway: VälTel	Cross-border	Health, elderly care

Table 1. Case study areas
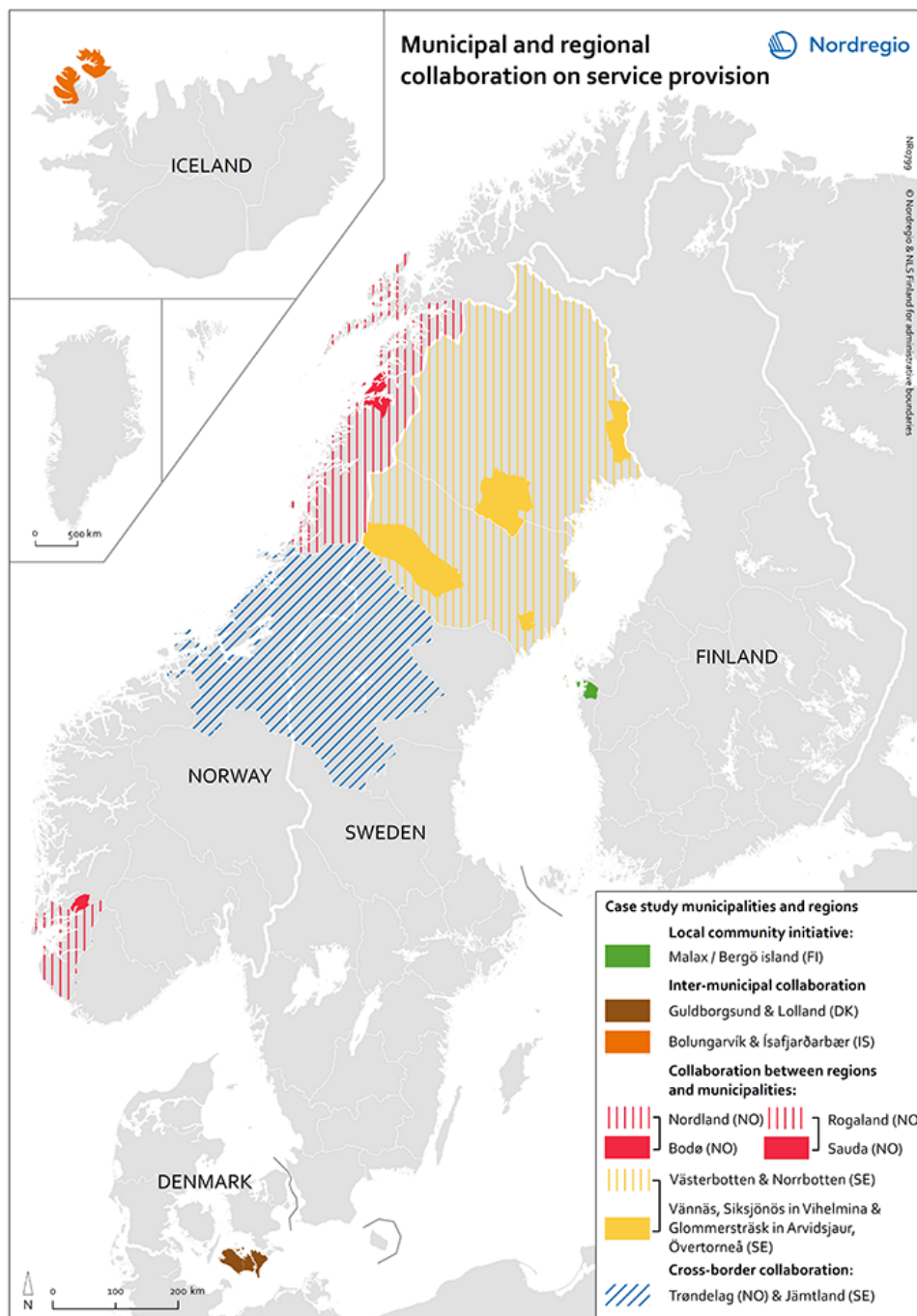
Map 1. Municipal and regional collaboration on service provision – case study areas. Cartographer: Shinan Wang, Nordregio.

Before zooming in on the case studies, we proceed with a contextual overview of collaborations in public service delivery, identifying key definitions, drivers and features of collaborative action identified in academic literature and policy documents. The proceeding section examines the key tenets of collaborative governance, exploring the main benefits and challenges of collaborative interactions. This is followed by an empirical analysis of the selected case study examples. The final section of the report will draw and synthesize some conclusions from across the different case studies, identifying good practices of collaborative action tools and methods that will serve as examples for learning in the Nordic Region. The final section includes some future reflections based on practical policy recommendations aimed at improving collaborative service delivery

provision in the future.

1.1 Contextual overview: collaboration in public service delivery

Collaboration in the delivery of public services is becoming an increasingly common phenomenon. This is reflected in the growing body of academic literature devoted to the topic, which has examined heterogeneous types of collaboration occurring within different countries and across levels of governance. This section of the report provides an overview of this literature focusing on three different types of collaborations, including: 1) collaborations within clearly defined jurisdictional boundaries; 2) Inter-regional and inter-municipal collaborations and 3) cross border collaborations.

Collaborations within clearly defined jurisdictional boundaries

Recent public sector reforms have focused on enhancing collaboration between public authorities and non-state actors (Ansell, Sorensen & Torfing 2017). Collective action between public and private actors has been particularly evidenced in the delivery of public services that address key societal problems (Howlett & Ramesh 2016). Kekez et al (2018) define collaborative service delivery as 'a specific mode of governance by which policies are implemented and services delivered through interaction between two or more of state, market, and civil society actors.' The work of Kekez et al (2018) examines collaborations within clearly defined jurisdictional settings and highlights that collaborative governance arrangements can involve a combination of different stakeholders, with different functions and policy thematic focus. They identify six different types of collaborations in service delivery outlined in Table 2.

Collaboration type	Description
Consultative in-house service delivery	Direct provision of services by public authorities and agencies via dialogue with key stakeholders and the citizens.
Contracting out	Public authorities and agencies contract out delivery of public services to different public and private stakeholders.
Commissioning	Public services and designed and delivered by public and private actors in line with policy direction of public authorities and agencies.
Co-management	Civil society organizations work together with public and private actors in the development and delivery of public services.
Co-production	Public and private actors interact with citizens in the development and delivery of public services.
Third party certification	Civil society groups and other public and private actors ensure quality control of public services by determining standards and monitoring delivery.

Table 2. Types of collaboration in public service delivery.
Source: authors own elaborations based on Kekez et al 2018.

Kekez et al (2018) note that there is no one-size-fits-all approach, with the model of collaboration to be selected chosen on the basis of different socio-economic and political contextual factors. They point out that public authority leadership and administrative resource capacity are particularly important for successful collaborations, alongside high levels of trust between public authorities and other private sectors and civil society groups. Ultimately, they identify the core aim of the collaboration is to share resources effectively, encourage joint learning and knowledge production, enhance social capital, and improve legitimacy by increasing stakeholder support for policies (Kekez et al 2018). While the work of Kekez et al (2018) provides an excellent conceptual framework for examining collaborative initiatives within clearly defined jurisdictions, they do not examine cooperative action between and across different territories. Other academic research has focused on analysing collaborations between different regions and municipalities in the delivery of public services.

Interregional/intermunicipal collaborations

Rapid technological developments and an increasing number of challenges that transcend territorial boundaries have created the conditions for regional and local authorities to consider new and innovative governance and management tools. It is within this context that interregional and intermunicipal collaborations are emerging as mechanisms for delivering public services more effectively and efficiently. Teles et al (2018) note that 'most problems can only be addressed through joint actions of multiple actors involved in different and, often, flexible arrangements, crossing sectors and levels of governance.' Collaboration is particularly needed in relation to challenges regarding sustainability and climate change, environmental issues such as water and waste management, and the development of circular economy initiatives and innovations ecosystems.

In their seminal work on Inter-municipal collaboration in a European context, Teles and Swianiewicz (2018) note that collaborations 'vary in shape, scope and integration', but are largely ad hoc and informal in character, rather than formal and institutionalized activities. They highlight that most academic research on intermunicipal and interregional collaborations have focused their attentions on the drivers and outcomes of collaborations, rather than the how they function. Economies of scale to help overcome resource shortages is the central driver of cooperative activities, whereas, different administrative traditions, governance structures, and strong local identities make collaboration a complex process. While collaboration can strengthen democracy and regional autonomy by brining policymaking closer to the citizen, collaborative activities can also lack transparency, accountability and reinforce asymmetric power dimensions between stakeholders. Finally, Teles and Swianiewicz (2018) point out that much can be learned from case studies of inter-municipal collaborations, including best practice recommendations and the potential for collaboration to spill over into other policy areas and redefine territorial boundaries.

Cross border collaborations

Within a European context, the concept of cross-border public service delivery has become a contemporary focus of academic and policy attention (ESPON 2019). ESPON's 2019 study on cross-border public services acknowledges that public service provision is an important element of the European social model and territorial cohesion policy (Ibid). The majority of the 600 cross-border public services identified by ESPON occur mainly along the borders of the Benelux countries, France, Germany and the Nordic Region. Cross-border services are usually between areas with a long tradition of cooperation with high population densities where there is a high demand for specific services. Alternatively, they take place in rural areas with low population density and large distances to major hubs, where it is difficult to maintain public services

(ESPON 2019).

ESPON highlight some of the key features of cross-border public service delivery. Cross-border collaborations usually address a joint problem or development opportunity; include of a range of stakeholders on both sides of the border and are publicly organized and financed (ESPON 2019). Cross-border public services in Europe usually occur in thematic areas including transport, spatial planning, health and social care, education and training, labour market and employment, digital communication, environmental and climate protection, civil protection and disaster management, citizen justice and public security (ESPON 2019).

The main drivers of cross border services are considered to be shared environmental challenges, high public demand for specific services and issues of strong political salience (ESPON 2019). Cross border collaboration can enhance cohesion and social capital between regions by strengthening connections between stakeholders, enhancing cultural integration, and supporting mobility. On a more practical level, collaborations can foster policy change and fill gaps in domestic service provision, as well as reduce costs by creating economies of scale (ESPON 2019). Unaligned legal and administrative frameworks are the main obstacle for collaborations along with incompatible domestic policy agendas, uneven budgets, language barriers and cultural divides. To overcome these challenges legal cross-border frameworks are required often with new cross-border institutions or bodies that can be time intensive to setup (ESPON 2019).

2. Theoretical framework: collaborative governance

Shared societal challenges and rapid technological advancement have created the conditions for development of collaborative frameworks in the delivery of public services that transcend jurisdictions and borders. A rich body of academic literature has highlighted the diversity of collaborative arrangements and the challenges and benefits that comes with them. The central weakness of much of the literature is that the term 'collaborative' is not clearly defined or elaborated upon further than highlighting that interaction take place between public authorities and other public private stakeholders. This section of the report, therefore, examines the concept of collaborative governance in more detail to establish a framework for assessing collaborative governance activities in the Nordic Region. The aim of the section is to clearly define they key features of collaborative governance, identifying the different socio-economic conditions and contexts in which collaboration occurs, the key drivers of collaboration, the different institutional arrangements for collaboration and the main challenges and benefits of collaboration.

The concept of collaborative governance has emerged as an alternative to top-down adversarial and managerial modes of policymaking. In contrast, collaborative governance aims to bring public and private stakeholders together in a policymaking framework based on equality, trust, deliberation and consensus (Ansell & Gash 2007). Emerson et al (2011) define collaborative governance as 'the process and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry a public purpose that could not otherwise be accomplished.' At the heart of this definition is the view that public and private actors need to openly pool and share their own resources to solve common challenges. Emerson et al (2011) note that the concept emphasizes forms of cross-boundary governance and multi-partner governance that is not restricted to government or public authority driven collaborations but can include joined-up hybrid arrangements initiated by a range of different stakeholders, such as, public-private partnerships, private-social partnerships, co-management regimes and community-based initiatives. High levels of stakeholder and civic engagement are central to the concept with wide ranging stakeholder involvement viewed as essential for improving the quality, effectiveness and legitimacy of policy decisions.

The concept of collaborative governance has been most commonly used in the sphere of public administration, but it has also been applied in the fields of planning, conflict management, and environmental governance. Empirical studies have been conducted using the concept within different policy contexts, including child and family service delivery and resource management. Collaborative governance is an amorphous concept without consistent definition, so to add greater clarity there have been several attempts to develop a collaborative governance framework (Ansell & Hash 2007; Emerson et al 2011).

A synthesis of this literature identifies some of the common tenets and features of the approach:

- **Different contexts:** Collaborative governance frameworks emerge and evolve within changing political, legal, socio-economic and environmental contexts. Different contextual factors can impact substantially on collaborative platforms, including time and financial resource availability; legal, administrative and regulatory frameworks; existing power dynamics within communities and across levels of governance; and levels of connectedness and conflict between stakeholders.
- **Key drivers:** The most essential driver of collaborative governance is the emergence of an entrepreneurial leader who has the time, resources and support to create a collaborative framework. The key persons (policy brokers or eldsjälar in Swedish) have excellent social

skills, the capacity to communicate relevant knowledge and are ready to learn from others and inspires trust in other platform members. A sense of collective uncertainty and interdependence around a common problem is also important to create the conditions and incentives for stakeholders with competing interests and values to engage in collaborative actions. Participants are willing to pool and share resources if there is agreement on the need to address urgent common problems, or shared conflict issues.

- **Institutional arrangements:** collaborative governance arrangements tend to be less hierarchical and more fluid in structure and operating procedures. Informal norms will usually be supplemented by more formalized structures the longer the platform is in existence.
- **Stakeholder engagement:** collaborative governance is based on open and inclusive participation in which all relevant and interested stakeholders have equal access. Inclusivity is regarded as both normatively and instrumentally important as stakeholders bring different attitudes, values, interests, ideas and knowledge into the process, which creates the conditions for shared learning and increased understanding. A trusted, shared knowledge allows for informed situation analysis, problem definition, prioritizing and further decision making towards solutions.
- **Deliberation:** Within a collaborative platform, stakeholders will engage in constructive and reasoned communications, based on reciprocal persuasion. Participants will openly share information and views, listen carefully, and discuss different perspectives and challenging questions. Deliberative processes enhance mutual understanding and learning amongst stakeholders and reduce the chances of conflict escalation.
- **Decision-making:** A collaborative platform will produce joint decisions based on consensus including strategic policy documents and recommendations. Decisions made do not reflect an aggregation of different interests but a consensus view on what represents the common good based on deliberation and discussions.
- **Shared motivations:** Regular interactions over time within collaborative platforms establishes greater trust between stakeholders as they begin to understand and respect their different positions and interests. This enhances internal legitimacy and the commitment of stakeholders to longer-term collaborations.
- **Impact:** Collaborative platforms can have physical, environmental, social, economic and political impacts; however, impact can be difficult to measure in the short-term and these impacts are largely determined by the overall aims and objectives of the platform itself. Participants generally need to see returns and impact if they are to continue to participate in the platform.

The academic literature identifies different benefits and challenges of collaborative governance approaches, as outlined in table 3.

The Nordic Region is a laboratory for collaborative governance and Nordic countries are renowned for high levels of cooperation and interaction between stakeholders both within and between different regions and across borders. After a short synthesis of previous research on collaboration in public service delivery in the Nordic Region (section 3), the report continues with an empirical analysis of case study examples of collaborations in public service delivery to assess whether these initiatives meet the criteria of collaborative governance concept outlined above. This empirical analysis is proceeded by an overview of the methodological approach adopted for our analysis (section 4).

| Benefit	Description	Challenge	Description
Stakeholder legitimacy	Open and inclusive participation creates a critical mass of stakeholders that can increase access and influence over policymakers.	**Power asymmetries**	Certain members of the platform are more dominant and influential than others due to greater time, resources and knowledge.
Knowledge legitimacy	Stakeholders bring wide ranging knowledge and expertise to discussions that has an instrumental effect on the quality and effectiveness of decisions.	**Lack of transparency**	Networks are not usually subject to democratic controls and often have opaque decision-making procedures.
Increased resources	Stakeholders are willing to pool and share time, resources and knowledge in the development and implementation of policies.	**Low accountability**	Stakeholders not elected, therefore, lack direct accountability.
Conflict management	Potential conflicts between stakeholders are resolved through discussion and deliberation, which strengthens stakeholder relationships through enhanced trust and understanding.	**Technocratic and elitist**	Technical and specialist knowledge is required to participate in deliberations, which means that certain groups are excluded.
Enhanced social capital	Collaboration facilitates the development of shared meanings, values and common definitions among stakeholders within a policy area.	**Aggregation of interests**	Decisions reflect an aggregation of different interests, rather than a genuine policy consensus.
Improved quality and effectives of decisions	Decisions based on consensus improve the quality and effectiveness of policies, as they reflect the common good and are accepted by all stakeholders.	**Lowest common denominator policies**	The policy that is acceptable to all group members is not necessarily the best policy for solving a challenge or fostering new opportunities.

Table 3. Benefits and challenges of collaborative governance approaches.

3. Collaboration in public service delivery in the Nordic region

Collaboration in the delivery of public services is a common phenomenon in the Nordic Region (Goldsmith & Page 2010). During an extended period of low economic growth and financial austerity, collaborative initiatives have become even more prevalent as local authorities attempt to navigate and manage problems of scale (Teles 2016). Indeed, as most public services transcend jurisdictional boundaries, a lack of financial support and administrative capacity has encouraged Nordic regional authorities to pool resources in their delivery to help achieve economies of scale (Askim et al. 2016).

In their comprehensive study of interregional collaboration in the Nordic Region, Eythorsson et al (2018) note that there is strong diversification in the nature and type of collective action occurring across Nordic countries, identifying large degrees of variation in terms of the scope and institutionalization of cooperation within different policy fields. They highlight the decentralized nature of Nordic welfare states as an important contextual driver behind collaboration, as many local authorities in the Nordic Region are primary responsible for delivering key public services: 'nordic countries have traditionally been characterized by extensive functional decentralization, as well as a strong emphasis on local autonomy.' (Eythorsson et al 2018). The degree of multi-level governance and fragmentation of local government systems are viewed as key factors determining the scale and scope of collaborative efforts in public service delivery in the Nordic region (Blom-Hansen et al 2016).

In recent years, the Nordic Region has seen some comprehensive regional administrative and functional reforms driven by increasing pressure on the welfare system due to an ageing society, financial cuts and wider functional labour markets (Nordregio 2015). Denmark, Norway and Greenland have dramatically reduced the number of municipalities; whereas, Iceland, Faroe Islands and Finland has witnessed several municipal mergers (Ibid). Swedish reforms in the 1970s already established larger local government units than other Nordic countries (Lidström 2011). The regions and municipalities across the Nordic Region in 2020 are outlined in map 2.
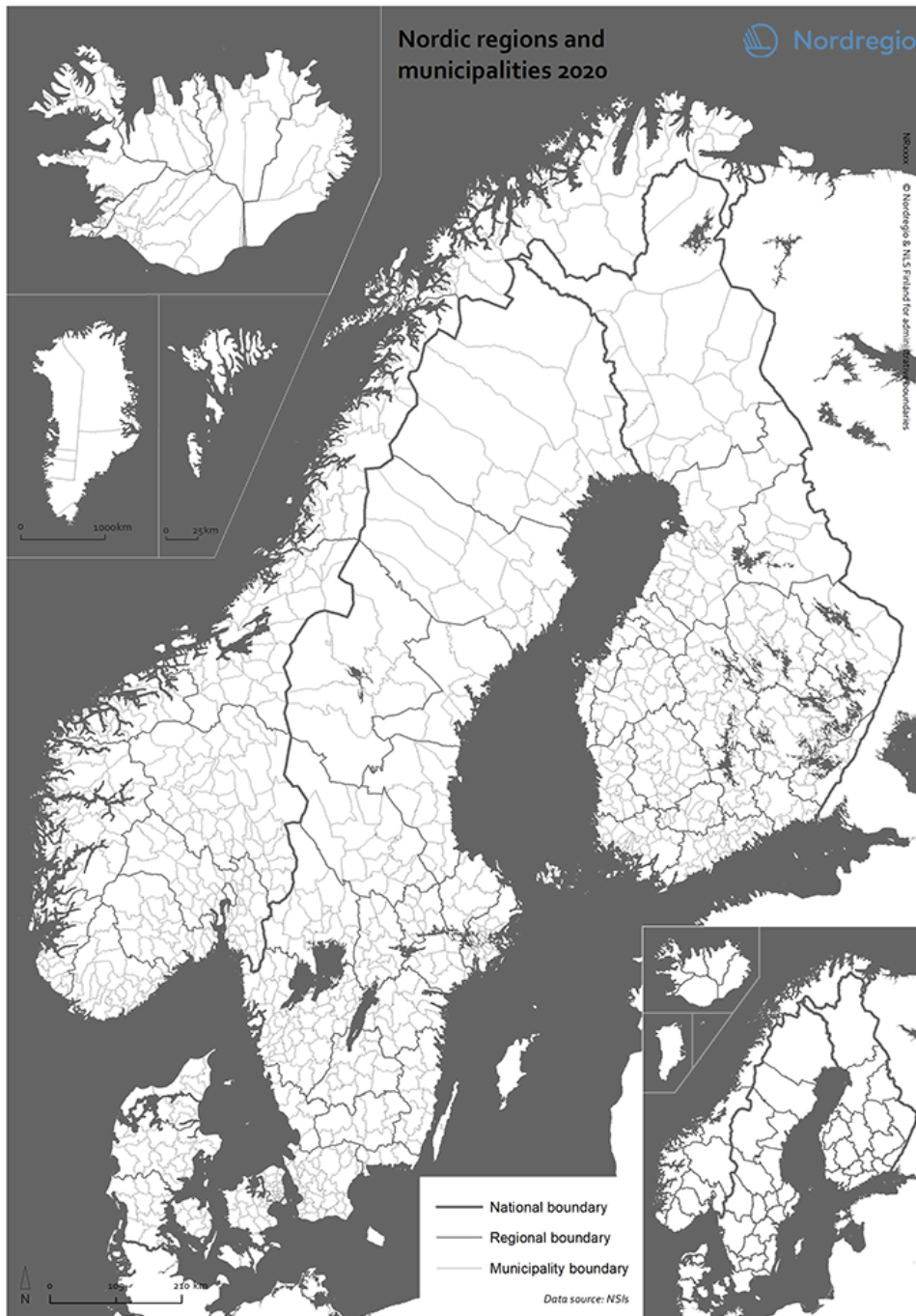
Map 2. Regions and Municipalities in the Nordic Region in 2020.
Cartographer: Julien Grunfelder, Nordregio.

The positive rationale advanced for increasing the size of regional units and encouraging municipal mergers is that they will, over the long term, increase the quality and efficiency of public service deliveries; however, these reforms have also been criticized on democratic grounds that larger municipal units can take decision-making and public service provisions further away from citizens (Nordregio 2015). Eythorsson et al (2018) hypothesize that Nordic regional reforms might reduce the need for collaborative action in the delivery of public services as large local government units have greater administrative capacity and resources. They continue that national laws and regulations, outlining legal responsibilities for the delivery of different public

services, could also place legal restrictions on the development of collaborative initiatives (Ibid).

The nature and type of collaborations occurring within the Nordic region differs considerably from country to country depending on the governance structures in place and division legal responsibilities regarding tasks and functions. In Finland, 'inter-municipal cooperation has compensated for a lack of local second-tier local government', where the need for joint municipal authorities has increased to secure financial and professional capacity, particularly in the field of health care provision (Eythorsson et al 2018) The 1995 Finnish Local Government Act encourages collaboration noting 'municipalities shall perform those functions prescribed to them by law alone or in cooperation with other municipalities.' As a result, there are few legal restrictions to collaboration in Finland with cooperative ventures formally agreed in a contract between parties and all parties represented equally on governance boards (Ibid).

In Iceland, a lack of capacity and resources at municipal level has been the main driver of collaboration in the delivery of public services in the areas including primary school, social services and health care provision. The 1986 Local Government Act outlines that collaboration is voluntary and can be administered informally through a board of representatives or formalized within a contract between parties (Eythorsson et al 2018). In Norway, the 1991 Local Government Act allows for voluntary collaborations to solve joint problems and joint service provision, including administrative support functions, auditing, civil protection and nature management. Very few Norwegian local governments collaborate in the delivery of healthcare and education which are central government tasks. What is referred to as a municipal hosting arrangement allows Norwegian municipalities to transfer tasks to other municipalities with decisions made through a joint board of representatives (Eythorsson et al 2018). While collaborations are generally controlled by local government officials, they have received criticism from the Nordic public that joint ventures can lead to inefficient decision-making, a lack of accountability and confusion about who to contact (Johannesson et al 2016).

4. Methodology

A case study methodology was applied in this research as it allows for an in depth descriptive and exploratory analysis of complex phenomena within their own contexts (Stake 1995; Yin 2003). Baxter and Jack (2008) note that case studies are a useful methodology for developing theory, evaluating programs, and developing interventions. They continue that case studies can use multiple data sources which 'ensures that the issue is not explored through one lens, but rather a variety of lenses which allows for multiple facets of the phenomenon to be revealed and understood.' (Baxter & Jack 2008) For this reason, a case study methodology was the most effective research approach available for enhancing our understanding of collaborative governance initiatives in the delivery of public services within the Nordic Region.

The collaborative governance concept provided an analytical framework around which to focus the case study analysis. Each individual case study looked into the following core questions related to some of the central features of the collaborative governance concept, as outlined in Table 4 below.

Collaborative governance: central tenets	Key questions
Different contexts	What socio-economic and political factors enable and challenge collaboration?
Key drivers	What internal and external factors drive collaboration? Which stakeholders are essential in collaborative process?
Institutional arrangements	Is collaboration ad hoc and permanent? Are there formal and informal institutional structures in place?
Stakeholder participation	Is involvement inclusive and open? Are all interests represented? Are some stakeholders underrepresented/overrepresented?
Deliberation	What is the nature of debate and discussion between stakeholders?
Decision-making	Do policy decisions reflect a consensus? Do stakeholders support policy decisions?
Shared motivation	Does collaboration enhance trust and equality between stakeholders?
Impact	Does collaboration improve quality? Does collaboration improve efficiency and effectiveness? Does collaboration improve legitimacy of decisions?

Table 4. Collaborative governance – key questions.

The case study analysis was carried out using a mixed qualitative and quantitative research methods approach: desk-based research; qualitative interviews and GIS data analysis and mapping. These approaches are outlined in more detail below:

Desk research: An initial desk-based research analysis was conducted examining key academic research papers and policy documents concerned with the topics of inter-municipal, inter-regional and cross-border collaboration in the delivery of public services. The literature and policy

context, including a short overview over public administration systems in the Nordic countries, focusing on identifying different approaches to collaboration and the main benefits and challenges related to these models.

Qualitative interviews: Semi-structured interviews were conducted with key actors from the selected case study examples of collaborative public service delivery, including, public authorities, industries, businesses and Nordic Municipal Associations. The interviews were designed to gauge the perceptions of stakeholders actively involved in collaborative public service delivery. The interviews were primarily conducted via telephone and skype / Teams. They focused on establishing the main motivation and drivers behind the joint initiatives; key enablers and factors that supported success and helped overcoming potential challenges for the implementation; the main achievements of the collaboration; the potential for upscaling and replicating good practice examples in other contexts and recommendations for the future direction on collaborations.

Quantitative data and mapping: Quantitative data was used to develop maps which highlighted the distances to services and general interest across in the Nordic region.

Interviewees and members of the Nordic Thematic Working Group for Sustainable Rural Development provided valuable comments on case study and report drafts.[1] The following chapters, our 6 case studies, invite the reader to travel to different parts of the Nordic Region and to learn from different types of collaboration in public service delivery.

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1. Members of the Thematic Group also helped with the selection of the case studies, since they all possess the necessary local knowledge to do so.

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Nykøbing, Denmark. Photo: Ingrid Riis.

5. Denmark: preparatory basic education and training in Denmark

By Mari Wøien Meijer, Nordregio

5.1. Introduction: Lolland and Falster (Region Zealand)

Lolland and Falster are two islands to the south-east of Denmark, separated only by the small strait of Guldborgsund. These islands are home to two municipalities, Lolland and Guldborgsund. Guldborgsund municipality covers the entire island of Falster and a good part of the Lolland island. Guldborgsund municipality has a population of 61,722 inhabitants (as per 1 January 2020). Lolland municipality is somewhat smaller, with its population of 41,105 (as per 1 January 2020). The Lolland and Falster islands fall under the administration of Region Zealand.

Lolland-Falster is the one of the big tourist destinations in Eastern Denmark, apart from the Capital Region, and according to Business Lolland-Falster there is considerable opportunity for growth in the tourism sector. It has a 600 km coastline and is home to some of Denmark's best beaches (Business Lolland Falster, 2020b). Lolland-Falster also has a globally competitive agribusiness industry; a growing cleantech sector, with the world's first offshore wind power farm; a blossoming transport and logistics node, with great potential arising from the Fehmarn Belt Fixed Link, bringing with it businesses to the area; industrial production, particularly within high-end products; and a large building and construction sector employing approximately 13% of the population in Lolland-Falster (Business Lolland-Falster, 2020a). Industry 4.0 is carving out space for its own development too, as digitalisation and automation become the new normal. Lolland-Falster are islands in transition. However, Lolland and Guldborgsund also have some of the lowest levels of education in Denmark. According to Statistics Denmark, recent figures show that 45% of young people in Lolland and 32% in Guldborgsund do not continue with their education after the final year of secondary school (Region Sjælland, 2020), although this scenario is improving significantly for Guldborgsund. In the period from 2013 to 2019, Guldborgsund's share of 25-year-olds with a longer education (10th grade or above) showed a positive increase, rising from 61% to 68%. Lolland municipality showed a modest increase from 54% to 55% during the same time period (Region Sjælland, 2020). The education analysis for 2020 shows that the majority of people in Region Zealand are either unskilled (38%), or have vocational training (36%), which is comparable to the levels in the regions of North Jutland and South Denmark (Region Sjælland, 2020, p. 8). Only 6% of the population has a qualification that corresponds to a master's degree or a Ph.D. This is considerably lower than the national average of 12% (Region Sjælland, 2020). However, the lower percentage of people with a higher

education in Lolland-Falster, or Region Zealand, may not be the result of fewer 25-year-olds from the area going on to higher education. Rather, it seems that internal migration between regions, with young people migrating to bigger university cities, may play a significant role (Region Sjælland, 2020). In general, it should be pointed out that the statistics presented in the analysis prepared by Region Zealand are based on a person's address after their final year of compulsory education (year 9), and the highest qualification they obtain within ten years. In this case, the time series is 2007-2017 (Region Sjælland, 2020, p. 16).
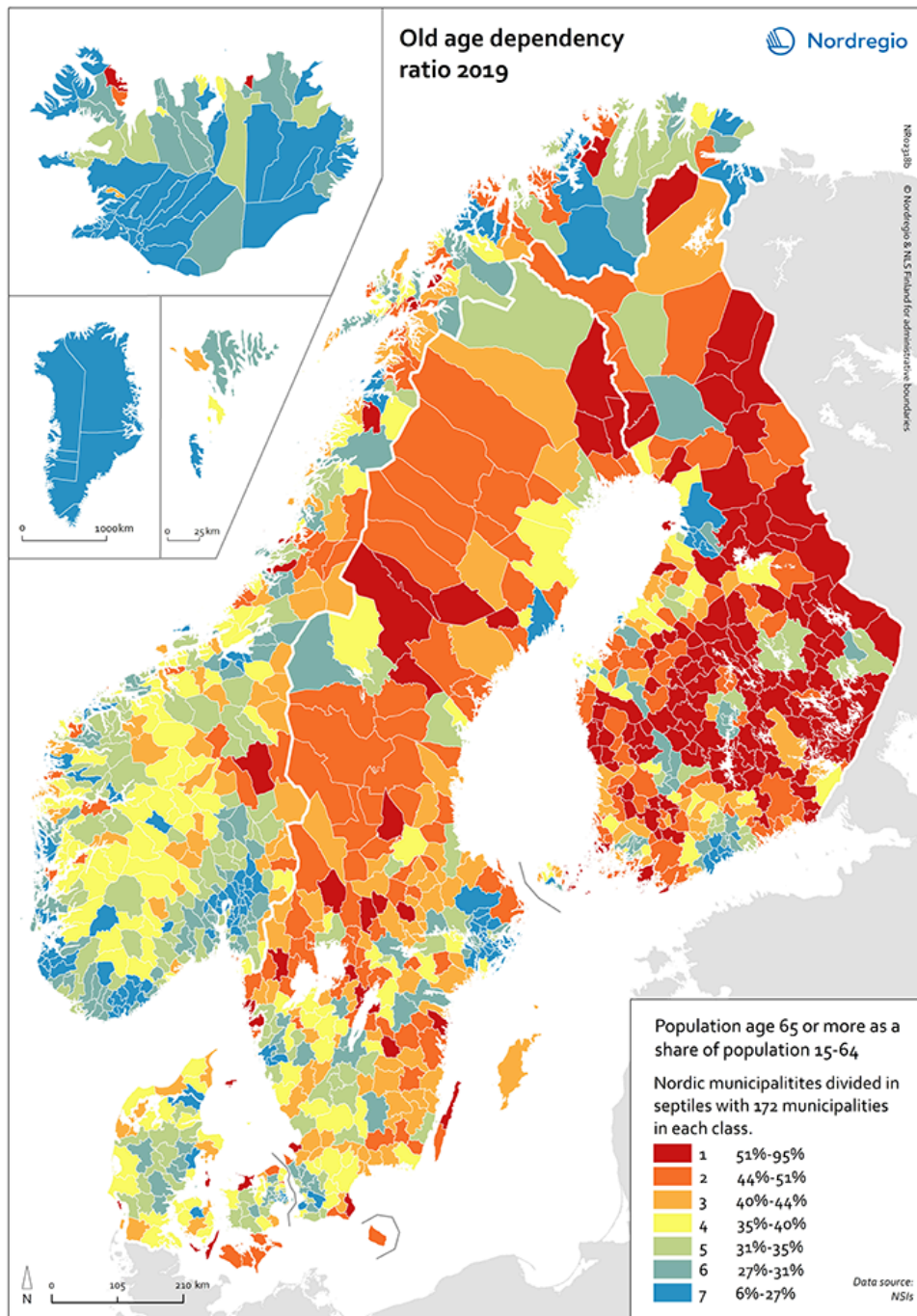
Migration patterns matter, especially as young people are leaving Lolland and Guldborgsund to pursue higher education elsewhere (Interview 3). The old-age dependency ratio in Lolland-Falster is worse in Lolland than in Guldborgsund, where the population aged 65+, as a proportion of the working age population, is between 40% and 51% (Map 3.). This corresponds to Sánchez-Gassen & Heleniak's (2019) study of the old-age dependency ratio across the Nordic Region, which indicates that the ratio is particularly pronounced in rural regions as a whole. This trend could be counteracted by focusing on finding jobs for the existing population of young people not in education, employment, or training (NEETs) joining the labour market. The percentage of young people aged 16 to 29 in Region Zealand, to whom youth education policies are primarily directed, is approximately 15% of the total population in the region.[2] The new basic preparatory and training (FGU) system has therefore been welcomed as a new tool for trying to counterbalance negative trends, according to one interviewee (Interview 5).

Student working on his task at school.
Photo: FGU Lolland-Falster.

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2.   Region Zealand: population 837,097 in 2019.

Old age dependency ratio 2019

Nordregio

Population age 65 or more as a share of population 15-64

Nordic municipalitites divided in septiles with 172 municipalities in each class.

	1	51%-95%
	2	44%-51%
	3	40%-44%
	4	35%-40%
	5	31%-35%
	6	27%-31%
	7	6%-27%

Data source: NSIs

Map 3. Old age dependency ratio 2019.
Cartographer: Oskar Penje, Nordregio.

On a national level, it is clear that there is a correlation between the educational level attained by parents and the likelihood of their children's education reaching similar or better levels, despite the generally positive increase in young people completing higher education or obtaining diplomas after upper-secondary education. In Denmark, only 20% of 30-year-olds with parents who only completed secondary school, stayed in school for longer. For children with parents completing to the 10th grade, the proportion of those attaining upper secondary education or above was 78% (Danmarks Statistik, 2019). Indeed, according to Region Zealand, 28% of people in Lolland and 21% of citizens in Guldborgsund are on some form of social benefits[3] as opposed to 17% in the region as a whole and 15% nationally (Region Sjælland, 2020). Approximately three in every four people aged 16 to 64 (73%) are employed in the region as a whole.

According to research conducted by Region Zealand, the intra-regional differences in employment in each region are caused by a complex range of factors. These include people's levels of education, migration patterns, housing prices and the local labour markets (Region Sjælland, 2020, p. 7). In general, municipalities further from the capital region of Copenhagen have lower levels of employment and more people living on social benefits (Region Sjælland, 2020). In this context, it is important to remember that skills and competences are not only necessary for personal development and job opportunities, but also for the regeneration of jobs and the development of a dynamic labour market in the long run (Lundgren, et al., 2020). Encouraging and enabling young people to continue with a full youth education is therefore important for Lolland and Guldborgsund municipalities. Up-skilling the population is important both for enabling the future labour force to meet global trends such as digitalisation and for preventing out-migration (Lundgren, et al., 2020).

Baking lecture at school.
Photo: FGU Lolland-Falster.

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3. The social benefits referred to include parental leave, early retirement pay, support for those outside the labour market, supported employment, up-skilling of the existing workforce, and guidance.

5.2. The Danish education system

The general level of education has been increasing steadily over the past few years, and the proportion of the population with low levels of education and training is declining, according to the Danish Research institute for Economic Analysis and Modelling (DREAM). This trend is expected to continue, on account of the gradual replacement of older people in the labour market with younger people entering the workforce. The DREAM group also points out that higher education is slowly overtaking vocational education as the norm, to the detriment of vocational studies (DREAM, 2019).
Upper secondary education in Denmark is organised around two main educational trajectories, forming a 'dual system' (Lundgren, et al., 2020).

General upper secondary education programmes prepare students for a more academically-oriented higher education, while vocational upper secondary education programmes (VET) prepare students for higher-level vocational education and the labour market. These VET courses are mainly provided by technical vocational colleges (erhvervsskoler) and business colleges (handelsskoler), but they are also available in schools focusing on social and healthcare-related studies (social- og sundhedsskoler). There is also an additional year following secondary school, which focuses on preparing students for vocational studies (10th grade, edu10. See Figure 1) (Hermann, et al., 2017). According to Lundgren et al. (2020), approximately 20% of Danish young people participate in VET-studies. VET also combines theoretical and practical studies, with around 20% of the content directed towards theoretical education, and the remaining 80% of the time being spent on practical traineeships in businesses and enterprises (Lundgren, et al., 2020). Due to this close collaboration with companies and organisations, VET education also provides a monthly salary to students, coming from the businesses and enterprises concerned.

However, accessing youth educational opportunities, such as general upper secondary or vocational upper secondary education, depends upon achieving certain grades when leaving secondary school. For those who do not obtain these grades, a multitude of alternative training opportunities is available. However, these have generally been criticised as being too scattered and hard to navigate (Hermann, et al., 2017; Interviews 1, 2, 7). In 2017, an Expert Group appointed by the Danish Government launched a study looking at alternative ways of systematising the options available to those that with least access to education, training and jobs, resulting in the topic under investigation in this case study: the preparatory basic education and training programme (forberedende grunduddannelse).

Students in the lecture.
Photo: FGU Lolland Falster.

5.3. Preparatory basic education and training

(den forberedende grunduddannelse)

In September 2018, the Danish Ministry of Children and Education launched the programme forberedende grunduddannelse (FGU) – the preparatory basic education and training scheme as a preparatory programme for further education. This training alternative sits between the Danish 'folkeskole' (primary and lower-secondary school) and 'gymnasium' (upper secondary school), where year nine marks the end of compulsory education (Ministry of Children and Education, 2020). The option of preparatory basic education and training (henceforth FGU) is for those who after nine years of compulsory education, do not have the competences to move onto upper secondary education (See Figure 1. for an overview of the Danish education system). The lack of qualifying grades may not only be due to the lack competences and skills developed through basic education, but may also be contingent on social context, i.e. personal, family or health-related factors, or simply students who need a second chance to develop the requisite social skills and training-related competencies.
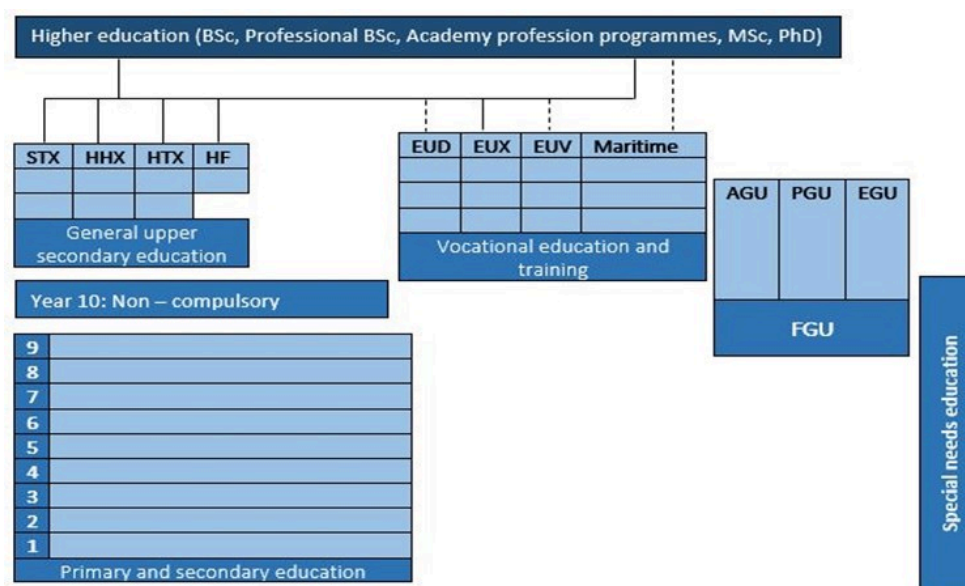

Figure 1. The Danish education system. Author's adapted presentation of the general education system.
Source: Ministry of Children and Education, 2020.

FGU is constructed to help prepare students for further education, whether vocational or academic. FGU offers three specific training programmes (See Box 1.). It also covers some of the responsibilities of the adult education programme (VUC) with its age cap at 25 and has absorbed the formerly independent production schools (See page X). The new training programmes offer teaching and training tailored to the individual's level, and offers a more comprehensive and basic training than, for example, the more targeted and higher level vocational training that can be obtained through 10th grade (edu10) (Hermann, et al., 2017). FGU meets the student on their own level, and allows for adjustments as they progress, while simultaneously providing a safe space, stability, and a sense of individual belonging (Ministry of Education - The agency for teaching and quality, 2019).

The political goal underlying the introduction of FGU is to contribute towards ensuring that all young people have a youth education, or are in training or in a job, by the time they are 25 years

old (Ministry of Education - The agency for teaching and quality, 2019). The introduction of the preparatory basic education and training programme is the Danish government's response to the Expert Group's recommendations in a report from 2017 'Better ways to youth education' (Bedre veje til en ungdomsuddannelse). This group was appointed to evaluate and propose a better youth education system (Ministry of Education - Agency for education and quality, 2018; Hermann, et al., 2017).

Box 1. FGU training

PGU – produktionsuddannelse (basic production training) is for those who want to combine theory and practical work in a school's workshop. There is a possibility of spending up to four weeks per semester in a host business.

AGU – almen grunduddannelse (basic general training): Courses such as Danish, mathematics, English, natural sciences and PASE. AGU prepares the pupil for vocational or upper secondary education.

EGU – erhvervsgrunnuddannelse (basic vocational training): One-third of the time is spent with general basic theoretical education, and two-thirds is spent in businesses through traineeships. The students receive a trainee wage.

Afsøgingsforløb (enquiry process) – is the process through which the student can participate in an evaluation to determine whether they are fit for FGU, or not.

Basis – basic training is for those who are either waiting for acceptance in one of the FGU courses, wanting to improve grades for accessing education programmes, or for those who are unsure of what to do next. The pupil starts off with an evaluation of their skills in Danish and in mathematics.

The report made three recommendations to the government. These cover the role played by municipalities in providing guidance to young people, systematising preparatory courses, and setting a policy goal of education, training, or jobs for all young people. The report showed how there is no need to reduce the amount of educational opportunities for the weakest students, but that the opportunities need to be both broader and more flexible, with real opportunities to secure work afterwards. The report also showed how the system pre-dating FGU has not been supporting a comprehensive approach to education (Hermann, et al., 2017). FGU is a state-owned, independently run institution under the auspices of the Ministry of Children and Education. It is managed by an independent board consisting of the relevant municipalities, trade unions and employee organisations, together with vocational schools, and both staff and student representatives from the FGU institution. The school is financed by the state, but the municipalities pay approximately two-thirds of the cost per pupil.   FGU has a broad target group (Interview 7). Although it is a state-owned, independent institution, the composition of the FGU board provides a new way for local actors to be involved in steering training for skills development. The balance of representation across stakeholders was initially a topic of debate because municipal representatives wanted a greater say in the development of the training (Interview 2).

5.4. Empirical material

Municipalities, youth guidance and FGU

FGU is an additional tool for municipalities to anchor and develop their youth guidance obligations. FGU is helping to streamline youth training, by gathering and organising training opportunities under one administration. It also provides greater space for municipalities to connect the dots between their youth guidance mandate and the available education opportunities, which often means independent schools funded by the state. FGU institutions are usually organised by several municipalities working together, and are an additional tool for the municipalities to achieve national policy goals for NEETs, "(...) all young people under 25 who are not in youth education or have completed a youth education, have a right to an educational plan" (Ministry of Education - The agency for teaching and quality, 2019, p. 4).

The collaborative aspect is a stated objective coming from the national level, although the shape and form this collaboration takes depends upon the municipalities in question. According to one interview at KL - Local Government Denmark, there is no single way of organising FGU. With a strong tradition of municipal self-governance, the different ways of approaching and organising FGU mirror the modus operandi of the respective municipalities – including the collaboration between them (Interview 7). Prior to FGU, there was little inter-municipal collaboration regarding services that fall under youth engagement and guidance. "We see that [FGU] is a catalyst for inter-municipal collaboration. The focus on youth guidance – ungeindsatsen – is not a catalyst in the same way, though it encourages intra-municipal collaboration," our interviewee observed (Interview 7).

As can be discerned from this interviewee's statement, it is indeed the youth guidance focus that is the main objective and remit of the municipality. Youth guidance internally, in the municipality, has recently undergone restructuring, resulting in collaboration between municipal sectors which would otherwise have been siloed. In their responsibility for young people, municipalities were required to undergo a change process to create a structure that links together the legal requirements related to social service provision, employment, and other municipal efforts for young people under the age of 25 years. "This is a positive development, but it is also difficult," the interviewee said, adding that "there are no excuses not to do this. [But] the 'right way to do it' may differ between municipalities. It depends on the local context and priorities" (Interview 7). The interviewee also pointed out the importance of this for young people in the municipalities: "[We know that] the worst experience they have is the 'municipality lady' – when they meet a new person every time. This is alienating, and it makes it a lot harder. Success comes when young people feel like they are being seen, and that there is a familiar person that help them, so that they do not have to repeat their stories over and over again each time" (Interview 7).

5.5. Motivations and main drivers: Lolland-Guldborgsund FGU

Municipalities have a mandate to guide and help young people who are not in work, education or training, or who drop out of educational. Both Guldborgsund and Lolland municipalities have educational guidance centres for young people (Ungdommens Uddannelsesvejledning [UU]) (Lolland Kommune, n.d. c; Guldborgsund Kommune, n.d. a). The guidance counsellor helps each young person to identify what requirements need to be fulfilled in order to qualify for youth education, and they may also help in writing applications. Counsellors follow students and pupils until they are 25 years old, and will personally get in touch with those who drop out (Guldborgsund Kommune, n.d. a). According to Guldborgsund's youth guidance website, the UU-unit is in close contact with all youth education institutions in the municipalities. In this way, the UU-unit is always alerted when a student drops out of school (Guldborgsund Kommune, n.d. a). According to the interviewees, FGU is a highly welcome new tool overall (Interviews 2, 3, 4, 5). Integrating and tailoring expectations regarding the needs and experiences of municipal youth

guidance services with a streamlined youth education is an important move (Interview 2). It can help ensure a more concerted, comprehensive approach to youth engagement in general. It also gathered otherwise complicated and big sectoral ambitions under one umbrella (Interview 7).

FGU institutions should also ensure that they are mirroring the needs of the local labour market and its accompanying opportunities (Ministry of Education - Agency for education and quality, 2018, p. 10). As elsewhere in the Nordic Region, and indeed globally, the labour market is changing (Norlén & Randall, 2020). Megatrends such as climate change, digitalisation, and automation influence job opportunities. Since the type of job available is changing and the need for different types of skilled labour is evident, finding ways of including young people in this process, and making sure vulnerable groups do not fall behind, remains important. "It is clear that young people today will do something other than what their parents did," one of our interviewees explained (Interview 3). It will not suffice simply to envision the future based on what is known of the past, if all young people are to be part of the new, emerging labour market.

By using FGU, municipalities are able to address those outside training, education, and work in a more concerted manner. They can also use FGU as an opportunity to prepare young people to be part of the unskilled labour force. This, in turn, may enable the young people concerned to take part in youth education later on, while also developing the skills needed to acquire alternative qualifications in the workplace, such as professional certification (Hermann, et al., 2017, p. 5). In this way, FGU is a strategic tool for the municipalities to combine social measures for NEETs with local and regional skills governance, as well as with job opportunities, even if FGU is not an educational end in and by itself.

Cross-sectoral collaboration for youth training and skills governance

The FGU board in Lolland and Falster comprises labour market actors, municipal actors, and educational actors, as required by the national guidelines for FGU board composition (See Figure 2.). Although the board in itself is not an active participant in the daily running of FGU, it still plays an important role in strategic decision-making and the direction of FGU Lolland-Falster. Additionally, it has an important function in directing the curriculum to correspond to local labour market needs.
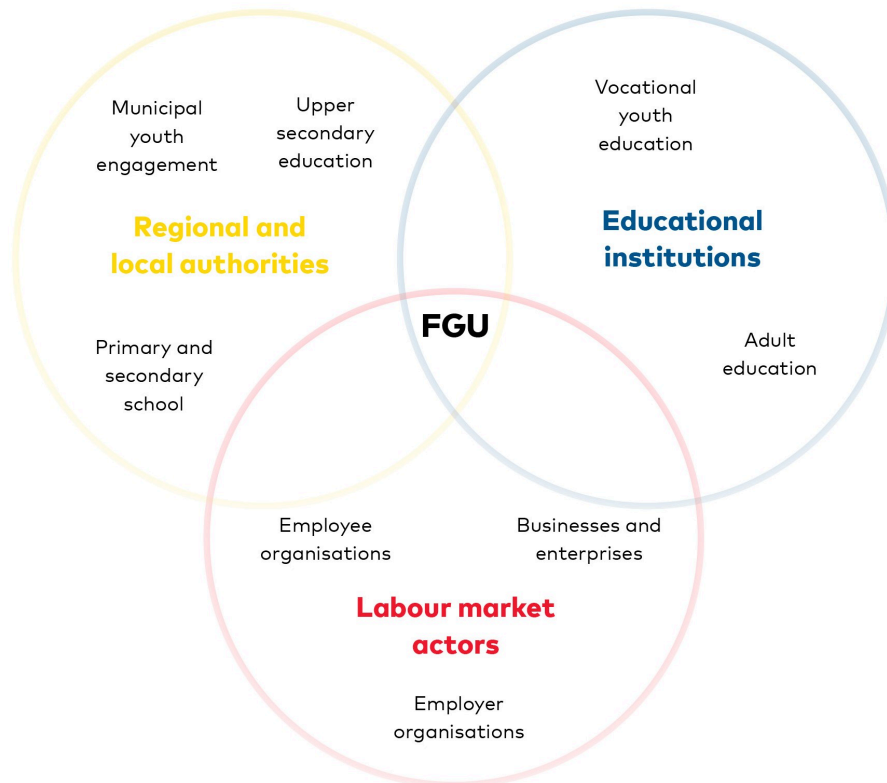
Figure 2. Actors and stakeholders involved in skills governance in FGU Lolland-Falster. Source: Author's adaptation of figures in Lundgren, et al. (2020).

Since the school is an institution shared between two municipalities, the municipal representatives decided to involve an external party to chair the board. The municipalities approached Mr Niels Henriksen, a long-term and dedicated champion of young people and education in Lolland – Falster. He would subsequently take the lead on building an effective collaboration between the two municipalities, setting up the board and assisting with the implementation of FGU in its initial phases. Due to his personal engagement and dedication to the cause, he asked if he would be able to continue to lead the work of the board under the same mandate set for him when he was first appointed to chair it, despite his subsequent retirement. Selecting an external party to chair the board was a strategically clever decision, as Mr Henriksen has no work-related bias towards either Lolland or Guldborgsund municipalities (Interview 2; Interview 3).

The composition of the board was also strategic, in that the municipalities and the educational institutions are not in the majority but are balanced out by other important actors within the skills governance ecosystem – such as employee and employer organisations. This means that it is easier not to fall back into the 'old ways' of designing educational streams, which generally tend to be more focused on the theoretical aspects of education. The board is therefore careful to combine theoretical necessities with the skills and competences needed in the labour market. As Mr Henriksen observes: "I myself am a former teacher and pedagogue, and the municipalities have their own agendas, so if we don't watch out [FGU] can easily become too narrow. It is [therefore] important that [labour market actors] are part of the board" (Interview 2).

The FGU school is also organised in a way that encourages the municipalities to think strategically about their future labour market needs, and can help to encourage students by enabling them to participate in traineeships organised either by the municipalities themselves, or through partner businesses. According to our interviewees, supporting young people through FGU training is therefore seen as having a double effect. On the one hand it helps realise the

potential and skills of individual young people in the two municipalities. On the other hand, it also has societal benefits. "It is a very concrete way to ensure jobs, settlement and opportunities, and it reduces unemployment in the long term," one of our interviewees stated (Interview 5). In other words, it has an overall positive effect for the local community. Being able to work more strategically, with company traineeships based on both local labour market needs and municipal initiatives, for example, amounts to a joint learning opportunity for all parties involved. Skills governance, skills mismatch, skills anticipation, and skills development are in this sense joined in way that also supports people in connecting to the labour market in the long run, starting with FGU as a first step in the right direction.

Teaching process.
Photo: FGU Lolland-Falster.

A new system – less bureaucracy and tailoring to the needs of the young

According to the municipal representative from Lolland, Vibeke Grave, the municipalities have been concentrating on ensuring that the focus on young people is sufficient, and that they all get a second chance. FGU is a welcome remedy to a problem that has been getting persistently worse over the past few years. Ms Grave continues to point out that prior systems and ways of attempting to encourage young people to participate actively in either education, training or the labour market have failed to a large extent. She says that it is necessary to think anew, rather than referring to existing systems. "If we think in the same way as we always have, then we won't solve any problems!" (Interview 3). Moreover, as the Expert Group pointed out, the old system was cumbersome and difficult to navigate:

"We have offered the most complex system to those young people who have the biggest issues and the most difficult challenges. It is the Expert Group's understanding and perception that, even so, the teachers, professionals, guidance counsellors, mentors and officers have in most cases contributed more than could be expected. But they have done this despite the system, rather than because of the system."

(Hermann, et al., 2017, p. 4).

A significant 'de-bureaucratisation' of the training and educational system was overdue and merging preparatory training opportunities into one is perceived as the right direction and a wise move (Interview 1). Access to vocational studies is very high in Lolland-Falster, according to one interviewee, and the municipal goal is to have approximately a quarter of all students attending vocational training (Interview 4). Lolland-Falster has strong vocational professional traditions, and this is reflected in the local businesses (Interview 4).

Prior to FGU, the production schools were the main alternative to strengthen personal development and improve chances of entering the labour market from a vocational starting point. The production schools are independent institutions approved by the local authority, which help students "obtain qualifications that can enable them to complete an education on upper secondary level leading up to a professional qualification" (Ministry of Children and Education, 2020). These schools are centred on an activity-based curriculum in workshops with a professional standard, combining theory and practice "with a view to genuine production and sales" (Ministry of Children and Education, 2020). According to our interviewees, the production schools were suffering from a poor reputation, despite their high-quality education and close connections to the local labour market (Interview 1; Interview 2). However, this is a Nordic-wide phenomenon, according to Lundgren et al. (2020).

FGU Lolland-Falster gathers together a range of preparatory training programmes across academic, vocational, and production-based courses in Maribo (Lolland), Nakskov (Lolland) and Nykøbing Falster (Guldborgsund). The production schools in Lolland and Guldborgsund and the somewhat more theoretically inclined adult education (VUC) in Storstrøm were merged with the introduction of FGU (Interview 6) (Lolland Kommune, n.d. a). FGU differs fundamentally from VUC and other youth education programmes, not only in its focus and role, but also in the way in which the municipalities are engaged. VUC and youth education programmes are state-owned and state-financed institutions. An individual can either sign up themselves or go through municipal youth guidance portals to help identify the right course. For FGU, it is the municipalities' prerogative to allow or prevent prospective students signing up for FGU, because the municipalities finance the students attending the programme. "There are some considerations that the municipalities need to take into account regarding the number of students and the relative costs" (Interview 2).

The national targets – 90% of all 25-year-olds having a youth education or being in training, the remaining 10% in jobs and the reduction of NEETs by half – are ambitious. However, they are directed and framed in a way that is attainable (Interview 3). According to one interviewee, there is significant value in redirecting the focus away from attaining education to highlighting the positive effects of having a job that may eventually lead to certification or a diploma (Interview 3). Prior to FGU, basic training for young adults was very theoretically inclined in adult education training, but FGU is now providing more practical training for them, too.

So far, the FGU way of organising has demonstrated that it not only draws the 'weakest' students to its classrooms, but also those who need some extra time and support before continuing school. One of our interviewees explained:

"The majority of the students come straight from secondary school, and otherwise are 19- and 20-year-olds. You can attend FGU until you are 25, but there aren't that many 23- and 24-year-olds (…). We thought initially that those who chose to attend the PGU programme would be the ones from production schools, but it turns out that 30-35% of them come from other VUC [adult educational] vocational studies. And that is positive, because there were a lot of students at VUC who shouldn't have been there. The distribution of students is different to what we initially thought, and it mirrors the student's needs better. More academically - inclined educations may have greater prestige among young people, but it isn't necessarily what they need."

(Interview 2)

This corresponds to the fundamental idea, in both Scandinavian and Nordic countries, that there are, and should be, opportunities for all. The interviewee adds:

"(…) In Denmark this mentality has resulted in 20 to 25 different measures to improve the prospects for teenagers and young adults who do not have the necessary levels of primary and

secondary education needed to enter the labour market. The system was very opaque for them. This should be seen in connection to the social system as well, which has good intentions, but is also very difficult complicated. We have not been able to combine these [until now] (...)."

He goes on to point out that those involved were a little worried that they were not going to get the number of students they needed for the school, but the actual number exceeded their expectations. "We have managed to get those we needed, and that is a success. We prepare them, and they go onto other things, particularly vocational studies," Mr Henriksen says. On this note, the interviewee from KL also emphasises that "the young people who are in [FGU] are the ones who should be there. FGU should never be a goal in and by itself. It is only one step on the road. All actors, including the FGU institutions and other parties in the educational system, need to remember that" (Interview 7).

Factory in Nykøbing, Denmark.
Photo: Ingrid Riis.

5.6. Key enablers and factors supporting success

Small ecosystem, networking, and trust

The Lolland-Falster area is a little different from its Danish counterparts, with a relatively small ecosystem consisting of two municipalities. It has a strong network, people know each other, and the threshold for getting in touch with colleagues the other municipality is low (Interview 5). One informant outside the FGU system described the social and professional network in Lolland-Falster as follows:

"A lot of people know each other. And it is hard to find other partners if a collaboration isn't a success (...) We don't spend too much time quibbling over details. There's a greater focus on being colleagues than on being competitors."

A strong personal network based on trust, mutual aspirations, and the objective of making the municipalities better equipped to meet the needs of young adults and young people are all important factors in shaping FGU's success. The board itself is an example of the benefits of smaller ecosystems. Establishing a voluntary board with representatives from across the range of regional economic and social actors in Lolland-Falster is one indication both of the dedication involved and of the purposefulness of establishing FGU in the area. It also allowed for a greater say in the general development of the municipalities through strategic use of FGU for wider purposes. One of our interviewees pointed out that the board provides a great opportunity for networking, including the opportunity to speak informally with local politicians in a different, and apolitical, arena.

5.7. FGU and collaboration with other education providers

The independent status of the school is important for FGU and the municipality because it provides somewhat freer reins with which to develop the institution to fit the local labour market and youth education. The state mandate for FGU creates the framework for the institution, but beyond that there is little direct management from the national authorities. This was mentioned by several interviewees as a positive development. There being only two municipalities collaborating in the FGU is also generally seen as positive, instead of the more common five to six municipalities, despite the compromises the two municipalities both feel they have had to make, according to our interviewees (Interview 2, 3, 4). The point was echoed by the interviewee from KL, who said that it is important to recognise municipal self-governance as part of this process, and also the municipality's links with its own population.

The idea is that, in the long run, there will be a concerted way of approaching youth education in Lolland and Guldborgsund (Interview 2). The composition of the FGU in itself, coupled with the composition of the board and FGU's collaborative partners, is sensible. The presence of labour market actors in the strategic decision-making for the school is important, too. These labour market actors are ambassadors for the FGU and can talk about and advocate for the purposefulness of vocational studies, as well as relaying what the situation is like on the labour market at the moment (Interview 2; Interview 1). Targeted collaboration with other youth education institutions has therefore been very constructive and good. Youth education bodies such as SOSU and CELF should also be noted as key players for continuing education and training after FGU (See Box 2.).

Box 2. SOSU Nykøbing Falster and CELF

SOSU (Social og sundhetsuddannelse) Nykøbing Falster is "Denmark's smallest independent SOSU institution" with an ambition to deliver "high vocational welfare education that is evidence-based and with the labour market in mind". SOSU provides education focused on social and healthcare related training. It offers three educational programmes. These are provided in collaboration with Guldborgsund, Lolland and Vordingborg municipalities (Region Zealandmainland) (SOSU Nykøbing Falster, n.d.).

CELF is the Centre for Vocational Education in Lolland-Falster (Center for Erhvervsrettede uddannelser Lolland Falster). CELF's objective is to qualify and prepare young people and adults to meet the requirements of the future labour force. CELF plays an important role as a local and regional development actor, with a view to increasing labour market participation and skills development. CELF offers 27 youth education programmes, as well as business college education, technical vocational education, plus further training and in-service training.

Targeted recruitment to specific youth education providers such as SOSU (social og sundhedsuddannelse) – social and healthcare studies – is a good example of one such collaboration. The leaderships in FGU and SOSU meet every other month. It also helps that the director of FGU previously worked in the SOSU system, and so knows and understands the institution well. SOSU collaborates with the region and the municipalities because they are the institutions in charge of social services. For example, geriatric care is organised at a municipal level. The challenge more generally regarding traineeships is that the municipalities are also is in charge of hosting other students in internships/traineeships. According to SOSU director Steen Frederiksen, the collaboration between FGU and SOSU is supported by good interpersonal relations, and strong knowledge of both the area and of the respective institutions.

SOSU and FGU collaborate on student visits to help give a clear idea of what SOSU is, what an education in SOSU means and to introduce the teachers. SOSU has short traineeships in the municipalities, and FGU students are introduced to this idea. As such, SOSU offers a highly labour market-oriented education. In the first year of the FGU, SOSU received seven highly motivated and ambitious students (Interview 5).

CELF, the Centre for Vocational Educations in Lolland-Falster, is member of the FGU Board and also aspires to working closely with FGU. Traditionally, collaboration with the labour market has been very easy and mutually beneficial for both CELF and SOSU (Interview 2; Interview 5).

Combining the theoretical and the practical in training is something that has been long sought after, because that is what will enable young people to enter the labour market, as one interviewee observed. "There is a need for all of the young people in the municipalities, and there is a commitment to ensure that all of them get an education" (Interview 3). This is what takes precedence. Another interviewee stresses that the young people of today are not going to do the same as their parents did. In that way, it is natural to look towards new ways of organising education and training (Interview 3). The FGU board has been investing time in addressing both of these aspects thus far (Interview 2; Interview 4). The regional market determines what youth education is available. The development of educational programmes, and ensuring highly qualified teachers, is the key to future success and thriving regional development.

Nykøbing from above.
Photo: Ingrid Riis.

5.8. Challenges

Legal challenges

One of the main challenges connected to the integration of FGU as part of municipal youth engagement and guidance efforts concerns the legal texts pertaining to employment efforts, social services and youth initiatives (Retsinformasjon, 2019b; Retsinformation, 2019a; Retsinformation, 2019c) According to one interviewee, the different legal texts do not correspond at present. They may be highly detailed for one area, but not for another, leaving little room for interpretation in some cases and much more in others. This is creating both uncertainty and a level of disconnect between the three services for which the municipality is responsible. "This has implications for the work ahead," according to one interviewee. "If [the legal texts] are not aligned, we will end up with the same complicated structure that we had before" (Interview 7).

A revision of the legal texts, and ensuring that these legal texts are mutually reinforcing, would benefit the municipalities and support their work towards better integrating their initiatives for young people. Although, first and foremost, these legal texts need to correspond in a better way in order to support intra-municipal work, it is also important to take into consideration the legal barriers to sharing information across municipal borders (Interview 7). As FGU assumes inter-municipal collaboration, it is important to resolve issues connected to GDPR and the best ways for mapping the presence and needs of young people across the area covered by the FGU institutions (Interview 7).

Institutional challenges

Being a newly-established institution brings with it growing pains, which is to be expected in the early days of a new structure. Finding your feet may also be challenging in a new collaborative structure, with a new mandate. For example, some of our interviewees were under the impression that the municipalities of Lolland and Guldborgsund have not collaborated as closely as this prior to FGU. The municipalities are, according to the interviewees, somewhat different, each wanting to make their mark on the tasks and structure (Interviews 1-7). For this reason, bringing in an external party to build FGU was helpful. The aim was to produce a balanced view, while also ensuring that there is enough room for both municipalities to make their mark. This approach was pertinent to its initial success. In this way, the institutional and municipal trade-offs and wishes were carefully balanced against the needs of the students.

Some interviewees raised concerns about the students' needs. They were worried that FGU would eventually become more academic, when in reality the students needed practical work (Interview 2, 3, 6). Conversely, the institution is certainly proving to be good for practically-minded students, but for the rest it might be seen as a 'hygge'-school – somewhat too convenient and nice (Interview 1). Getting the balance right will be an ongoing process (Interview 1), since FGU combines courses tailored to the individual, while also offering traditional vocational and theoretical studies in a general sense: "Our students are guinea pigs, in a way" (Interview 3).

Based on the interviews, it may seem that there was little communication aimed at discerning a common vision for FGU prior to its implementation (Interviews 2, 3, 4). However, both municipalities are interested in helping to provide a future for their younger population, according to our interviewees (Interviews 3; Interview 4). This is an important common denominator. One interviewee summarised it as follows: "Both municipalities are keen to provide a future for their young people, but it is difficult to agree on where and how they to provide it for them" (Interview 3).

Marielyst beach.
Photo: Ingrid Riis.

Financial challenges

Financing several schools may be a challenge in the future. Discussion has therefore centred around funding, and the role of a 'critical mass' for placing schools in many locations across the Lolland-Falster islands. One interviewee says that "the size of the school means that everything should be gathered in one area. However, what would be best for the students would be that FGU is as close to them as possible, and [that the schools are] more spread out, geographically speaking" (Interview 6). Connected to this, further concerns were raised that students living further away from the location of the school would be less inclined to participate. "'Weak' students are less mobile. There is a greater chance of losing them if they have to drive a long way to get to school. [We need] a decentralised teaching environment where it is possible to hold on to the weaker students, in an environment that they recognise and in which they can enjoy themselves" (Interview 6). Since its establishment, FGU been spread across the three major towns in the Lolland-Falster region.

The location of the schools presents yet another challenge, i.e. finding suitable buildings. In order to combine the different educational programmes (AGU, EGU and PGU), the school building needs to have room for workshops, kitchens, and other spaces for practical training, as well as classrooms. Increased financial costs related to the quality and appropriateness of the buildings will also mean that the municipalities have less money to spend on the primary task, which is to develop good quality training programmes and teaching. According to our interviewees, a lot of time has been spent discussing this, which has detracted from the focus on training.

Resolving issues locally is important, but the Ministry of Children and Education and parliament need to come together to solve problems pertaining to legislation regarding fixed assets, according to several of our interviewees. The financial model was up for discussion in the early days of establishing FGU at national level. The interviewee explained that the rationale for the current financing model was to place the ownership with the municipalities, because in other forms of youth education the students were state funded. Until FGU, the municipalities were able to send young NEETs to adult education programmes, for example (Interview 1). The current

finding model incentivises municipalities to strengthen ties between their youth guidance, their education system, and the labour market.

However, although technically state-owned as an educational institution, two-thirds of the money per student comes from the municipalities. According to one interviewee, this not only means that the municipalities are pressed for funding, but that "if you are not able to establish good collaboration in [and between] the municipalities, and the schools do not deliver on the municipalities' requirements, the municipalities could turn elsewhere. It is a pitfall" (Interview 2). This interviewee subsequently added that he does not believe this to be an issue in Lolland-Falster, as the municipalities of Lolland and Guldborgsund collaborate well with FGU – but it is still a theoretical possibility.

5.9. Replication potential

Although the school system itself might be difficult to replicate across the Nordic Region, due to the significant restructuring it requires at the national level, there are still lessons to be drawn for municipalities with regard to their newfound structures for skills governance. Providing a space for combining theoretical and practical training, pre-upper secondary school, not only means that there is a new opportunity for catching vulnerable students and ensuring that they are provided for by the system, but also that they have more time to determine their future by finding their own way. The Scandinavian, and indeed Nordic, education and social system is a model that rests on the premise of equal opportunity. FGU is one step in addressing a broad range of vulnerable individuals from different backgrounds and with different abilities.

Dialogue, along with a context-based education and training system, is one of the key factors of success. The other is the social responsibility factor, and the mandate to take care of future inhabitants of Lolland-Falster. "Everyone feels that they have a great responsibility to help out. There is also a lot of openness," one interviewee states (Interview 2). However, one interviewee felt strongly that much could have been resolved by investing more in teacher-training. "Ideally, we would have an education system that eventually does not need FGU as a supporting measure (…) An engaged teacher who recognises the pupil is the most important factor. If all teachers recognised their students' abilities, we wouldn't need FGU" (Interview 1). This harks back to the interviewee from KL, who emphasised that FGU is a means to an end, and not an end in and by itself (Interview 7). Where similar structures to FGU are not a viable option, investment in teacher-training, focusing on training in a comprehensive way, may be a feasible and incremental, as well as highly effective, change for the better.

5.10. Conclusion

Since FGU is a nationally devised strategy for dealing with the high number of NEETs, the municipalities have relatively little say on the main tenets of the programme, the structure of the FGU Board, and the key curriculum. However, the municipal and regional mandate to work on youth engagement and guidance has been further strengthened, placing the possibility of tackling municipal and regional challenges within the realm of opportunities closest to where they operate. Introducing FGU as a tool in municipal efforts to tackle NEETs is a move towards strengthening and integrating this work further. By working simultaneously on breaking down silos internally in the municipal organisation, and also across municipalities in collaboration, it is possible to foster stronger engagement from local businesses in youth education and training policy.

The case of preparatory and basic training is also new. It has only existed for one year. From our interviews, it is clear that it has been a positive first year. The case study here provides a few pointers from which to learn.

First, the composition of the board has ensured that municipalities, regions, and other education initiatives have not placed theory-heavy curriculum at the centre of the education provided, and have been able to view young people's skills development in a more holistic manner. The involvement of actors from across the regional labour market, including employers and employee organisations, makes the practical side of education all the more relevant. In addition, it forces the municipalities to consider skills governance in an inter-municipal way. Although not an end it itself, FGU is a catalyst for increased inter-municipal collaboration.

Second, being in close touch with labour market actors and with other independent institutions is a further aid to municipal planning in addressing skills mismatches and skills development in the area, as well as working together to anticipate what skills are needed in the future (skills anticipation). If FGU is to mirror needs on the local labour market, and simultaneously respond to the needs of young people in the municipality, there needs to be a substantial conversation between the relevant stakeholders. This also requires a change of mind-set. FGU is responding to this change of approach. This particular training institution is also a societal institution which needs to be taken as a strategic benefit to collaboration between municipalities, not only in the long-term, but in the short- and mid-term too. The structure of FGU also ensures greater ownership and anchoring, since all actors affected by skills development are involved in the FGU's strategic development.

Third, FGU systemises an otherwise non-comprehensive and opaque system of educational guidance and education for vulnerable or challenged young people. FGU brings together and streamlines the education on offer to those who are the furthest away from access to both education and the labour market.

5.11. Interview list

1. Michael Bang, Direktør CELF
2. Niels Gerner, Chair of FGU Board Lolland-Falster
3. Vibeke Grave, 2.viceborgmester i Lolland Kommune, Formand for Social og Arbejdsmarkedsudvalg
4. Ole K. Larsen, 2. viceborgmester i Guldborgsund Kommune, formand for Beskæftigelsesudvalget
5. Steen Frederiksen, Direktør SOSU
6. Steffen Rasmussen, Fagligt fælles forbund
7. Søren Melcher, Specialkonsulent Børn, Unge og Folkeskole, KL

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On the ferry to Bergö. Photo: Michael Kull, Nordregio.

6. Finland: Local collaboration for service provision on the island of Bergö

By Elin Cedergren and Michael Kull, 2020

6.1. Introduction

The Finnish landscape is characterised by archipelagos, lakes and islands, with water covering one-tenth (33,000 km2) of the country's surface. Finland is also one of the OECD's most rural countries. This, combined with the archipelagic landscapes, results in a fragmented distribution of population, with vast distances between inhabitants and service nodes. At the same time, the rural archipelagos are also considered key assets for regional development, attractiveness and wellbeing – as a result of the proximity they offer to water and nature, the accompanying cultural history, and the ways of life that go with this. Access to services is a key tenet for attractiveness and wellbeing in archipelagic areas and islands, though it varies greatly from place to place.

Over the past decade, urbanisation processes in Finland have led to shrinking rural areas. Many municipalities, therefore, face challenges in establishing a basis for service provision, including healthcare, schools and social care (ENRD, 2018). Finland also has an elderly population profile, resulting in increasing demand for the provision of healthcare and care services. In this light, the notion of centralising public service provision and public administration structures has been widely debated across two decades, not least because further healthcare reforms are in the pipeline (Nordgren, 2019). Physical and democratic distance between people and services, the role of local public authorities, and issues of decision-making are the key current (and future) challenges for rural communities, not least in the archipelago. Faced with this, many local communities have themselves begun to initiate, develop and sustain local service provision and improved welfare for local residents (Rantamäki & Kattilakoski, 2019; Nordgren, 2019).

This case study sets out to examine the Finnish island of Bergö, located in the Kvarken Archipelago. Islanders, through a locally-led initiative, sought to ensure adequate local service provision through bottom-up development. This was done through the creation and establishment of service housing for older people in Fyrgården. It is a project that grew 'under one roof' – forming a combined solution incorporating the municipal service provision of a primary school, a public library, a health station and mobile care facilities. The leaders of the initiative, an island council (Bergö Ö-råd) and a related working group, have persistently

advocated for local development, organising joint activities and seeking state funding to make the new service building possible.

This case study illustrates a process in which locally-led service provision has been successfully designed through a combination of hard work, community spirit and collaboration – as well as long-term dialogue with the local municipality. Local resources, collaboration and networks and were key tenets in enabling this local initiative to progress successfully. At the same time, it was vital to gain trust from (and close dialogue with) the local municipality. Funding from the Finnish Island Policy budget was a key enabler for the municipality, allowing it to invest in municipal service solutions established in collaboration with those involved in the local initiative.

Bergö – Location, Infrastructure and local services

Bergö is one of the 178,947 Finnish islands and is located in the municipality of Malax. It is the largest island in the municipality – approximately 3.15 km2 in size and with a population of nearly 500.

A ferry – which is part of the public transportation system – connects the island with the mainland. Islanders can use a bus to commute to the City of Vaasa once a day, on weekdays. Municipal water and wastewater treatment services are available for around two-thirds of households, along with a cable TV network for most of them. Importantly, there is now the possibility of a fast-fibre connection, too. Other local public services include service housing for older people, a school for grades 1-6, medical and postal services.[4] The availability of kindergartens is very important for the viability of rural areas. This is a service which is also available in Bergö.[5]

Islanders can shop in a grocery store and have access to a library, hairdresser, flower and gift shops and a café.

A fishing harbour and several marinas, plus a guest dock with a service house, are used by locals and tourists alike. Other amenities include beaches suitable for swimming, a miniature golf course, sauna cabins and a riding school. The island also has a local association (NGO) – the Bergö Island Council, or Ö-råd that serves as a focal point for organising local development initiatives and activities.

Map 4 and Map 5 show the importance of the local availability of services. If school and library services, for instance, were not available on the island, driving time to them would increase considerably, while also being subject to ferry schedules. Bergö is highlighted with a red circle.
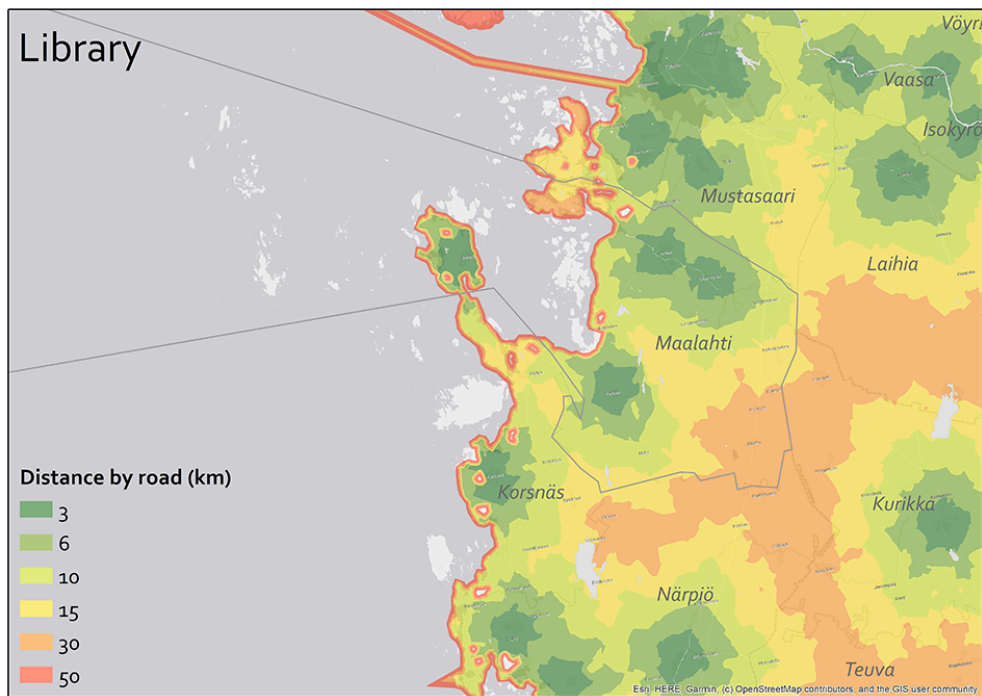
Box 3. Ostrobothnia

The Region of Ostrobothnia is composed of 14 municipalities (2021) and approximately 181,000 inhabitants. The town of Vaasa is the regional centre, with around 67,000 people. The region is characterised strongly by its archipelagic landscape, featuring 7,976 km of coastline. The Kvarken archipelago is designated a UNESCO World Natural Heritage site on account of its land uplift phenomenon (Region of Ostrobothnia, 2019).

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4. One of the six comprehensive schools in Malax is located in Bergö. See table V.2. in the appendix, which also shows the development of selected services in the municipality of Malax and the region of Ostrobothnia.
5. Table 7, in the appendix, shows the growth in the number of children participating in full-time early childhood education through kindergartens, which are services financed by the municipality. In both Ostrobothnia and Malax, these numbers more than doubled between 2000 and 2018, which is higher growth than the Finnish average.
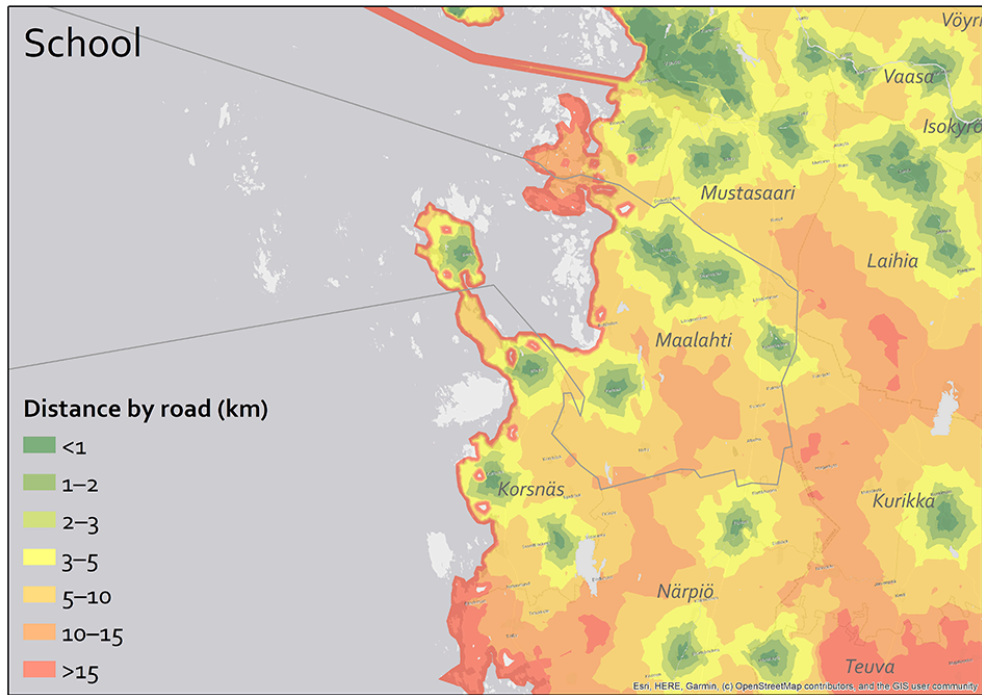
Map 4. Distance to school in Malax by road.
**Cartographer: Oskar Penje, Nordregio.**

Map 5. Distance to library in Malax by road.
Cartographer: Oskar Penje, Nordregio.

Malax municipality

Malax is a bilingual (Finnish and Swedish) municipality in the Region of Ostrobothnia. The municipality was established in 1973, through the merger of the former municipalities of Malax, Bergö and Petalax. The combined municipality has 5,475 inhabitants (2019), of which 28.4% are 65 years or older (Malax municipality, 2019). [6]

The archipelago of Malax has a long shoreline and many islands reaching far out at sea. About 5 % of the shoreline is covered by fixed transport connections. In 2000, Malax was included as one of the Finnish Island Policy's dedicated island municipalities. This is a policy aiming to ensure balanced regional development in islands and in coastal and water areas. The municipality has therefore been a recipient of island supplements (in the form of higher state shares) up to 2020. (More information on the Island Policy is provided in Box 5 below).
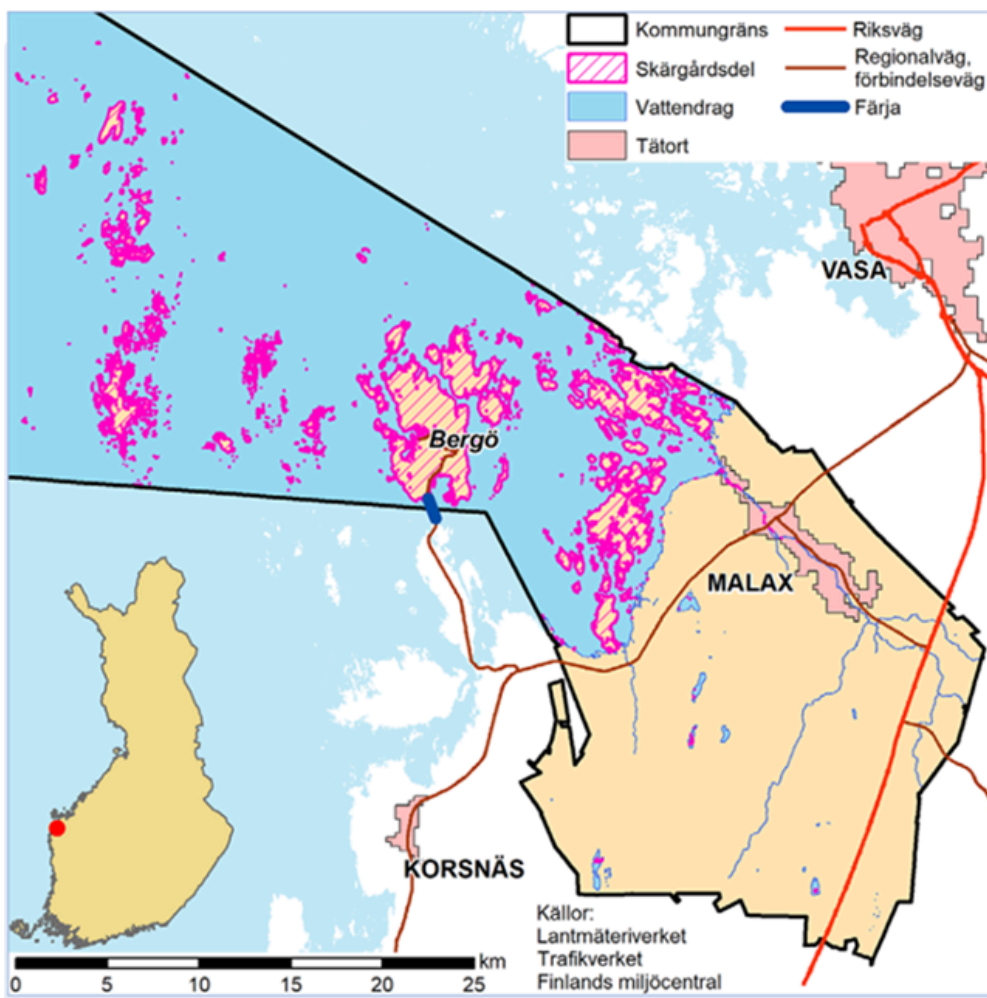
Map 6. The location of Malax Municipality, the archipelagic area and Bergö island.
Map source: Hirvonen et al., 2018: 73.
Data sources: National Land Survey of Finland, Finnish Transport Infrastructure Agency, and the Finnish Environment Institute.

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6.   Figure 3. outlines the age structure from 1990, along with prognoses for 2040, comparing it with Finland as a whole.

Service accessibility – Malax and Ostrobothnia compared to the rest of Finland

Table 5. below shows service accessibility in Malax and Ostrobothnia, compared with the rest of Finland. The data shows the average distance for the total population to the nearest facility, based on cross-border road distance in kilometres (including ferry links). The red areas indicate longer distances, compared to the two shades of green. While the distance to pharmacies is considerably higher in Malax compared with regional and national averages, education and grocery stores are only slightly more distanced from their users. Library accessibility is slightly better in Malax, compared with the regional and national averages.

	Grocery store	Library	Education*	Pharmacy
Malax	2.9	3.3	2.3	8.8
Ostrobothnia	3.1	4.3	1.6	4.4
Finland	2.5	3.8	1.6	3.4

*Includes all education from early childhood to Higher Education Institutions (HEIs). (Source: Nordregio, 2020.)

Table 5. Average distance for the total population to nearest the facility. Cross-border road distance in kilometres (including ferry links).

Prognoses for age structures to 2040 – Malax and Finland

Figure 3. shows the development of age structures in Malax and Finland, from 1990 to 2040, according to the Finnish Municipal Association. While in both Malax and Finland in 1990, the largest age group was that of 25 to 44-year-olds, the situation in Malax changed from the mid-1990s onwards. From 1995 onwards, the largest age group was the 45 to 64-year-olds. However, from 2015 onwards, the largest group was the over 65-year-olds. While this age group is expected to become the largest one in the rest of Finland too, there will be a higher proportion of the 25 to 44-year-olds compared with Malax.
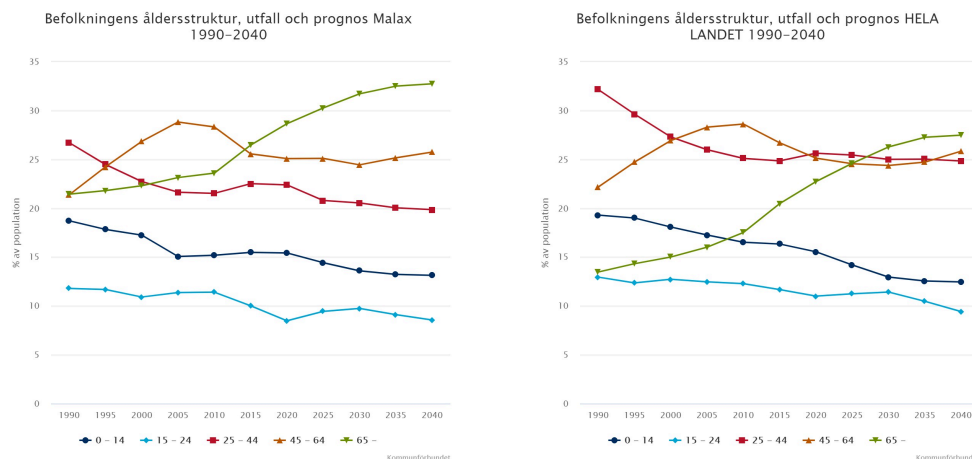

**Figure 3. Age Structure in Malax (1 pic.) and Finland (2 pic.): 1990-2040.
Source: Kuntaliitto, 2019.**

According to the prognoses of the Finnish Municipal Association, by 2030 the two largest age groups in Malax will be between women between 80 to 84 and 65 to 69 years old (Figure 4.). The largest age group in the male population is between 50 and 54 years. This is considerably different from to the national situation, where a considerable amount of people will be between 35 and 49 years.
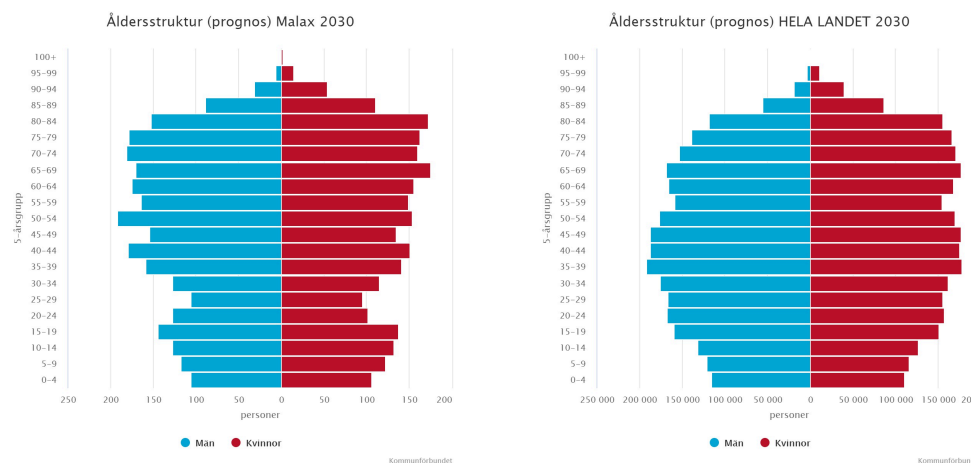

Figure 4. Prognoses of age structures 2030 – Malax municipality (1 pic.) and Finland (2 pic) (blue - men, red - women).
Source: Kuntaliitto, 2019.

6.2. Bergö: Locally initiated service housing became a multi-functional service centre

Bergö provides a good illustration of how locally initiated service provision, in the form of the service housing (Fyrgården) which was established in 2017, came to expand into a multi-functional service centre (or 'service bundle'). This facility was able to combine elderly care with healthcare, welfare/social care, education, and cultural services. Of real importance here is the link between younger and older islanders. A combined initiative enables older people to still stay on the island when they are in need of special services, and young school children to receive education close to home.

This project, 'Fyrgården' or 'Majakkakoti', was realised after a long process of preparation which involved seeking funding, petitioning, and reaching out to decision-makers. The process started around 20 years ago and was initiated by local residents, who came together to form the Bergö Island Council (Ö-råd). The local association's initial focus was on the potential to establish a municipal care home for the elderly on the island. In 2008, the island council formed a working group to further this cause. The group had, for a long time, been proposing the idea of a care home for the elderly on Bergö to the municipality – a task that proved difficult in the light of economic pressures and the centralised services ethos. At that time, there were also enough municipal elderly care home places to cover need. The island council applied to the Housing Finance and Development Centre of Finland (ARA)[7] for funding for the construction of the facility on several occasions. Without support from the municipality, these initial applications were rejected. The group realised that the task would need to be driven and implemented locally instead – by the islanders themselves, in other words.

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7. The Housing Finance and Development Centre of Finland (ARA). ARA operates under the Ministry of the Environment and is responsible for the implementation of Finland's housing policy. ARA provides support and guarantees for housing development and construction, and also functions as an expert partner in housing issues. It develops, renews and promotes economically sustainable housing at reasonable/affordable prices (ARA, 2020).

The third application attempt for ARA funding was successful, however. This happened when council members and the working group were made aware of the preconditions for operating as a joint-stock company. A non-profit public limited company was started, called Bergö Serviceboende AB. The Bergö Island Council bought shares in this. The support received from ARA comprised 40% investment aid, with the rest coming as an interest-rated loan subsidy. At the same time, several events took place which favoured the provision of support from the municipality, including the creation of a 'service bundle', or centre, with different municipal services under one roof on the island. For example, the school had to be extensively refurbished (or relocated) due to poor indoor air conditions. This required the consideration of new solutions and ideas. The municipality of Malax also experienced changes in capacity in relation to municipal care homes for the elderly, leading to the need to redistribute places. This led to discussions about opening both a new primary school and service housing adjacent to each other, and to arriving at a common plan and shared solution. The municipality agreed to build a schoolhouse if Bergö island council would provide a building where service housing for the elderly could be based. Intensive planning took place in 2015, and construction of the service centre started in 2016. Later in 2016, the school opened; and in 2017 the first tenants moved into Fyrgården.

On the following pages, we discuss the obstacles to, and enablers of, this endeavour. We shed light on the policy frameworks involved, and we discuss both the learning from and the replication potential for, similar initiatives elsewhere.

Multi-functional service centre on Bergö, Finland.
Photo: Josefin Torrkulla/Vasabladet.

Box 4. Fyrgården 'Majakkakoti'

Fyrgården is located at the heart of the island, offering service/supportive housing for elderly – currently with ten apartments, and with residents from Bergö and other parts of Malax municipality. The building is owned by the local Island Council through their joint stock company, Bergö Serviceboende AB, while the municipality runs it. Mobile services and home care for people in need are organised in the building, too. In addition, food is prepared for people who are mobile enough to eat there. The Malax-Korsnäs civic institute (medborgarinstitut) offers different courses, ranging from sports and gymnastics (using the gym) to music and handicraft. A hairdresser visits and offers her services. Next door to the service housing is a municipal primary

school, a public library (open three times a week) and a local health care station (open once a week). These facilities are synergistically designed, so that the service housing and the primary school are able to share infrastructure – such as a heating system and a kitchen. A short film featuring the inauguration of Fyrgården is available here: https://www.youtube.com/watch?v=oTL-6J1YHgU&feature=youtu.be.

Service homes, or supportive housing, are a form of housing in Finland intended for those in need of continuous support in their home environment. Supportive (or 'supported-living') housing refers to an arrangement either for living in a separate apartment, or as part of a group apartment where various quantities and varieties of practical support are included. Residents there have leasing relationships in accordance with the Tenancy Act. Municipalities are the principal organisers of supportive housing, but it can also be provided by various associations and companies (Finland's Environment Administration, 2019). Policies focusing on the promotion of functional ability, independent living and active participation have been prioritised in Finland, where the population is ageing rapidly. This particularly addresses the need to find new ways of responding to the needs for care and support of older people with declining functional ability. Creating services for older people more innovatively and effectively will in all likelihood slow down the increase in social and health care costs in the coming years (Finnish Institute for Health and Welfare, 2020). Bergö provides an example of such an innovative solution, with flexible and adapted ways of providing supportive housing for the elderly – in combination with other service functions.

6.3. Main drivers and motivators behind the initiative

Local drivers for elderly care and service provision

The idea for an elderly care home on Bergö goes a long way back, according to our interviewees. Essentially, the need for it has its background in the particular island conditions that apply to Bergö – namely, significant physical distances to both central services and public administration, but also the tight web of the local community, and the sense of belonging on the island. Prior to the establishment of the service centre, the elderly inhabitants on the island who needed a home offering care had to leave Bergö and go to the mainland, to the centre of Malax municipality. However, as a result of its location, including ferry connections, it can take about an hour to get to the municipal centre. This was a challenge when visiting elderly people, especially for those not owning a car. In addition, there was a strong desire to preserve cultural identity – for example, the powerful sense of identity linked to the local dialect, which is particular to the island. Our interviewees also described the deep significance of local service provision on the island. This is not only important for older people, but also for the attractiveness of Bergö to young people and families – including good access to local schools and a kindergarten, and close proximity to older relatives.

The people and institutions behind the initiative

Local residents who came to form the Bergö Island Council (Öråd) were the main drivers behind the initiative to build a home for the elderly (Fyrgården). They formed a specialist working group and an associated planning committee, with local representatives working voluntarily on the project, along with representatives from the island council. During our interviews, the people who initiated the project spelt out some of the personal drivers that led them to commit to it. For example, one interviewee reflected on the past, explaining: "My mother and aunt were old, so I realised that it would be difficult for them when the time came to move – and of course if we

wanted to visit them frequently". Another interviewee remembered her own childhood when growing up in Vaasa. "My grandmother was with us, and it was natural to have her around and to live together with several generations." One of the project initiators also added a comment about the issue of fairness. "Everybody should be allowed to get services at home when in need, and the municipality was well able to afford to finance this project from archipelago money. There are a special fund and a policy for this" (interview, 2020; see Box 5.).

In this way, the project initiators were well aware of existing policy frameworks, including the Finnish Island Policy (Box 1). What they wanted was to direct national supplements towards a local initiative on Bergö, drawing from what Malax municipality was entitled to as part of the national island policy framework (interview, 2020). At the time there were discussions within municipal political and administrative organisational structures as to how to distribute investment across Malax municipality, and how to justify new investments on Bergö – such as a school, or a home for elderly – when the population, potentially, did not correspond with other parts of the municipality. In relation to this particular factor, a former municipal politician in Malax remembers that "there was always a discussion about this. Did we have a moral duty to provide this service to Bergö, or should we, thanks to this money, maintain better service at the centre of the municipality, which the Bergö inhabitants could also benefit from?" (Interview, 2020). The municipality finally decided to invest in a new primary school, a library, and a healthcare station, as well as running operations for the service housing – based on a joint solution, and with the local initiative for building the service housing, Fyrgården. Several events occurred at the same time in order that motivated the municipal managers to start exploring new possibilities – such as identifying the need for a new (or fully refurbished) school on Bergö, as well as the need to redistribute elderly care home places throughout the municipality when some of them had to be closed. "The catalyst was probably the school with poor indoor air circulation on Bergö. This was something concrete that needed to be solved", explained a former municipal politician (interview, 2020), who also pointed out the opportunity to use island policy funding and to find a positive solution arising from challenges specific to the archipelago and islands.

Box 5. The Finnish Island Policy

Island policy is one of the oldest elements of regional policy in Finland. The Government appointed a committee to address long-term issues relating to islands as early as in 1948. In 1961, the provisions on the Island Committee were laid down by decree and in 1981, the Island Development Act (494/1981) was enacted. This obliged all authorities to take account of the special status of islands in their activities. Island municipalities and part-island municipalities receive, for example, additional support in the form of central government transfers to local government, in order to secure the availability of basic services. These island supplements make an important contribution to the economy of small island municipalities. The Island Policy has a central role in promoting the archipelagos' and the islands' local potentials and strengths (Ministry of Agriculture and Forestry, 2020: 16). With regard to the financial supplements, the municipalities themselves decide on how to distribute island support geographically, and in the municipality's overall economy, despite the fact that the municipality receives these national supplements on the basis of its archipelago and islands (including Bergö). At times this has been subject to debate among island communities and political representatives, which is something that will be discussed in more detail below.

The Island Development Programme is a key tool in island policy. In 2020, the Ministry of Agriculture and Forestry published the sixth and latest programme. This programme sets out guidelines for the development of island and archipelagic areas, and sets goals in regard to the future – with a special focus on utilising the strength of island areas and local potential. Five key areas have been identified: connections and transport; housing, children and young people; industries and services; island culture and nature, and the environment. Regarding service provision, it has been particularly highlighted that "Archipelago residents consider that ensuring

public service is deemed to be an important factor that strengthens the equality between the archipelagic residents and the rest of the population." (ibid., 2020: 44). Other examples of highlighted features are multi-locality and smart adaptation/smart shrinking, reflecting the diverse situations and conditions that apply to the islands and to their inhabitants. Smart solutions to strengthen and secure wellbeing and the vitality of particular locations, offsetting a declining or aging population, are addressed in the programme, too (Ministry of Agriculture and Forestry, 2020).

Inspiration from other successful initiatives

The project initiators from Bergö derived inspiration from another project, namely the Kummeli Service Centre. This began operating in 1992. Its aim was to ensure the provision of healthcare, social services and cultural services in the Velkua area, in the Region of Southwest Finland. (At that time Velkua was a municipality. It has since merged with Naantali, in 2009). The area of Velkua comprises 300 islands, of which seven have permanent residents. With the support of the Slot Machine Association (RAY) and the county government, Kummeli Service Centre was built as a joint enterprise between the small municipality of Velkua and the Velkuan Kummeli ry association. Operated by a private association, the service centre sought to combine daycare, children's activities, an elderly care home, and home services – all under one roof. For the local group on Bergö, a home for the elderly was the focus to start with; but later the idea and concept grew, and they decided to pull everything together, as a woman who was part of the initiative from the outset explained. The project initiators were convinced in the growth potential of what they were doing, with multi-service provision and targeting different generations. The idea was that "people would move here and also bring their families along", the interviewee stressed.

Elderly care home on Bergö.
Photo: Michael Kull, Nordregio.

6.4. Challenges along the way?

(institutional, financial, legislative, sector-specific, etc.)

The process of moving from an initial concept to a successful, finished building took a long time and required dedication, co-operation, stubbornness and plenty of administrative work for both the project initiators and the working group. A key principle underlying the assiduous work of the local group was that it was carried out voluntarily. One interviewee emphasised this, stressing that "everything is based on us working voluntarily" (Interview, 2020). This is naturally a prerequisite for locally-led initiatives where no fixed funding mechanisms are in place. However, it also implies challenges. The engagement process, alongside strategic and practical work, is time-consuming. The people involved have other jobs, tasks, and commitments to deal with at the same time as the project. A lot of administration is needed – taking minutes at meetings, budgeting and finances, planning matters, permits, design and construction. At the same time, personal engagement and local ties were also recognised as enabling factors for involvement, taking into account local needs and preconditions and keeping costs down.

Interviewees from the local initiative talked about the challenge of gaining support from the local municipality for a home for elderly people on Bergö. They explained that the group had to start over and over again, and found itself working with several new municipal directors along the way. The fifth such director in office since the start of the initiative finally gave the green light for construction. Similarly, one interviewee who, at that time, worked for the municipality, remembers these discussions, recalling that smaller service units were not always easy to argue for from a municipal point of view. However, several events favoured this particular local initiative and encouraged the municipality to invest in services allocated to Bergö, as we describe below.

Access to elderly care.
Photo: Michael Kull, Nordregio.

6.5. Key enablers and factors supporting success

The endurance of the local community was a key enabler for landing the project successfully. In this case, it was a joint effort – a 'teamwork; approach involving several committed individuals, together possessing the local knowledge and networks needed to establish a care home for the elderly. The team encompassed a variety of competencies and skills, with different roles being assigned as appropriate. This covered areas such as coordination, finding the right financing mechanisms, planning and construction, knowledge of healthcare and social care, and administration and bookkeeping, as well as enabling community engagement. Another important enabler was a strong sense of community and motivation for engagement in voluntary work. One interviewee, commenting on this, said: "The important driving force was that you had the whole village behind you. Everyone on Bergö pushed for it. We wanted to give something to our home village" (Interview, 2020). Related to this, there was (for example) local support in the form of fundraising, scrap collection, and gifts to the project through donations. These became "many small streams", and an important overall contribution to the project. When funding was secured from the ARA, local fundraising could instead be used to provide a little extra support to those living in the service home.

Funding from the ARA was naturally a core enabler to proceed with the plan to build a care home for the elderly. In relation to this, one of our interviewees elaborated on the importance of knowing how to navigate a way through different networks, how to drive processes, seek funding and keep up with the project administration. In the late 2000s, a new member was recruited into the working group and project – someone who brought other networks and fresh knowledge into the project. This had a great impact and gave the project that extra push it needed.

While our interviewees stressed the collaborative nature of the working group, they also identified the relationship between the Bergö community and the municipality of Malax as important. The process of developing a joint service provision solution entailed close contact, discussion and dialogue with municipal representatives. Based on this process, a joint solution could be developed in the form of the multi-functional service centre, Fyrgården. Good contacts were needed across the municipality to support this initiative.

"The act of applying for government funding was not that difficult after all, but before that, the support of the municipality was needed", one interviewee reflected, looking back. Building relationships, and also finding the right sparring partner, can be a lengthy process. "This took several years, and we went via the municipality's social board first, before approaching the municipal director later," is how one interviewee described the early phase. This process also required a change in mindset. There were doubts as to whether there would be enough elderly people justify running a home for them in Bergö, for example.

"Yet, we had the highest percentage of elderly people in the municipality", interviewees explained. From a municipal point of view, a former municipal politician recalls that a key enabler to engage was to listen, and pinpointed that a model involving collaboration with the local community can be more challenging and time-consuming than the traditional path, where the municipality is the sole owner and driver of such a project. However, in the end, it is worth the time and is also possible to implement co-operation in many different ways.

"It is about having the will, and it is about the people [...], but it is also about checking what is legally possible. It is about developing and making use of your creative juices, and I would like to point out that without the local community, and the will and commitment of local enthusiasts, there will be nothing. That is the driving force that must be there. The municipality is more of an enabler in this case".

Interview, 2020.

According to an evaluation of the Finnish Island Policy, the island supplements provided to the municipality were also an important enabler to ensure the provision of services on Bergö. However, the municipality does not specifically indicate how much of the island policy funding was directed towards the initiative on Bergö (Hirvonen et al., 2018)

Health station and home service - togeter with school, library and elderly care all under one roof.
Photo: Michael Kull, Nordregio.

6.6. Key achievements

This particular initiative has successfully secured key services for the island. According to an evaluation carried out by the Ministry of Agriculture and Forestry regarding the implementation of the archipelago policy (2018), the belief is that the decision to build a new school and service housing on Bergö has been a central component in maintaining the viability of the island.

 "The Island Act has in principle secured the development of Bergö and the other archipelago areas in Malax municipality. On the other hand, with an emphasis on the local point of view, it can be said that a municipality-specific island policy is not necessary in Malax, as Bergö is still relatively viable and has an active local island council".

(Hirvonen et al., 2018: 76).

By 2020, Malax was no longer included as one of the designated island municipalities.

The process of moving from a local initiative to develop a care home for elderly, towards creating a multi-functional service centre as a joint project involving both the municipality and a local NGO, took time, dialogue and careful planning. Daring to test new solutions for service provision – for example, co-locating the primary school and the elderly care home – was essential, and proved successful. The service building has become an important hub for the local people, and this format has also fostered inter-generational relationships and synergies. Our interviewees stressed that, in the end, the project was able to create some 10 to 12 jobs. The school is attended by 30 pupils and was indeed planned for 30. In addition, 15 smaller children attend the kindergarten. "There is also a new pupil from Columbia, hence we need to work well on good integration," an interviewee pointed out.

With a twinkle in her eye, one of the interviewees said that such a project is a bit "like giving birth to a baby, first you might say never again – but after few years have passed by…". The next project for this energetic group was opening the Bergö Caravan Park campsite, which became a popular facility for visitors during the summer.

Harbor and gateway to the archipelago.
Photos: Michael Kull, Nordregio.

6.7. Upscaling and replication potential: could this initiative work in another place/island?

As illustrated in this particular case study, local community groups can be key stakeholders in initiating and mobilising local service provision through public funding and support mechanisms. The dialogue and collaboration involved between local project initiators and the local municipality was a key enabler for establishing the elderly care service housing, Fyrgården. Similar collaboration also resulted in the co-location of the primary school, public library and health station – and also ensured that these operations can be run on a municipal basis, in collaboration with the local NGO. The strong local foundation for organisation, activities and associations on Bergö was a key enabler for realising this project after more than two decades of hard work. This case proved successful and provides well-adapted, inter-generational services for local people based on their needs and with a forward-looking attitude.

Several factors should be taken into account in terms of possible replicability. On Bergö, the tight web formed by the local community, and access to competencies and networks, was a key principle for planning, applying for funding, negotiating and coordinating with the municipality, and ultimately supervising a large construction project. To a significant extent, the scope of influence and resources among the local communities required to advocate for local needs, and to organise for them, has been strong in this case. The circumstances involved in such enabling factors often differ across locations, particularly in terms of socio-economic, demographic and cultural structures. In addition, the locus of the mandate, governance structures, and policies for place-based and local development differ across regions and countries – which also frames the opportunities available to drive such projects forward in collaboration between a municipality and a local NGO.

Initiatives such as Fyrgården and the service centre can serve as examples of innovative solutions for local services and of enabling local entrepreneurs to help solve social challenges. Smaller islands, in particular, can benefit from such solutions, not least rural areas where centralisation and long distances are crucial obstacles to the wellbeing of local communities and detract from the attractiveness of the location. Challenges for locally-led development initiatives, and for running smaller service units, can be that they are more vulnerable to change (the loss of key

people or staff involved, for instance). It is therefore important to ensure the long-term financing and support mechanisms needed to maintain the organisation. Small-scale and local solutions can also risk being overshadowed by the fact that larger structures and centralisation are often considered better ways of guaranteeing efficiency and improved opportunities for specialisation and oversight in municipal and regional public administrations. Policies targeting bottom-up, place-based and local perspectives and service solutions can be an important enabler to address areas that otherwise risk losing out when services are centralised. Examples provided here are, for instance, to be found in the Finnish Island Policy (Box 3.).

6.8. Key lessons learned from the local initiators

- **Be aware of financing possibilities and purposes**

The service housing building was largely realised as a result of government funding and loans through ARA (see above). Insight and knowledge about the application process, plus having good contacts, was a key enabler for this project. In hindsight, interviewees felt that they could have applied for more money, considering how the project grew. "If we had known that people would work in the home for the elderly around the clock, the proportion of government funding would have been bigger", our interviewees said.

- **Planning the building**

The building that now constitutes Fyrgården was smartly planned, with the same architect and planner designing both the school and the service housing. Instead of constructing one large building, which would require a bomb shelter, the design was laid out so that the service bundle on Bergö now comprises several different buildings – under the same roof. This has enabled a good solution at a potentially lower cost. The design of the building allows for co-use and synergies across the service areas, which also require shared infrastructure and space.

- **Think about potential growth**

This case represents a process that moved from the idea of a local care home for the elderly on Bergö, to a service centre with a range of services, all under one roof. Our interviewees highlight the fact that it is important not to plan too small, because the initiative may grow.

- **Sharing a building**

In a situation where a building is shared by an NGO and a municipality, clear agreements are needed about what belongs to the municipality, and what belongs to that part of the building later used by the NGO (the home for the elderly in this case). There may also be a need to adjust activities and "move around" some services in the building. Ongoing dialogue is needed to determine how things can be altered or modified in a meaningful and agreeable way.

- **Have good contacts to different levels of governance**

See above, and also remember to ask politicians for help.

- **Do good technical bookkeeping**

The local association responsible for initiating the elderly care home project depended upon long-term and careful administration, bookkeeping and planning – all over the course of many years. Having the project material, agreements, meeting notes and other material readily available is key.

6.9.Conclusions

This case portrays a process of locally-led solutions for securing service provision on the island of Bergö, in collaboration with local municipal efforts. The project began with a determined group of islanders who, through a long advocacy process, succeeded in building an elderly care home on Bergö. This initiative also led to the creation of a multi-functional service centre with a primary school, public library and a health care station adjacent to the service housing for the elderly. It is essentially the result of long-term co-operation and organisation for community service – something developed by the local community with the help of government funding and in collaboration with the local municipality, which runs other operations in the building.

Local efforts on Bergö, in the form of active local development advocacy work and projects, and dialogue and collaboration with the municipality of Malax (which also decided to build a school, a public library, a health station and to run the service housing built by the island council), have all had a significant effect on the quality and accessibility of island services. The outcomes of these local initiatives have also been scaled up to the degree that the island policy delegation and the Ministry responsible no longer deemed specific island supplements necessary for the provision of basic services in the archipelago of Malax. However, it is also important to consider the long term sustainability of the local service solutions and operations on Bergö, and to look particularly at what degree of national funding is required for maintaining a high quality of service provision. This point indicates the shape of the future discussions, the design of the Finnish Island Policy, and how this can support local authorities and communities in design place-based solutions that take into account rural and island-specific conditions.

Looking ahead, a social welfare and healthcare reform programme is currently being implemented in Finland (Finnish Institute for Health and Welfare, 2020). This will potentially transfer responsibility for the main healthcare system away from the municipalities and to the regions (maakunta/landskapsförbund). The effects that such a reform could have on the local service hub on Bergö is not yet clear. However, local project initiators have spelt out the importance of proximity to local government, and therefore to decision-makers with insight into local conditions.

Welcome to Bergö - a resilient and viable archipelago island.
Photo: Michael Kull, Nordregio.

6.10. Interview list

1. Mikko Ollikainen, former Municipal Director of Malax Municipality.
2. Bengt-Erik Nyman, former project leader and member of Bergö Öråd.

Group interview:

1. Britt-Marie Söderholm chairwoman of Bergö Öråd, and chairwoman of "Serviceboende" Fyrgården/Majakkatalo.
2. Lotta Skinnar, previous chairwoman of Bergö Öråd.
3. Margaretha Nyman-Klemets, teacher in Bergö.
4. Anita Hautalahti, librarian, municipality of Malax

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6.12. Appendix

Service type	Malax 2005	Malax 2019	Ostrobothnia 2005	Ostrobothnia 2019
Comprehensive schools	7	6	163	113
Upper secondary school	1	1	18	16
University of applied sciences			2	2
Universities			1	1
Cinemas			11	13 (in 2018)
Theatres			2	2
Libraries			62	51 (2018)

Table 6. Selected services in the municipality of Malax and Ostrobothnia.
Figures retrieved from Statistics Finland.

	2000	2010	2015	2018
Finland	89,132	122,806	140,808	141,106
Ostrobothnia	1,993	3,652	5,026	5,258
Malax	58	97	104	137

Table 7. Children participating in full-time early childhood education in kindergartens, with services financed by the municipality.
Figures retrieved from Statistics Finland.

Bolungarvík, Iceland. Photo: Páll Önundarson

7. Iceland: Bolungarvíkurgöng tunnel in Northern Westfjords

By Hjördís Rut Sigurjónsdóttir, 2020

Bolungarvík is a fishing town on the Westfjords peninsula in Iceland. The only connection to other settlements there used to be comprised of one of the most dangerous sections of road in the country (Vegagerðin, 2010). Tunnels have now replaced the hazardous road section, with traffic safety the primary rationale for the costly construction project. Before the replacement tunnel arrived, the road by Óshlíð was dangerous all year round, with a continual risk of avalanches, falling rocks and landslides. When the tunnels opened in 2010, traffic safety increased considerably, but other opportunities opened up as well. At the opening of the tunnels, the mayor at the time spelled out how they could extend the labour market area, making a wider variety of jobs in neighbouring municipalities accessible to residents in Bolungarvík. Previously, many people had avoided driving more often than necessary (Jónsson, 2010).

Bolungarvík is the second most populous municipality in the Westfjords, with just under 1,000 inhabitants (955). The town of Ísafjörður, in the Westfjord peninsula, has the largest population (2,685). It is also the leading service centre. The distance between Ísafjörður and Bolungarvík is 13 km, of which 5.1 km is through tunnels. Since 1996 Ísafjörður has been part of Ísafjarðarbær municipality, along with the villages Þingeyri, Suðureyri, Flateyri and Hnífsdalur. Together they have a population of 3,809. Three municipalities are located within the northern part of the Westfjords: Ísafjarðarbær, Bolungarvík (955 inhabitants) and Súðavík (208 inhabitants) (Statistic Iceland, 2020).

Municipalities	Population (2020)
Bolungarvík	955
Ísafjarðarbær	3,809
Reykhólahreppur	262
Tálknafjarðarhreppur	251
Vesturbyggð	1,021
Súðavíkurhreppur	208
Árneshreppur	43
Kaldrananeshreppur	109
Strandabyggð	457
Total	7,115

Table 8. Population in municipalities in 2020.
Source: Statistic Iceland, 2020.

Map 7. The Westfjords.
Cartographer: Oskar Penje, Nordregio
Yellow: Northern Westfjords. Green: Southern Westfjords.

Before the road by Óshlíð, located on a mountainous slope, opened in 1950, Bolungarvík was very isolated and only really reachable by sea. Although the road certainly improved conditions and accessibility, it was considered one of the most dangerous in Iceland, as stated above, causing it to be closed frequently, not least during winter (Bolungarvík, 2010). Road cabins were constructed in the three most dangerous spots, as well as some other minimal constructions along the way, in order to increase the road security. These solutions were, however, never sufficient and the debate about the need for tunnels for safe transport to and from Bolungarvík kept resurfacing. In the end, a decision was made. Different options for constructing the tunnels were explored, and a contract with the chosen builders was signed in the spring of 2008. Just over two years later, the tunnels were ready. They opened on 25 September 2010 (Minister of the Interior, 2012; Vegagerðin, 2010).

The tunnels and other transportation improvements, such as roadworks and bridge enhancements (constructed in parallel), have impacted the area significantly (Minister of the Interior, 2012). Even so, many challenges remain as far as transportation is concerned.

The opening ceremony in 2010.
Photo: Páll Önundarson

7.1. A region in a defensive position

The Westfjords region has long fought against the gradual fall in its population. In 2010, Bjarnason (2010) described the whole Wesfjords peninsula as a declining region, a trend that he mainly linked to an inadequate transport system. In the case of Bolungarvík, the perspective was a little more optimistic because the new tunnels were about to open. This created the possibility of strengthening communities in the northern part of Westfjords. However, poor transportation between the southern and the northern part of the Westfjords has continued to impede cooperation, and has reduced the importance of Isafjordur as a service centre (Bjarnason, in Byggðastofnun, 2012). During the summers, before the newest road construction, when all roads were open, the distance between Patreksfjörður and Ísafjörður was 197 km; but in winter, because of road closures the distance could be as much as 609 km (Vegagerðin, 2009). Two massive new construction projectsto provide a year-round transport link between the southern and the northern parts of the region are planned. One is the tunnel (Dýrafjarðargöng), which

opened in October 2020. The other is road improvements across a heath, in Dynjandisheiði, on which initial construction work began in autumn 2020 (Morgunblaðið 2020; Vísir, 2020). However, despite these challenges, there are multiple examples of municipal cooperation across the region, especially within transport areas. These will be discussed later.

In the first six years after the tunnels opened, the road was only closed twice. This number increased, however, during the harsh winter of 2019-2020.
Photo: Páll Önundarson

7.2. Governance structure and collaboration agreements

Iceland only has two administrative levels, national and local. Two municipal reform processes have been implemented after consultative referendums in recent times. The first of these was held in 1993, and the second more recently, in 2005. On both occasions, a majority voted against the suggested mergers. Nevertheless, the number of municipalities has decreased significantly, from 196 in 1993 to 89 in 2006. Further mergers have occurred since, and the number of municipalities has been reduced voluntarily, to just 69 today. (Grunfelder et al., 2020). Legislation requiring municipalities to have at least 250 inhabitants by 2022, and 1,000 by 2026, is underway. This is intended to promote further mergers (Grunfelder et al., 2020; Ministry of Transport and Local Government, 2019-2020). Further amalgamation is considered necessary, on the state's part, in order to strengthen the local government level and to prepare it for receiving additional powers from the national level. For that transfer of responsibility to be viable, municipalities need to be seen to be sustainable service and operating units (Ministry of Transport and Local Government, 2017).

7.3. Disunity on municipal amalgamations

Not all agree with the rationale behind the declared necessity of further municipal mergers, or population requirements for services. There is a question about whether a particular number of inhabitants should decide whether a municipality is a sustainable unit or not. At the same time, others would argue that a line must be drawn somewhere. Although not envisioned in this report,

it is impossible to ignore discussions about amalgamations when writing about cooperation on service provision between municipalities in a sparsely populated region like the Westfjords.

This subject is both sensitive and controversial, as a resolution from the Association of Municipalities in the Westfjords has confirmed. The resolution was adopted at a regional conference in autumn 2019. It urged national authorities to respect the municipalities' right of self-determination (Association of Municipalities in the Westfjords, 2019). However, the decision to submit an objection was only agreed by a narrow majority participating in the regional conference. Those who disagreed wanted to leave the matter to each municipality including the chairman of the Association – suggesting that it would be better to spend time working on potential collaborative projects (RÚV, 2019). This does not so much demonstrate a clear division between 'unificationists' and those opposed to unification, as much as the controversial nature of the discussion as a whole. For that reason, this contentious issue still has the potential to stand in the way of progress in other areas of cooperation.

Residents and councillors in Bolungarvík are generally opposed to amalgamation. When the proposed las was announced the town council responded by developing an action plan entitled Bolungarvík 1000+. The plan aimed to increase the population above the minimum of 1,000, with the precise purpose of avoiding a forced municipal merger. This action plan, entitled Bolungarvík 1000+, was drawn up precisely with the purpose of avoiding a forced municipal merger. In fact, the population has been around 950 for the last few years, so at least 50 more people are needed before 2026 when (and if) the new legislation takes effect. The action plan has three main pillars for supporting a population increase. The first is to provide more housing – a fundamental precondition, since there is a shortage of available homes. This also involves building a new kindergarten, supporting innovation and support establishment of new companies (RÚV, 2019). The local authority in Bolungarvík commissioned a residential survey prior to the introduction of the planned law about amalgamations in the Westfjords by the Minister of Transport and Local Government. This survey indicated that only 4% of respondents said they would vote for a merger, while 93% said they would vote against. A further 3% said they would not vote at all. An interesting outcome from this survey was that the youngest group, those aged 18-29 years, were the most negative towards amalgamation, while the most senior group, 68+, was far less negative (MMR,2019).

7.4. Extensive collaboration across the Westfjords

The degree of municipal cooperation in Iceland varies by region, and each area has specific characteristics (Jóhannsson et al., 2016). All-in-all, collaboration between municipalities in the Westfjords is quite extensive. It can be linked to how small the population is in many communities, which makes it essential to cooperate within the region, or within each transport area (Jóhannsson et al., 2016). Collaboration agreements are the most common form of collaboration in the Westfjords, often based on what is possible or economically feasible dependent on transport and geographical conditions.

In general, introducing a third level of governance is not considered to be beneficial for the area, with 86% opposing this in the Westfjords residential survey. Instead, half the participants in the survey favoured increasing the Regional Association's role. Even so, some believe that municipal cooperation is problematic, leaving it unclear who holds which responsibility. Equally, some see it as a democratic way of providing services (Jóhannsson et al., 2016). The other point of view, however, is that municipal cooperation projects can skew democracy, because elected representatives entrust tasks to others: that is, to people who have not been directly elected by a popular vote.

The **Westfjords Regional Development Office (Vestfjarðarstofa)** is a prominent cooperation platform for the region as a whole. Its office supports innovation and development across the region, and it advocates for regional interests through administration, marketing, coordination, cooperation and dialogue. It is a self-governing agency, established in December 2017. At that time it took over projects for which the Westfjords Business Development Agency and the Westfjords Municipal Association had previously been responsible. Westfjords Market Bureau

and the Westfjords Cultural Representative are also part of its operations. Vestfjarðstofa works closely with municipalities across the regions, as well as with research institutes, universities, companies, and entrepreneurs involved in different projects. The governing board of the agency is composed of nine members. Five of them come from local government, and four from the region's business and cultural sectors (Vestfjarðastofa, n. d.).

The reinforcement and strengthening of Vestfjarðarstofa as an agency has arisen from the national government's request for a 'one-stop-shop' in each region. By strengthening the regional unit, more projects than those which appear in the regional development plan are outlined as being suitable to be handed over by the state. The model for this is Austurbrú, in the eastern part of Iceland. It was the first regional platform to use this format and it has proved a successful. Setting up a single unit instead of three smaller ones creates synergies and fresh opportunities for working on a broader range of issues more extensive assignments (Interview: Sigríður Kristjánsdóttir).

All healthcare through one unit

The Westfjords Healthcare Institute is an essential social element in the region. Iceland has a tax-based, state-run healthcare system, which is mostly publicly funded. There are seven healthcare regions financed through the annual national budget. The system covers all residents, with a largely integrated purchaser-provider relationship (European Commission, 2019).

The Westfjords Healthcare Institute began to come together when six different units merged in 1998 – including health clinics, nursing homes and a hospital (Dagur, 1998). This merger took place after the opening of the Vestfjarðagöng tunnels in 1996. Further unification took place when the healthcare institutes in Bolungarvík merged into the unit at the beginning of 2009, following a directive from the Minister of Health. The aim was to increase and strengthen services, and make better use of knowledge and health professionals and to improve operational efficiency. The merger occurred while tunnels between the two settlements were under construction. Later, other healthcare centres in the region merged into this unit, including nursing homes (which are usually run by municipalities or private foundations). This latter merger took place despite difficulties with road transport between the southern and the northern parts of the region.

The Minister of Health appoints a CEO for the healthcare institute, and operates an executive board alongside him/her. Despite being state-run, the law specifies that the director and the board "shall endeavour to inform local authorities and users of the service in the area of their institution's activities and to consult with them as necessary" (Health Care Act no. 40/2007; Regulation on the merging of healthcare institutions).

Operating all healthcare services in the region through one institute allows for continuity. It facilitates a range of interconnections, which the director considers important in general, and which demanding situations like the COVID-19 pandemic generate. The challenge in areas with small populations, like the Westfjords, lies in maintaining services in peripheral regions, and in finding the appropriate operational structure: one that is sustainable and accessible. Since the healthcare institutes in Bolungarvík and Ísafjörður merged, access to healthcare in Ísafjörður has increased significantly. A nurse was employed in Bolungarvík at the beginning, and a doctor was on-site two days a week. With the advent of the tunnels, the need for a dedicated doctor on standby in Bolungarvík disappeared. Attendance decreased, and the doctor's presence was limited to appointments, while still providing a service at the site. The limited service provided in Bolungarvík can often lead to accompanied visits to Ísafjörður – for example for blood analysis, x-rays, or to the pharmacy (Interviews: Gylfi Ólafsson, Hörður Högnason).

The two new nursing homes, Berg in Bolungarvík and Eyri in Ísafjörður, opened in 2015 and 2016 respectively. Having a nursing home in each settlement is considered vital for enabling older people to live the last part of their lives at in their home area. Midwives and childbirth services are, however, only available in Ísafjörður. If a pregnancy involves complications, this requires travelling around 460 km to Reykjavík in time to give birth. There are also daily flights between Ísafjörður and Reykjavík, unless they are cancelled due to bad weather.

The services provided by the Westfjords Healthcare Institute sometimes overlap or coincide with related services provided by the municipalities. That is the case with social services, home care for the elderly, and services for chronically sick children. In these cases, it is essential to harmonise the services involved, in order to avoid duplication, but also to enable the recipient to get the most out of the services. In a region that consists of many small villages it is impossible to provide specialised services in every settlement. A special course has been offered to residents in Westfjords, so as to enable them to respond to the dangers that can occur when roads are impassable due to avalanches and emergency occurs. The course helps them to act as first-responders until paramedics arrive. If prioritizing is needed for the course, Bolungurvík has a relatively low ranking since the fear of being trapped vanished with the tunnel's advent, because of the nursing home staffed with trained healthcare workers and because of staff members of the institute as a whole residing the in the town.

Elderly care.
Photo: Unsplash

The fire department, ambulance service, and rescue teams

The Fire Department in Ísafjarðarbær provides another essential aspect of overall health provision, an ambulance service for Ísafjarðarbær municipality and for Bolungarvík. Previously, the fire department in each municipality provided ambulance services in its own area. However, in 2011, the contract with the Fire Department in Bolungarvík was terminated and transferred to Ísafjörður (Víkari, 2011). Even so, there is a special fire brigade in Bolungarvík, and a merger is not in sight.

Rescue teams play a vital role in the Westfjords, as elsewhere in Iceland. According to Kakez et al. (2018), this public service is an excellent example of co-management, with civil society organisations often working with both public and private actors. In this case, rescue teams frequently work with the police, with the health authorities, and with the civil protection authorities. These independent associations have an extensive role in prevention and rescue work in Iceland, where thousands of volunteers dedicate time to rescue teams under the umbrella of ICE-SAR (Icelandic Association for Search and Rescue). Although these rescue teams provide a public service, they are dependent upon donations and voluntary work, rather than government funding. There are many different rescue teams in the Westfjords, including in small villages, and

they tend to have a different focus. Therefore, can interest above residency determine which rescue team people are interested in joining. In Ísafjörður there is considerable focus on sea rescue; while in Hnífsdalur, for example, the emphasis is more on mountain rescue. When needed, the different teams can work together, combining their expertise and altruism when accidents and natural disasters strike.

Social services

Until the end of December 2019, Bolungarvík and Súðavík municipalities cooperated on social services and had a joint director. This partnership involved counselling, organising support for families, short-term placements, rehabilitation, and care assistants. However, Súðavík has now terminated the contract with Bolungarvík, and has decided to cooperate with Ísafjarðarbær instead (Interview: Jón Páll Hreinsson). The Child Protection Committee is run jointly by all three municipalities in the northern Westfjords, because the law requires that the total municipal population underpinning each Child Protection Committee must be at least 1,500(Act 2002, no.80).

Services for disabled people were transferred from the national government to the municipalities in 2011. This is the most extensive such transfer of responsibility since the grade schools were moved over to the municipalities in 1996. In practical terms, the country is divided into eight service units, with a minimum population of 8,000 for each. The Westfjords count as one unit and operate through BsVest, a regional association created especially for this purpose. The service is financed through local taxation and additional financial resources from the Municipal Equalisation Fund.[8] BsVest distributes resources according to the service provided. The service for disabled people includes various resources, such as short-term placements, residential resorts, rehabilitation, etc. The bulk of these services is provided by Ísafjarðarbær and paid for through BsVest. Jón Páll Hreinsson, the Mayor of Bolungarvík, says that the authorities in Bolungarvík are generally pleased with the service provided for disabled people by Ísafjarðarbær, but also criticises some shortcomings in information about operations and budget.

Service for disabled people.
Photo: Unsplash.com

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8. The role of Municipal Equalisation Fund, or Jöfnunarsjóður Sveitarfélaga, is to equalise the different expenditure needs and tax revenues of municipalities, with contributions coming from the fund on the basis of legal provisions, regulations and work rules established for the fund's activities.

Ports in fierce competition

The fishing industry is the backbone of the Westfjords, despite several changes in the sector and job losses in recent decades. Regardless of cooperation in various fields, the ports are not in any kind of partnership. The interest at stake is great, and the competition is fierce. Aquaculture, offshore fishing, cruise ships, small boat fishing and algae calcium harvesting are all different ocean-based industries. It could be argued that collaboration would be beneficial for the region's overall interests, focusing on specialisation – since different types of ocean-based activities are ongoing or in the pipeline for development.

Some fear that competition and lack of collaboration might lead local authorities to over-invest and undercut each other when ensuring their community the best pieces. However, it can be challenging to establish cooperation based on everyone's different terms and requirements – especially in Iceland, where power asymmetries are prevalent, with the larger partner being naturally dominant. How this will turn out in the end is yet to be seen, but there is little evidence that collaboration is on the horizon. One argument against cooperation in this important field is that it would inhibit competition. This is based on the belief that competition is always healthy, and that specialisation will take place anyway. For instance, Bolungarvík, which is closer to the fishing grounds, is a major harbour for demersal fishing, and a place where life revolves around the seafood industry. On the other hand, Ísafjörður has been the largest port in in the area for cruise ships.

Schools and education

In Iceland, municipalities are responsible for the overall organisation of compulsory schooling, and must cooperate with secondary schools in the region (Act no.91, 2008). The secondary schools are, however, the national government's responsibility. Cooperation between municipalities at the compulsory schooling level is practically non-existent. Principals from the schools in Ísafjarðarbær and Bolungarvík used to have a consultation platform for coordination and exchanges of experience. Bolungarvík, however, withdrew from these monthly meetings when Ísafjarðarbær started to charge for the costs involved in hosting these meetings (Interview: Jón Páll Hreinsson).

One secondary school in the Westfjords, Menntaskólinn á Ísafirði (MÍ), offers both vocational education and academic educations. The school mostly attracts students from the northern part of the Westfjords for on-site studies. Poor transport, especially in the winter, has not encouraged attendance from the southern part of the region. Instead, many choose to go to the secondary school in Grundarfjörður, which is located in a different region but has a branch in the southern Westfjords. Only academic studies are on the curriculum there. According to the principal of MÍ, this is the factor that has led to a situation where few from the southern region have completed vocational training. This in turn has produced a shortage of skilled workers there. The principal hopes to see this change with the opening of Dýrafjarðargöng in autumn 2020.
Distance learning came into focus in MÍ when the number of students sank to around 300. Today the number of students is 460, with 200 studying online. Due to the development of distance learning, teachers found themselves well-prepared when COVID-19 struck, and teaching in all secondary schools had to be limited to distance learning only (Interview: Jón Reynir Sigurvinsson).

Even though MÍ is a school for the whole region, and especially for the northern part, the tunnels have changed people's transport possibilities. Before Bolungarvíkurgöng opened, students in MÍ coming from Bolungarvík lived in a dormitory on site, whereas today all of them are able to live at home. "The tunnels are first and foremost a safety issue. The road was so dangerous. I remember back in the '90s when I had to get a rescue boat to pick up students from Bolungarvík to take a test. Today, this would have been resolved digitally," says Jón Reynir. He notes that the dormitory is now used, among other things, for international students in the University Centre of the Westfjords. The University Centre hosts Master's programmes in coastal and maritime education, and its facilities are available for all university students in the region (University

Centre of the Westfjords, n.d.).

An audit report from 2015 concluded that cooperation between MÍ and compulsory schooling in the northern Westfjords depended largely upon individuals and their interests (Elíasdóttir et al., 2015). Jón Reynir confirms that this is still the case and that cooperation has been left on the backburner. Reynir believes that increased collaboration would be beneficial in terms of improving teaching methods, assessments, and the overlap between different school levels. Closer cooperation between the schools in the region could also help counteract the high dropout rate in secondary schools. MÍ arranges for a study counsellor to visit schools before the oldest cohort graduates from compulsory schooling; but helping students at an earlier stage would also help them find a suitable educational pathway, according to Jón Reynir.

Kids at school.
Photo: Unsplash.com

Northern Westfjords: a single cultural area

In many ways, the northern Westfjors function as a single cultural area, with the annual music festival Aldrei fór ég suður (I never went south[9]) being one of the highlights. It was combined with the skiing week around Easter, something that had attracted a specific group for decades. Adding the music festival into the skiing week broadened and changed the demographic of the group of people visiting the area. New visitors, mainly young people, exposed the popular myth that you can barely travel to the region during winter without having specially equipped cars for the trip. Instead, young people travel in whatever vehicles they have available. This has worked for the most part, showing that the Westfjords are actually accessible to people in all seasons.

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9.   'I never went south' (or Aldrei fór ég suður) refers to those who stayed behind, while others went to the Reykjavík urban area, searching for opportunities. A famous song with this title was written in the 1980s, by Bubbi Mortens, and has been popular ever since. The initiator of the music festival, Mugison, has also performed – together with Bubbi – a song with similar theme, called 'Þorpið' ('The village').

Mýrarboltinn (or the mud football competition) has become an established festival.
Photo: Páll Önundarson.

Other events are also attracting people to the region, such as the annual mud football competition (Mýrarboltinn), which has been played both in Ísafjörður and Bolungarvík. Ísafjarðarbær, Bolungarvíkurkaupstaður, and Súðavíkuhreppur together run a folk museum, Byggðasafn Vestfjarða, located in Ísafjörður. Each municipality appoints one person to its board, following a municipal election. The Westfjords Iceland Nature Research Centre (Náttúrustofa Vestfjarðar), located in Bolungarvík, is run in cooperation with municipalities in the southern part of the region. Up until now, Bolugnarvík and Ísafjörður have held an alternative festival for the last day of Christmas on 6 January each year. However, Ísafjörður is possibly going to withdraw from this arrangement.

"Þrettándinn" is a festival for the last day of Christmas, on 6 January.
Photo: Páll Önundarson

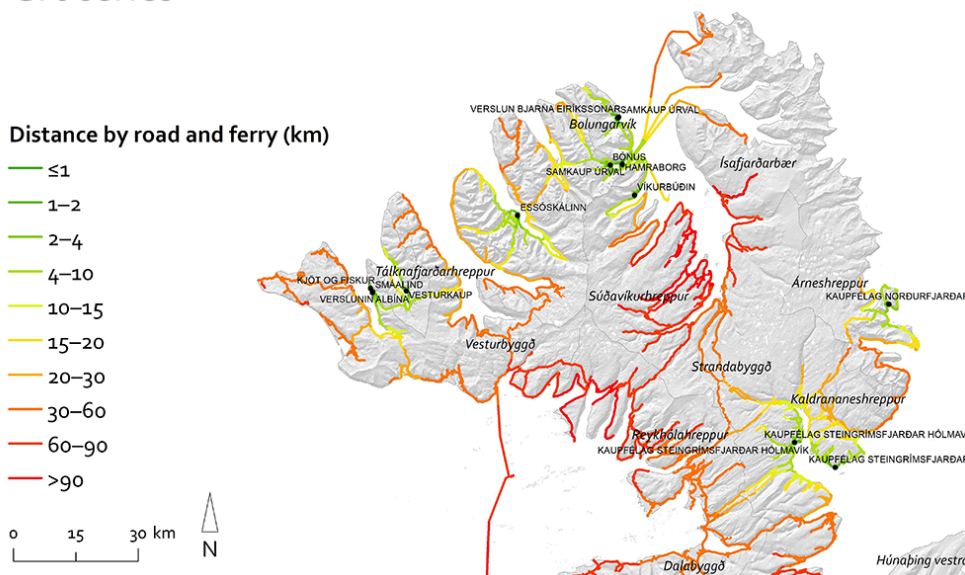## One area in terms of sports and leisure activities

There is considerable collaboration in terms of sports and leisure activities in the northern Westfjords. The tunnels have undoubtedly had an impact on this collaboration between the two municipalities of Bolungarvík and Ísafjörður. A bus is now run five times a day between the towns, for children and young people to be able to practice. A bus like this is not operated between other settlements. However, other solutions, such as subsidising car-pooling, helping parents with the costs of driving their children to practice. This cooperation can pave the way for much more viable sports and leisure activities. Most settlements in the Westfjords are too small to bring together a full team for many team sports. Collaboration of this kind can perhaps be valuable in counteracting depopulation, too, and in increasing the attractiveness of the region. For many, an active sports scene is an important factor when choosing where to settle and live (Interview: Sigríður Kristjánsdóttir; Kull et al., 2020). "This is about having the freedom to do what you want, and it also applies to children," says Sigríður Kristjánsdóttir, adding that exercising together also reduces the rivalry between towns – which in turn plays a part in making the area feel more integrated.

The initiative for the school bus came from Bolungarvík, and Ísafjarðarbær was immediately willing to join in and share the costs (Interview: Jón Páll Hreinsson). This collaboration on sports has been highly successful. It promotes a better utilisation of sports facilities on both sides of the tunnel. Other examples of collaboration that should be mentioned here include those involving swimming pools and skiing areas. The swimming pool in Bolungarvík has better facilities and faces the sun more directly than the one in Ísafjörður, while the skiing area in Ísafjörður is the better equipped one. A cooperation agreement is in force between the two municipalities, so that residents in Ísafjörður who have an annual card for the pool in Ísafjörður also get access to the one in Bolungarvík. An arrangement works the other way around regarding the skiing area in Ísafjörður (Slides from a meeting between municipalities in March 2017).

Other services

Essential and private services, such as banking and a pharmacy, were once on-site. They created a few jobs, but these have now disappeared. The bank had been in Bolungarvík for 112 years, but closed in summer 2020, when it merged with the branch in Ísafjörður (Bæjarins Besta, 2020). Some of these services have been made redundant as a result of new technology and automation, changes that are hard to resist. For example, bank branches have closed in many places across the country. Either that, or the number of full-time positions has been reduced significantly, due to the correspondingly reduced need for on-site personal customer services.

Groceries

Distance by road and ferry (km)

- ≤1
- 1–2
- 2–4
- 4–10
- 10–15
- 15–20
- 20–30
- 30–60
- 60–90
- >90

0   15   30 km
N

Map 8. Distance to travel to pick up groceries in the Westfjords.
Cartographer: Oskar Penje, Nordregio

Two stores sell groceries in Bolungarvík – Kjörbúðin, which has all the daily necessities, and Bjarnabúð, which has groceries, giftware, clothing and more. Despite this, many people drive to Ísafjörður, where there are discount stores for larger purchases. Next to the discount store is a Polish store with various foods, which naturally attracts residents of Polish origin from the whole region. The unique product range in Bjarnabúð also draws customers from Ísafjörður, showing that the flow can be in both directions.

Another solution adopted for service delivery involves contracts with the private sector. Both Bolungurvík and Ísafjarðarbær manage waste management through contracts with private companies, for example. The smaller municipality, Bolungarvík, also arranges other services through public sector actors. This includes maintenance of public spaces, road maintenance, the cleaning of drains and septic tanks, and spatial planning.

One labour market area due to the tunnels

The tunnels to Bolungarvík have made a profound difference in the Northern Westfjords. So have the older tunnels from Ísafjörður to Flateyri and Suðureyri. Most important is the improvement in traffic safety, and the fact that routes between these settlements are now open all year round, with only a few exceptions. That is important for the transportation of both people and goods. Nearly 20,000 tons of fish are transported annually through the tunnels from the fishing company, Jakob Valgeir, in Bolungarvík. The bulk is shipped to international markets from Ísafjörður harbour (Interview: Guðbjartur Frostason). Another fast-growing company, Arna dairy production, gets milk delivered for processing, and then its products are transported back to market. This involves around 200 tons of produce weekly. Sigurður Mikaelsson, Purchasing Manager at Arna, says that the tunnels' existence was an important factor when choosing its location. The availability of housing was also important, as was the mostly empty old shrimp factory. Since the company was established in 2013, it has been fast growing (Interview: Sigurður Mikaelsson).

The option of free transport makes the northern Westfjords one coherent labour market area. The road from Súðavík to Ísafjörður remains, however. This is still considered dangerous, and

residents in Súðavík village are therefore advocating for tunnels as a solution. At the same time, it is evident that the opportunities to live anywhere within an area become much greater when poor transport systems no longer restrict choice. Workplaces, services, leisure opportunities and other facilities are now within reach most days of the year for the majority of people living in the northern Westfjords. In this respect, the tunnel is a key element in the local area.

7.5. Northern Wesfjords functions as one community

The region functions like one community because of the two tunnels (Vestfjarðagöng and Bolungarvíkurgöng), even though everyone has their own hometown. Some interviewees talked about changes that are a little difficult to pinpoint exactly, but can be 'felt in the air', so to speak. One is a feeling that people are not worrying about being able to get back home in time these days. As one interviewee who provides a service in Ísafjörður said: "I believe the tunnels are revolutionary. People are not hesitant to travel between places daily, but it used to be a huge stress factor during winter and before the tunnel" (Harpa Kristjánsdóttir, the director of the Vocational Rehabilitation Centre).

Rivalry and competition between municipalities is typical in Iceland, and this has also been the case in the Westfjords. However, according to participants, this rivalry has faded with the arrival of the tunnels, making the settlement one coherent area. This is linked with the mixing made possible by sports activities, something richly supported by the leisure bus making five trips a day to facilitate training. These regular contacts, in which the two communities (Ísafjörður and Bolungarvík) come together for sports practice several days a week, has increased the sense of connection. The swimming pool is also an important contact point, directing the traffic to Bolungarvík, which has the better pool. This is seen as an additional quality-of-life factor in Iceland. The pools are meeting places where people can socialise, work-out and unwind.

Some believe that with the tunnels, improved transportoverall and continued cooperation and collaboration, the area can become more integrated and even make municipal mergers possible. Others are less optimistic and have less faith in the outcome of a merger. They do not believe that it is the best solution for smaller municipalities, even though it can be challenging to provide statutory services in such places. The Mayor of Bolungarvík, Jón Páll Hreinsson, points to Flateyri and other settlements that have problems, despite being merged with other larger municipalities. He also names towns and villages involved in a special project run by the Icelandic Regional Development Institute to aid vulnerable settlements.

Others disagree with this interpretation. They note that some smaller villages would technically be bankrupt if they had not merged with larger municipalities. One such merger advocate is Halldór Halldórsson, former chair of the Icelandic Association of Local Authorities and former Mayor of Ísafjörður. He points out that streets in Flateyri are well maintained, and that services such as schools are mostly available on-site. He also notes that the council office with one employee in the smaller settlements was discontinued, because most people stopped using the service and tended to drive to Ísafjörður instead. However, while believing that larger units are more cost-effective, he does not believe that forced mergers are they way forward.

7.6. Challenges and accomplishments in cooperation

As Eythorsson et al. (2018) state, the primary driver behind cooperation in delivering public services is the lack of capacity and resources at the municipal level. This applies to the Westfjords, where collaboration and shared services are evident in various transport areas. The level of collaboration varies, of course. Different solutions have been put in place, recognising that service delivery depends upon the nature of the service concerned and the type of agreement that is appropriate. Where the national government is responsible, as in healthcare,

the operation has been merged under one umbrella for the whole region. In some instances, the state also compels the collaborative approach needed in places where population requirements are attached to the delivery of particular services, such as those provided for disabled people, and the municipal Child Protection Committees. At the same time, there is limited collaboration on public services for which the municipalities are responsible, such as social services; or between the primary schools.

Nevertheless, further efforts are being made to strengthen cooperation. Vestfjarðastofa provides a prominent platform for the Westfjords region, working closely with the municipalities on shared interests by promoting discussion, and creating trust between different actors. Vestfjarðarstofa concentrates on keeping the dialogue going to increase trust between different actors as they respond to requests from the government and labour market for a collective approach across the region. To serve that purpose, Vestfjarðarstofa also needs to stand outside the arena of conflict if and when a dispute arise, particularly where a prominent topic in the debate is municipal amalgamation.

The director, Sigríður Kristjánsdóttir, emphasises the importance of the whole region focussing on working together to manage and develop primary production within its boundaries. She says that the area faces significant opportunities, but also has to catch up with the fourth wave of industrialisation, in order to make the most of it and not be left behind. This involves strengthening telecommunications and the electricity grid. Improving transport facilities has been a clear focus in recent decades, and there is still a need for further improvement. However, more is required in the modern world, in order to meet competition from other regions. Improved transportation and increased transport links between different areas have created a foundation for closer cooperation. However, the four-year terms for local government do not always go hand in hand with creating a shared, long-term vision. The director of Vestfjarðarstofa points out that many also find it hard to trust long-term plans, because their own experience suggests otherwise.

Looking at the services and activities that involve active participation by local people, cooperation seems to work well. The two tunnels in northern Westfjords, Bolungarvíkurgöng and Vestfjarðargöng, have increased the level of social interaction between residents in the area, for example. Bolungarvíkurgöng has improved the transport between the Bolungarvík and Ísafjarðarbær, and people now have more shared meeting places and daily connections than was the case before. Adults and children meet for sports training, in stores, in swimming pools, and at a variety of cultural activities. Ísafjörður and Bolungarvík act as a single labour market, single residential area and single community, with all the necessary services in place – albeit provided indifferent ways.

Considerable collaboration on services is taking place in the northern Westfjors. Due to the limited population, more cost-effective solutions and better synergies can surely be achieved by working even more closely together. However, the fear of losing independence and control needs to be noted and addressed. This will entail sensitivity on the part of the larger party. That might involve convincing the other party that the intention is not a takeover, but genuine collaboration.

7.7. Interview list

1. Sigríður Kristjánsdóttir, Director of Vestfjarðarstofa.
2. Guðbjartur Flosason, Production Manager at Jakob Valgeir (fishing company).
3. Gylfi Ólafsson, Director of Westfjords Healthcare Institute (Hvest).
4. Halldór Halldórsson, Former Chairman of the Icelandic Association of Local Authorities, and a former Mayor of Ísafjörður.
5. Jón Reynir Sigurvinsson, Principal of Menntaskólinn á Ísafirði.
6. Harpa Kristjánsdóttir, Director of the Vocational Rehabilitation Centre.
7. Jón Páll Hreinsson, Mayor of Bolungarvík.
8. Hörður Högnason, Director of Nursing at Wesfjords Healthcare Institute (Hvest).
9. Sigurður Mikaelsson, Purchase manager at Jakob Valgeir.

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Rogaland, Norway. Photo: Unsplash.com

8. Norway: HentMeg ("Pick Me Up") - The potential for microtransit services across small- and medium-sized cities in Norway

By Diana Huynh, 2020

8.1. Introduction: Public transport in Norway

This case study looks at the provision of a mobility service called HentMeg in small towns and medium-sized cities in Norway. HentMeg roughly translates as 'Pick Me Up', and is an on-demand microtransit service.[10] This type of microtransit mobility service provision has the potential to improve the daily transportation experiences of targeted demographic groups in municipalities with sparse populations or limited public transport options. The service became the first of its kind in Scandinavia when launched in Sauda municipality in mid-2018. HentMeg was well received by the local people right away and has expanded across five counties in Norway.

In considering the experiences of two municipalities that have used HentMeg in particular, this case study aims to highlight how multilevel collaboration and social innovation has contributed to the relative success of this microtransit service. At the same time, the study also points toward areas that can further facilitate its uptake across the country, providing observations of the key enablers, the drivers, and the challenges involved in collaborating on HentMeg.

Provision of public transit and mobility services at the regional level

In Norway, the management of public transport is primarily divided between the state and the county (fylkeskommunen). In certain sectors, such as education, the municipality coordinates with the county to arrange local school buses, covered by the municipal budgets, although this

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10. According to SAE International, a standardised definition of microtransit has been proposed in the *Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies* (2018). Microtransit is defined as a privately or publicly operated, technology-enabled transportation service which typically uses passenger shuttles or vans to provide on-demand or fixed-schedule services, with either dynamic or fixed routing.

may vary among counties (Samferdselsdepartementet, 2019). Each governance level has different roles in providing the necessary infrastructure, mobility planning and purchase of public transport services. The state has overall responsibility for the country's transport policy and framework conditions, as well as for national roads and railway networks. The counties are each responsible for managing local public transport, primarily through mobility and transportation agencies (Ibid., 2019).

Given the different geographies and demographic makeup of Norway's eleven counties, mobility and transportation services fulfil different needs in various parts of the country. In the largest cities, buses and railways are essential to provide practical and well-functioning mobility flows. In the rural areas however, private cars continue to be dominant, given sparser populations and physical distances between public services such as health care facilities, schools, and other cultural amenities. Traditionally, much emphasis has been placed on the technical provision of public transportation services, but at the regional and municipal level, this is changing. Attention is increasingly being dedicated to identifying local demands, market needs, customer insights and sustainable solutions in line with the green transition and national transportation priorities. While this study will primarily consider the collaborative aspects of HentMeg, it can be said that the provision of mobility services in Norway is, in many ways, fundamentally 'competitive'. Norway is covered by the EU Public Transport Regulation, which provides the legal basis for organising local public transport. The main EUPTR rule is that services must be put out to tender.

Innovation and technology part of future mobility and low-emissions solutions

In recent years, there has been a growth in the use of public transportation in Norway. In 2016, 666 million passengers used public transit, rising to 718 million in 2019 (Statistics Norway, 2020a). The growth in public transport is in part a result of a political agenda that has been followed up with budget allocations and policies for the sector. The National Transport Plan 2018-2029 (NTP) prioritises providing better accessibility for people and goods throughout the country (Samferdselsdepartmentet, 2018). To achieve this, 'advanced' mobility has been identified as an important focus area. Despite increased financial allocations for the transport sector overall, accessibility problems affecting the transportation of goods and people remain (Ibid., 2018). In short, there is a lack of adequate access – and not just the provision of public transportation – throughout the country.

At the same time, to ensure that the need for accessible mobility options for most of the population is met, there is a focus on the implementation of new technology, and innovations such as real-time information services. The digitalisation of services is already well underway, recognising that the transport users of the future will demand more attractive and comprehensive transport and information services than those available today (Samferdseldepartementet, 2020). There are three different ways this can be achieved: through good transport systems; effective spatial planning or improving digital access. However, integrated planning and implementation across all three of these areas is important for achieving the optimal outcome. In addition, how much the counties must pay for public transport services varies, both according to how much public transport is purchased and the price per unit of this transport (Grønstad, 2019). In the period between 2010 and 2017, per unit prices and the volume purchased both increased significantly (Ibid., 2019).

8.2. Case studies Microtransit services in Sauda, Rogaland and Bodø, Nordland

HentMeg is operated by mobility and transportation agencies managed by counties across Norway. Currently, the service has been launched in five municipalities operated by individual agencies: Sauda, Rogaland (Kolumbus), Bodø, Nordland (Reis Nordland), Bø, Telemark and Vestfold (Farte), Kongsberg, Viken (Brakar), and Odda, Vestlandet (Skyss). This study focuses primarily on Sauda and Bodø, which have both demonstrated nimble roll-outs and a robust uptake of the microtransit service. While Bodø is considered urban, it is more sparsely populated than most medium-sized cities in the country, and service provision for public transport is comparatively limited. As an example of a low-density, medium-sized city offering a transit service specifically targeted at elderly people, Bodø is a reflection of the different contexts in which HentMeg has been deployed – broadening the scope of how microtransit and smart mobility services are approached, as well as indicating the limitations and opportunities this may present for collaborative governance and social innovation. How much do population density and rurality affect the impact of the service? Is the success of HentMeg largely placed-based, according to how resources and capacity vary, or do other aspects matter more? In both cases, the way HentMeg has been managed reflects a willingness to adopt innovative solutions. It also involves the need to develop agile collaboration processes among stakeholders. Overall, these two cases stood out as good examples, not least because of a positive reception from local passengers using the service.

To provide some context, Sauda is a small town in Rogaland, in the west of Norway, with a population of 4,475. With nine inhabitants per km² and 2,323 registered vehicles, it is evident that the local community relies heavily on cars as the main mode of transportation (Statistics Norway, 2020b).

Sauda municipality, population 4,475, in the west of Norway.
Photo: Kolumbus AS

430 people in Sauda commute to work in other municipalities, and 13.3% of the student population use transport services provided by the municipality (Ibid., 2020). Kolumbus, previously known as Rogaland Kollektivtrafikk (Rogaland Public Transports), is the mobility and transportation agency owned by Rogaland county. One of the largest in Norway, it was the result of a merger between several transportation providers. It does not operate transportation, but awards Public Service Obligation (PSO) contracts to independent operators. In short,

Kolumbus is responsible for planning and administering operations, including the tendering processes and procurement of transportation and mobility services. This in turn is provided by an open market mechanism – including bus companies, drivers and developers. The overall service goal for Kolumbus, including in places such as Sauda, is to contribute to the Nullvekstmålet, the national zero-growth target (Kolumbus, 2020).

Bodø is a medium-sized city in northern Norway and is home to 52,397 people. The population density of Bodø is also relatively sparse, with just 40 inhabitants per km². While Bodø is urbanised in comparison to Sauda, Rogaland as a county is still more densely populated than Nordland county (Nordland fylkeskommune, 2020 & Rogaland fylkeskommune, 2020).

In 2019, 2,326 people commuted to work in another municipality and, in turn, 3,272 people commuted to the city for work. However, it is not clear what percentage of these commuter groups used public transportation. Some 6.9% of students use transport services provided by the municipality. This is a free-of-charge service that students must apply to use. Meanwhile, there are 25,712 registered cars in Bodø, a proportion quite similar to Sauda, suggesting that cars are also the dominant mode of transportation here (Statistics Norway, 2020c). In Bodø, Nordland county facilitates and manages all public transportation under Reis Nordland. Transport is operated by different providers and includes bus and ferry services. As a county, Nordland has previous experience in tailoring rural mobility solutions. This came about with the launch of Distriktsmobil Vevelstad, an ordering service serving one route between Adalsvågen – Vistnes, premised on similar needs to those of Sauda (Vevelstad municipality, 2020). Similarly, DistriktsTaxi Vega is a collaboration between Vega municipality, Vega Volunteer Centre, the taxi association in Vega, and Nordland county. It offers rides to events, specifically targeting young people and the elderly.

8.3. Main drivers behind HentMeg

HentMeg was first launched in Sauda, the result of a collaboration between technology company Spare Labs Inc (Spare), Geta (a digital design agency) and Kolumbus, after the technology company won a bid announced by the latter. This collaboration was a coincidence in the sense that it came down to choosing the best proposed solution. Kolumbus made an autonomous decision, formally structured around the procurement processes required of the national transportation system. The solution arrived at has enabled other municipalities to adopt HentMeg quickly, while also making it easy for passengers to order and use the service. HentMeg can be ordered by phone or via the service's website. The cost for a ticket is the same as for local public transportation in the county and is paid for via a regular app, e.g. one operated by Kolumbus in the case of Sauda.

HentMeg was a good fit for Sauda in 2018 because the municipality had struggled with lack of demand on one of its local bus route for some time. The routes were adjusted on an ad hoc basis, according to individual travel patterns. However, there was little to no allocated budget for service upgrades. This, in turn, failed to spark any incentive to change the inefficient, costly and under-utilised bus routes. Kolumbus was left with a choice of either paying for services that did not have sufficient passengers or cutting it out entirely. What it really needed was a solution suited to the local context; HentMeg allowed for an inefficient fixed-route line to be replaced by customised, demand-responsive systems. Over time, this enabled new ways of thinking about the opportunities for future public transport services in the region.
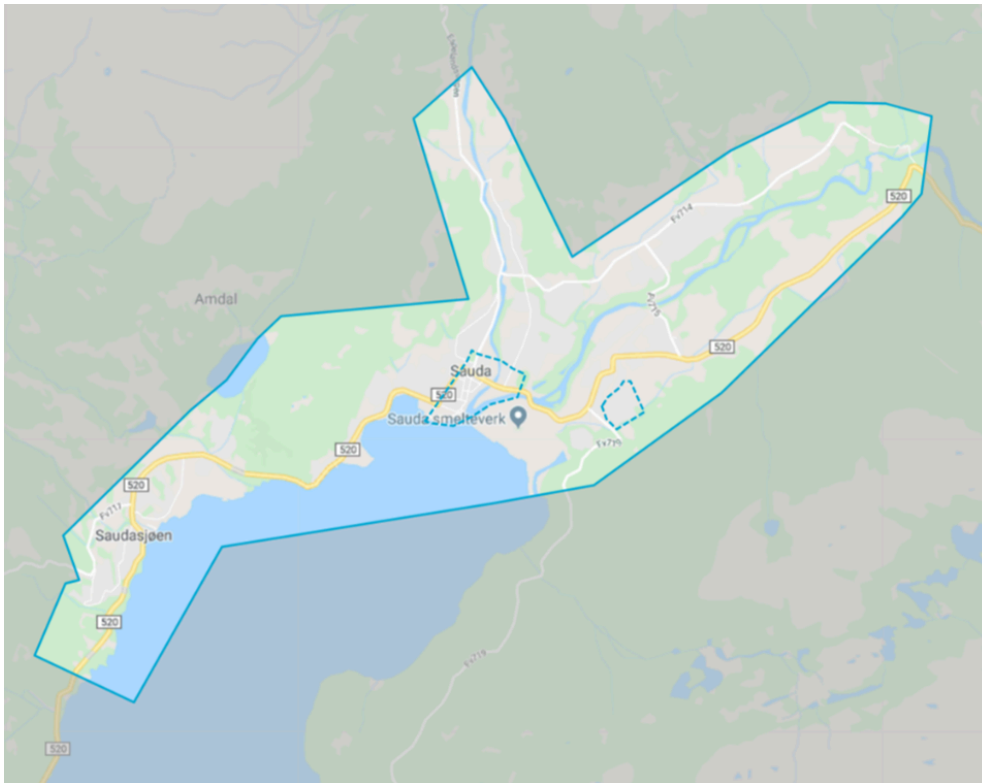
The area where HentMeg operates in Sauda. All public transportation companies that offer HentMeg have a designated webpage with clear instructions on how to use it. Despite various counties and companies managing the service and different target groups.
Source: Kolumbus AS

HentMeg picks up in Bodø

Following the positive reception in Sauda, Nordland county was interested in adopting the experimental service. At the initiative of an individual employee, HentMeg in Bodø was launched in early 2020 (Interview, 2020). In Bodø, the HentMeg collaboration involving Reis Nordland (the county's transportation services) and the municipality emerged as part of a wider city development dialogue organised by Bodø Bylab, an initiative that focuses on co-creation and public participation, coordinating collaboration across seven different departments – in addition to bringing in other, external stakeholders. Before launching the service, it was important for the municipality to gain insight into how HentMeg could serve the elderly.

User involvement became an important part of the roll-out, identifying both needs and potential obstacles for the targeted group. Eventually, after the meetings with 'eldrerådet' in Bodø, a pilot was begun. As with Sauda, Bodø had identified particular challenges with one of its service lines – namely Line 9, an additional service route that was not part of public transportation service. The route targeted access for the elderly; but despite three daily departures, it was costly to operate, which made HentMeg an ideal replacement.

Involvement of the users was important since the county and municipality were uncertain about how well it would be received. Identifying how to meet local transportation and mobility needs for people who depend on it daily became an experiment for HentMeg in Bodø. Since launching, the service has collected feedback. The relative few questions and customer outreach indicate that the service has run smoothly most of the time. During the pandemic, there has been a reduction in user numbers, but half of the regular passengers have continued to use the service, where one dedicated vehicle transports about 20-30 people per day.

This service is popular with people who do not own a car.
Photo: Kolumbus AS.

HentMeg is not a service implemented in Bodø because the county needed to see a return on investment. In fact, because the county subcontracts affiliated transport companies for the purpose of ordering the service via telephone (for instance), it incurs additional costs. While HentMeg works in Bodø, the municipality and Nordland county has no formal agreement when it comes to the operation of HentMeg in itself. The pilot is now expiring at the end of the year, with the possibility of being extended into 'Smartere Transport Bodø', a new initiative focused on future mobility and transportation. Nevertheless, Bodø expands our understanding of the provision of public transportation services, showing that while enhancing accessibility may seem like a small intervention, it is an important factor for social change and development. Without upgrading the efficiency of Line 9, passengers might have experienced increased isolation and a lack of spatial mobility in Bodø over time.

Map covering all the locations HentMeg serves in Bodø municipality.
Source: Google/ReisNordland

8.4. Key enablers and factors supporting success

Against the backdrop of how HentMeg started in Sauda and Bodø, the ways in which counties oversee the provision of public transportation comes into focus. The collaboration can be considered an informal approach in many ways because it ultimately depends upon the capacity of the county and the resources made available to sign onto HentMeg. The service has been adopted by individual agencies, largely based on looking at the practical experiences of other places. Some key issues related to institutional, financial, legislative and sector-specific concerns are identified in the study. Reflecting on these can further enable the provision of a public service such as HentMeg.

Public transportation in rural areas: Regional bottom-up and top-down approaches

In the case of Sauda, Kolumbus had been a frontrunner for a while in terms of how it had envisioned the future of mobility not just in the municipality, but in the entire county of Rogaland. As a result, when there was a need to make changes to the bus service in Sauda, Kolumbus was open to new solutions and saw an opportunity in the technology behind HentMeg. Similarly, Bodø also sees the process as having been largely driven from the bottom up. It recognised that the willingness to provide better mobility and transportation services has been driven by individuals at regional and local levels, rather than coming from national policies or action plans. What both places share in common is the recognition of a need, and having the ability to work towards a solution that ended up proving to be both innovative and suited to the local context, at least given the current scale on which HentMeg operate. The urban-rural discrepancy seems to matter less in launching this service, but a closer analysis of the dynamics between levels of governance may offer different views on this.

The role of local media reporting seems to have been valuable for the HentMeg expansion process. Most online searches referencing the service a short time after its launch highlighted articles featuring positive coverage of its provision to the local community. This suggests that

more public communication and marketing is perhaps needed around HentMeg – and it seems that the bottom-up approach to sharing the success levels of the service has been helping. Over time, more formalised knowledge sharing between counties and municipalities will be important for the replication of HentMeg across the country.

User-friendly service and interface

HentMeg is a novel way of thinking about and using local public transport. Especially for those living outside big cities in rural areas, ordering transportation online and boarding a minibus at the agreed time (all for the price of a regular bus ticket) has not previously an option provided by local transportation services. While the concept exists in many forms, new technology allows for service routes to be planned in real time. This means that when passengers order trips, the route is redirected, immediately guaranteeing connections. That the user is picked up either at their door or as close as possible to a given location, is considered a value-added service in itself for many people, in addition to being valued for its attractive pricing. When designed to suit local contexts and well operated, microtransit can be an opportunity to improve transit in mid-to-low density areas or at off-peak hours.

The way HentMeg works is that the algorithms behind the service dynamically match riders in real time, enabling multiple travellers to share a single vehicle while maximising the overall efficiency of the system. An appropriate and well-adapted technology platform enables efficient journeys without lengthy detours (Spare, 2019). This strengthens the notion that technology and data are strong levers for bringing greater value to public transportation systems in rural environments. However, no matter how advanced the technology, what has been decisive for HentMeg's popularity is that it has been easy to order the service and convenient to use for customers in the municipalities where it has been adopted.

Earmarked funding was key

In the broader context of the provision of transportation services, HentMeg has relied on county agencies having resources available. In Sauda, Kolumbus cancelled three of its bus routes and allocated the funds towards implementing HentMeg. As such, it was able to earmark a budget specifically for the purpose of trying out new digital mobility solutions.

In the case of Rogaland, Kolumbus receive 60% of its budget from the county, 30% from ticket revenue and the remaining 10% from other subsidies provided by the national government, which is meant to be geared towards green transition solutions. The latter kind of allocated funding is, generally speaking, made possible by the strategic framework outlined in the National Transportation Plan 2018-2029 – although this is not necessarily specifically targeted towards the provision of a service such as HentMeg (Interview, 2020). For most counties, many tenders are towards 'core services', such as regular bus and boat services, communication, marketing and service centres. In addition to this, there are areas where a company like Kolumbus can procure new innovative services and concepts to strengthen their mobility services offering (Kolumbus AS, 2020).

For small-scale microtransit services such as HentMeg, it may be that earmarked 'lump sums' can act as an effective incentive for counties to collaborate with local municipalities and experiment with innovative solutions. This speaks to the importance of identifying whether municipalities that might want to try adopting similar mobility solutions and technologies have both the policy priorities and budget in place. When HentMeg was launched in Kongsberg, Viken, for instance, the funding structure was different from that of Kolumbus (Interview, 2020).

Similarly, in Bodø, the costs of operating Line 9 were transferred directly to running HentMeg. On a broader level, then, how the service provision is designed and implemented at the local level will be key for services such as HentMeg and its expansion into more municipalities.

The way HentMeg operates today makes it a transportation service that counties adopt not

because it is profitable. The value of HentMeg is to increase public transport coverage, but this is still costly compared to core high frequency fixed-routes services. One could possibly increase the ticket prices to cover some, if not most of the expenses, but in rural areas this might drastically affect the willingness of local passengers to then make use of the on-demand offering (Interview, 2020). As such, more subsidies will be needed if the counties are to experiment with innovative mobility solutions. One positive outcome of this type of collaboration and funding is the potential to meet the expectations of providing affordable and efficient transportation services in an incremental manner.
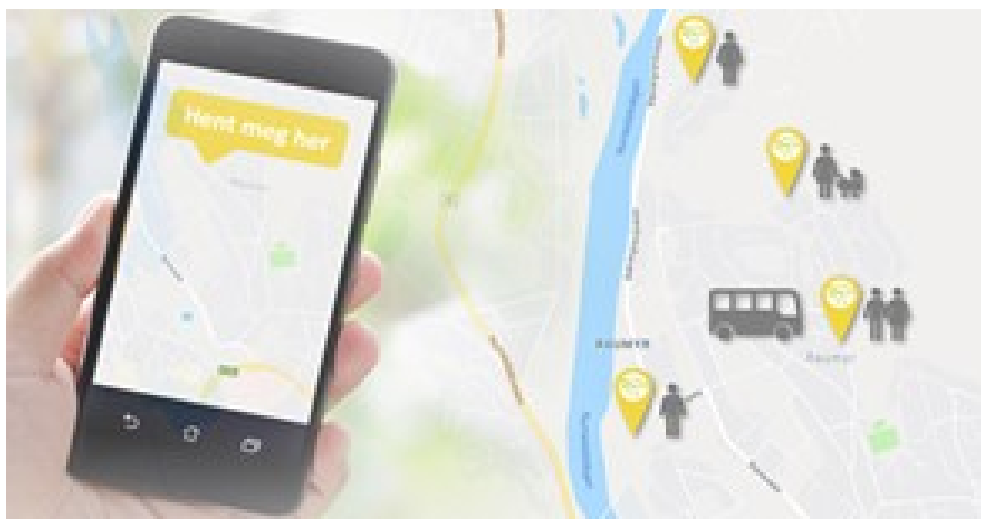
How HentMeg is promoted in Viken, as a door-to-door service provided at the cost of a regular bus ticket.
Source: Viken Fylkeskommune

8.5. Identified challenges

Many of the key enabling factors also present parallel challenges, of course. In general, the main issues identified in both municipalities have been around cross-sectoral collaboration, plus the key competencies required in the transition towards the digitalisation of public service systems as a whole.

Formal organisation of public transportation services

The fact that counties manage, and are responsible for, local public transportation and mobility services means that there are limitations on the impact a service such as HentMeg can have. On a larger scale, it is likely that the need for multilevel coordination will slow down implementation processes. This suggests that the solution could be centralised efforts at the regional level, rather than long, local procurement processes that are both time-consuming and ineffective cost-wise. Nevertheless, while the structure of transportation planning and governance can be decisive, it is not always the make-or-break factor. The key is to maintain a balance: one in which competition can deliver the best solutions, but in which local priorities are clearly communicated and understood among stakeholders. This includes participatory processes in local communities, something that is particularly important in rural areas, where the success of public service delivery can affect the overall development of the municipality.

Leveraging technology and coordinating digital competencies and transitions

In many cases, technological and digital advances within mobility services are further ahead than the capacity of local county administrations and their public agencies to absorb them into existing systems. During conversations with the case-study municipalities, it was evident that approaches to new digital solutions often fell short when it came to handling cross-sectoral approaches. They were still operating in divided, silo-like systems. This was identified as a significant obstacle, and a better balance needs to be struck. It is a matter of how to meet strategic and political objectives while also managing the digital skills required to adopt and implement innovative solutions and new forms of collaboration.

For example, when HentMeg was launched, collaboration was mainly between the transportation and mobility agencies and Spare, or the county and the municipality, but seldom between the tech company and the local administration and/or municipal representatives responsible for transportation and mobility. Even if the municipalities do not have a formal responsibility for public transport, there is reason to see the value of engaging stakeholder at the municipal level. This could be a missed opportunity to enhance local understanding and competency needed to adopt and coordinate the service, aspects that were addressed in interviews with the case-study municipalities. There was no clear reason why municipalities adopted different approaches to make the service work locally, but a downside of this could be that it leads to varying results and ultimately impact on the user experience of HentMeg.

Ultimately, a place-based understanding of the decision-making processes and procurement structures will be needed by relevant contact persons in the municipalities. Other common denominators include strengthening data analytics, building awareness, and monitoring pilots – as well as bringing together dedicated human resources. It is also key that municipalities are equipped with the skills to quickly identify the ways in which a given mobility service simply works better than the alternatives. To effectively reduce the reliance on personal vehicle usage, having just one alternative, such as HentMeg, will not be enough. There needs to be a range of options, including on-demand, fixed-route, bikes, even shared cars, all in line with the local context. There will be costs related to the transition to alternative solutions, but prospects of long-term sustainability will hopefully be a driver.

The other side of this is to consider the less favourable aspects of on-demand transit services like HentMeg replacing permanent services. What are the implications? The digitalisation of public services as a whole face challenges, including sustaining job opportunities but also ensuring building capacity around new competencies and skills. As with any new system, executive-level support is essential, but new technology solutions allow for improved efficiency and quality of service, which will be important to a municipality's long-term sustainability and growth.

Municipal differences, but common obstacles at the local level

Transportation agencies have an important mission in balancing national priorities with local needs, while simultaneously identifying the uptake capacity of innovative, sustainable solutions that work for individual municipalities. To achieve this, increased multilevel coordination is required, plus cross-sectoral efforts to strengthen innovative public transportation solutions and services in small- and medium-sized municipalities. At the same time, the places grappling with these dynamics are part of much larger structural processes. Take Bodø, for instance, which is experiencing large city challenges at a smaller scale, making efficient allocation of resources even more important (Interview, 2020). In short, there are challenges and knowledge-gaps across multiple domains that must be quickly and effectively addressed and quickly adapted to.

As mentioned, the forms of collaboration have been different in every municipality. Each has its own budget and agenda for meeting local mobility demands. In the case of HentMeg, the demonstrative capacity of 'best practice' has seemed to be a factor in counties choosing to adopt the service. That a place like Sauda ended up being a frontrunner, suggests a keen motivation to adopt innovative solutions compared to other places that were more risk averse

and did not see the same potential of new technology to transform the provision of local mobility services.

More horizontal and vertical knowledge sharing between counties and municipalities will be important, as well as broader communication of user experiences and ongoing challenges. Here, Kolumbus has in fact had a key role, in guiding places like Nordland county how to better adopt digital tools and innovative mobility solutions. Local news media reporting has been an asset, making more people aware of the success of HentMeg, but this needs to be formalised among stakeholders. Targeting marketing towards decision-makers could be an area in which greater effort needs to be concentrated.

The way the transportation system is managed at the county level can present challenges for some municipalities in identifying specific needs. Current municipal systems are frequently inefficient because the reality is that each sector in need of a transportation service (e.g. health services or education) employs its own mobility solutions and service provider. This too is often ineffective in terms of cost, and usually requires someone with mobility expertise and who also understands the sectoral needs to coordinate – a capacity small municipalities do not always have readily available. It might be relevant to look to how the FlexDenmark system works, where government subsidies are organised by the transit agencies. However, what is encouraging is that HentMeg has been piloted in these local communities, suggesting that this is an ongoing process of 'learning by doing'.

Administrative costs and governance structures

It is evident that the procurement model for companies owned by the counties presents some challenges since vehicles and manpower are constantly being procured and purchased. This can lead to poor utilisation of resources. In the long run, that is both unprofitable and unsustainable. In addition, while the number of people using public transport has increased over the years, so has the cost-per-unit involved in operating mobility and transportation services (Grønstad, 2019). This means that the county municipalities spend even more money on the purchase of public transport than before. In this context, it would be relevant to analyse further what a service like HentMeg costs over time, compared to other existing services – given that it serves district areas in small and medium-sized cities with slightly different traffic dynamics and commuter patterns. To ensure effective competition in the areas of public transport services that are put out to tender, it is necessary to be aware of various factors that have an anti-competitive effect on the design of the contract. This is not necessarily evident in HentMeg, but it is important to acknowledge that the forced competition that currently exists can lead to reductions in the quality of service provision, as well as lack of development and sustainability because of the need to maintain or increase revenue.

Overall, the challenges involved in launching a microtransit service such as HentMeg should not be underestimated. A weak link in any area of implementation can make the service less convenient than intended, detracting from its underlying viability as a result. So the processes involved need to be well integrated, operating in ways that truly improve travel patterns in the local context.

HentMeg has so far demonstrated that new vehicle technology does not have to be more costly than current, conventional solutions. Further subsidies will be needed to meet local needs as well as the costs incurred when building capacity for new innovative solutions, strengthening collaborative measures among counties, municipalities, procured contractors, local communities and other stakeholders.

"Pick me up", but not anywhere

While it has served local communities effectively so far, a microtransit service like HentMeg is not necessarily the best mobility solution for all places. On the one hand, it can re-energise public transportation in rural areas. On the other, it needs to complement existing services; otherwise it will merely displace the traditional system, providing more convenient trips and taking passengers away. This produces inefficiency overall, as can be quickly noticed in rural areas. The key here is accessibility and sustainability, ensuring that an adequate service is offered to the whole community, designed to enhance social equity by providing public transport solutions at an affordable price, and facilitating access to jobs, resources and other amenities in rural or mid-density areas.

In general, these issues were also reflected in conversations with the case-study municipalities. For Kolumbus, in Rogaland, the goal is not about expanding HentMeg everywhere but providing the best public transportation service possible in order to meet local needs. In Bø, Telemark, HentMeg replaced the fixed route bus service and as a result ended up having perhaps too many users, which is not suitable for an on-demand driven system. Nevertheless, the microtransit service remains a relevant concept in Bø. But for Kongsberg, the service was, as in Bodø, targeted at the elderly population. Overall, HentMeg has demonstrated collaborative flexibility in adapting to local needs and processes. However, increased coordination between counties and municipalities, along with interregional collaboration, is something that can further support the decision-making required to find the best long-term solutions – and the greenest ones, too.

HentMeg has also been launched in larger cities like Oslo, in collaboration with Viken county's mobility agency, Ruter. The service is called Ruter Aldersvennlig Transport, targeting specifically the elderly community with the goal to provide the service in most of Oslo in 2021. The differences between large and small cities are that people who do not own a car need to be offered an accessible transport option. The case in Oslo is however also an example that on-demand transit is still important for people who cannot easily access fixed route public transport.

Nevertheless, the need for HentMeg is almost the opposite in urban and rural areas. In urban settings, it is more effective when tailored to sectoral needs, given that city-wide public transit systems are already well-established. Nevertheless, it is vital for local and regional development that local communities are offered accessible, affordable and sustainable services. For many municipalities, it will probably be challenging to meet all the different expectations for service provision when the population is so sparsely populated as it is in rural areas, or because public transport provision remains significantly limited. Moreover, as was emphasised in our interviews, overall HentMeg only serves a small part of the population using public transportation in the counties. Therefore, while HentMeg proves that microtransit services can make a positive difference to the daily lives of many people, on their own they do not solve the bigger picture challenges within the sector – including making public transportation services as widespread as possible.

8.6. Upscaling and replication potential

HentMeg was one of the first public, real-time, transit-ordering services ever launched. It did so to national as well as international attention. Having started in rural Sauda, the service has since been rolled out to four other counties (and counting) within a period of just two years. The approach to service provision and the technology behind HentMeg is perceived to be both innovative and well-suited to particular local contexts. HentMeg can enable cities and transportation operators to plan, launch, operate and analyse new mobility services quickly and effectively, including integrated on-demand and fixed-route transit systems.

HentMeg has demonstrated potential for replication in many small- and medium-sized cities in Norway, and probably for other Nordic countries as well. HentMeg can help transportation authorities to manage mobility networks and services more efficiently, and can also enable

multimodal trip planning. In order to scale and replicate, however, there needs to be coordination across sectors – such as school transport, transport for the physically disabled, health care related services, etc. To this end, what best-practice lessons can be learned and recommendations made for replication and upscaling?

This is a recent HentMeg pilot for Gjesdal municipality in 2020, in collaboration with Kolumbus.
Photo: Sagaproject.eu

In an ideal context, overseeing all of the mobility services for all age groups, sectors and the local geography in small and rural municipalities should be coordinated as one single unit. Not thinking about these types of mergers and cross-collaborations could be expensive for the municipalities in the long term. Cooperative approaches also have the potential to contribute to sustainability goals and to a zero-emission future: something that is becoming more and more important for public services at all levels of governance. More data collection will be needed to inform evidence-based decisions, too. In both Sauda and Bodø, some information had already been collected at the aggregate level, but a formal monitoring service (as such) had not been established there. Moreover, securing additional resources and engaging in capacity building needs to happen at the regional level. Much of the coordination could, and already does, take place independent of the municipality's involvement. However, as Bodø has demonstrated, early user-involvement is important for better understanding the needs of the local community.

While HentMeg might not be the solution for all municipalities, most places can still think innovatively about mobility collaboration and adopting other sustainable services, such as bike and car-sharing services. If anything, HentMeg has provided evidence of the fact that piloting this type of service does work. It shows that value-creation around practical use is real, and hence it paves the way for other, similar transportation services to emerge in the near future.

This future, in fact, is not that far away – seeing as how, in autumn 2020, the Norwegian Ministry of Local Government and Modernization (Kommunal- og moderniserings-departementet) launched a new biennial network initiative looking at smart mobility. The purpose of this initiative is to promote new solutions for public transport and personal mobility in rural parts of Norway. In this context, smart mobility is about transporting people and goods from one place to another based on new, innovative, and sustainable methods. The network aims to collect experiences from the various pilots and experiments and promote good practice among each of the participating regional authorities. Relevant stakeholders are also involved, resulting in a total of 30 participants in the network. This new initiative is supported by

researchers, who will provide knowledge along the way, and convey experiences to and from Norway. At the national level, then, it seems that HentMeg can both inform practical responses and encourage potential pilots through this type of network.

8.7. Conclusion: HentMeg – collaborative governance in practice?

HentMeg is an example of how collaborative governance can work in the provision of small-scale microtransit services in small and medium-sized cities. The adoption of these service from one county to another has relied on the efforts (often at the level of individuals) of public transportation companies, working in collaboration with technological solutions, and in varying degrees directly with a municipality administration.

The recognition of how important it is to work towards providing people with adequate mobility services recurred in our interviews, and also in the wider research. HentMeg therefore has a great deal of potential for expanding further, but in order to do so, a greater degree of location-based approaches to the provision of mobility services will be required to ensure that there is a good balance and fit regarding competencies and expertise – both regarding technical operations and also governance. HentMeg was developed with the public sector in mind, but it was not specifically tailored to the Nordic context. This means that the service allows room for adaptation, as needed, needed across the Nordic countries. It might very well be directly replicable in other European contexts. However, the Nordic context presents a unique opportunity because it is comparatively small. This, in turn, means that the market share is not large from the perspective of the developer, but the social impact can be especially significant because of the need to strengthen urban-rural links.

The way public transportation is organised sometimes makes it challenging for the county to work closely with the needs of a given municipality. Does HentMeg solve these problems? For how long does it do so, and at what scale? Social innovation in rural and low-density contexts is a complex concept. This case study can be included in further studies that consider the theoretical implications in the field, but also inform networks that are now strengthening efforts to enhance regional smart mobility networks in rural areas. Our case studies have demonstrated best practice, but this leaves room for thinking about future approaches to collaborative governance – especially when it comes to the demands of reducing the negative environmental impacts of the transportation system at a local, municipal level.

In short, local needs and capacity, combined with user-friendly technology, have been coupled with a financial structure that allows a service like HentMeg to be tried and tested in local communities. Information and knowledge need to be spread more widely. There is substantial potential for centralising efforts at the national level, utilising the newly initiated and dedicated smart mobility network. In parallel, more reporting by local news media and general promotion and outreach (as well as more comprehensive studies of mobility services in even more sparsely populated areas, such as DistriktsMobil Velvelstad), would also be useful. The current transportation system determined at the national level will continue to offer opportunities as well as obstacles, but for now, it is about building reliability in one of the key public services: accessible local mobility and transportation options.

8.8. Interview list

1. Kristoffer Vik Hansen, CEO & Co-founder, SpareLabs.Spare Labs Inc
2. Audun Solheim, Strategy and development Director, Kolumbus AS.
3. Silje Munkvold, Advisor, Bodø ByLab, Bodø kommune.
4. Martin Sandtrøen, Advisor public transportation, Nordland Fylkeskommune.

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Sweden. Photo: Unsplash.com

9. Sweden: #fulltäckning - Collaboration and innovative solutions for improved mobile coverage in rural areas in Sweden

By Elin Cedergren, 2020

9.1. Introduction

Digitalisation is a key tenet for rural development in the Nordic Region, with the potential for ensuring access to services, technology and information – despite geographical distances (Randall et al., 2020). Digital connectivity is an essential aspect of this. It not only addresses fixed broadband solutions in households, but it also addresses the mobile network and mobile coverage. Mobile access is increasingly considered as important as fixed broadband solutions throughout the Nordic countries. Despite the fast pace of development in the deployment of new technologies and the further extension of mobile coverage, households and businesses in rural and sparsely populated areas still risk being left out.

This case study addresses mobile coverage in Sweden's northernmost regions, Norrbotten and Västerbotten, through the lens of the collaboration project #fulltäckning ("full coverage") Even though mobile coverage is considered extensive in Sweden, there are still areas where it is, to varying degrees, poor – especially in rural and sparsely populated areas (Ingman & Tibbling, 2019). Poor access mobile to services in rural areas is a considerable hindrance for citizens and businesses alike. It prevents them from fully reaping the benefits of digitalisation and access to public services – two features of modern life which remain central for full participation in society these days.

The #fulltäckning project started in 2016. It addresses digital exclusion by increasing mobile coverage in rural areas across Sweden – operating through case studies and working with partners in both Västerbotten and Norrbotten. The project aims to act as a catalyst or stepping-stone for a new way of approaching solutions to mobile coverage problems in rural areas. This includes integrating their technological solutions, governance, and economic and social aspects. The project has involved academia, industry, regional authorities and sectoral associations with knowledge of technology. It deals with market mechanisms related to mobile networks and

services, regional and local preconditions and needs in terms of digitalisation and mobile services, as well as key rural sectors affected by unreliable mobile services. Given that mobile network expansion is market-based in Sweden, #fulltäckning has addressed potential ways of collaborating through a multi-stakeholder platform with broad competences in technology and IT, digitalisation strategies, and sectoral and local knowledge. It has been able to find ways of improving mobile coverage and advocating for improved rural integration and perspectives in policy design and national frameworks. For Region Norrbotten and Region Västerbotten, collaborating in projects like #fulltäckning is a way into addressing mobile network and coverage challenges, highlighting needs, and establishing policy priorities based on hands-on requirements and solutions.

9.2. A national strategy for mobile coverage in Sweden

The Swedish Government's broadband strategy, 'A Completely Connected Sweden by 2025', was adopted in 2016 and is based on the vision of a completely connected Sweden. The strategy also includes targets for reliable and high-quality mobile services. It stresses that that
"by the year 2023, all of Sweden should have access to reliable, high-quality mobile services".

However, all of Sweden is defined in terms of "areas where people and things usually find themselves, since the areas lacking coverage via cellular masts at the moment are exclusively in desolate places, such as unpopulated mountainous areas" (Government Offices of Sweden, 2017, p. 6).

This definition entails areas such as those outside households or offices, or on a bus or train (ibid., 2017). The national agency, the Swedish Post and Telecom Authority (PTS) is responsible for the implementation of this strategy. According to PTS, 96% of the land surface included in the target will have access to stable, mobile services of good quality by 2023. This highlights the fact that there are still gaps remaining in rural and sparsely populated areas, where most likely there will not be any form of extensive new commercial development by 2023 (Wigren et al., 2020). The geographical limits of the 2023 target also mean excluding vast rural areas that still populated or are essential for industries and sectors dependent on accessibility to mobile services, such as forestry and outdoor tourism.

According to the PTS, the surface coverage for all mobile operators providing access to 10 Mbt/s for mobile phones in the whole of Sweden was 82% in 2019. Gaps are most evident in the northern inland parts of the country (Map 9).
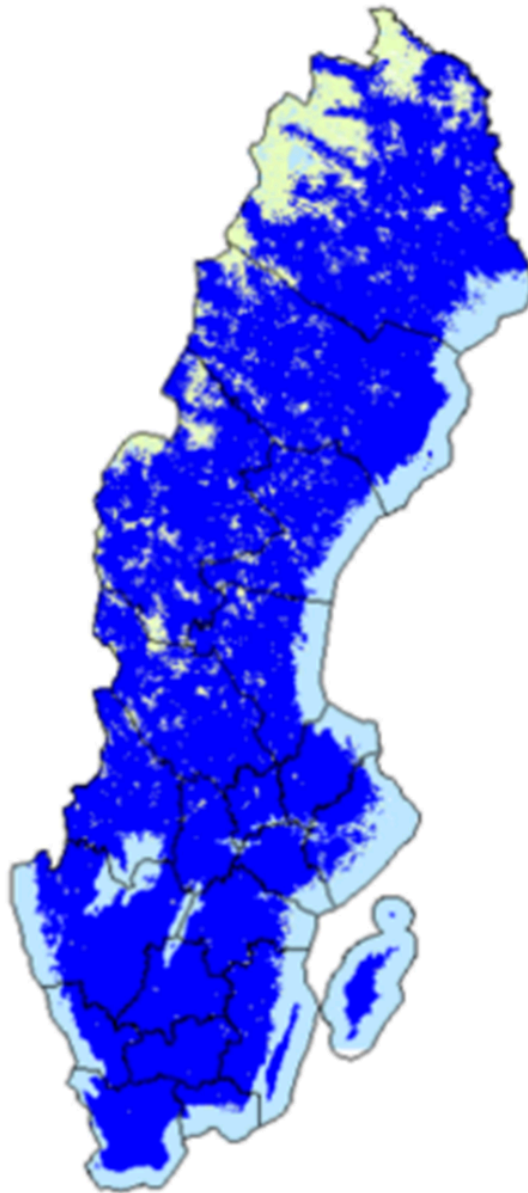
Map 9. Total surface area coverage providing access to 10 Mbit/s for mobile phones in Sweden, 2019.[11]
Source: Höglund, 2020

The Swedish Broadband Strategy broadly rests on market-driven development as its starting-point, complemented by public sector efforts. A key challenge is to incentivise investments by mobile network operators in sparsely populated areas. This requires coordination and joint endeavour across levels of governance. However, there are currently no national subsidy mechanisms in place for improving mobile service infrastructure or coverage. Municipalities and regions have an important role in facilitating coordination, local advocacy work, the

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11. This map includes the aggregated surface coverage provided from all available mobile operators in the mapped areas (Ingman & Tibbling, 2019b). The light green colour illustrates areas that are not covered by access to 10 Mbit/s for mobile phones.

identification of requirements, and potential transmitter locations. Integrating national mobile services targets for 2023 into municipal and rural strategies and plans is going to be crucial. Other potential solutions include co-funding of masts by the public sector (Höglund, 2020).

Mobile mast.
Photo: Pixabay

Box 6. Infrastructure for mobile coverage

The most common infrastructure for providing mobile services and broadband in Sweden is mobile networks. These generally offer good surface coverage and a high degree of expansion capacity, especially in urban areas. There is also strong technological development in this area, not least through the deployment of fifth-generation wireless (5G). However, at the same time, there is a lack of expansion and capacity development for mobile services in rural and sparsely populated areas – where mobile operators argue that the expansion rate in has gone as far as is commercially viable in a rural environment (Höglund, 2020). Lack of coverage and mobile services capacity in rural areas remains especially urgent considering current and future advancements of digitalisation of services and industries requiring increased capacity (Randall et al., 2019). There are also other types of infrastructure and solutions complementary to the larger public mobile networks available today. Rural networks, or rural hotspots, are examples of these. They can be used in areas where coverage is lacking, or where signals from public mobile networks are poor. Broadly speaking, these solutions entail local wireless networks established (for example) in a residence, at a farm, or in a tourist facility. Examples of rural hotspot solutions will be described further below. These are implemented as test pilots as part of the #fulltäckning project across the regions of Norrbotten and Västerbotten.

9.3. Case study regions: Västerbotten and Norrbotten

Norrbotten, located in the northernmost part of Sweden, is the largest county by surface area, covering a quarter of the country. It has a population of approximately 250,000 in 14 municipalities. The population density is 2.6 inhabitants per km^2 (Statistics Sweden, 2019a). Density varies considerably within the region – with greater sparsity in inland municipalities, compared with coastal ones along the Bay of Bothnia. The region is rich in natural resources and has a strong emphasis on forestry, mining and energy industries. These also constitute a large proportion of Sweden's national GDP Other key industries and sectors include tourism, reindeer

husbandry, agriculture, public administration and manufacturing (OECD, 2016).

Västerbotten, bordering on Norrbotten, is Sweden's second-largest county by area. It has 15 municipalities and a population of approximately 271,700. The population density is 5 inhabitants per km2 (Statistics Sweden, 2019b). The landscape is characterised by vast forests, mountains and lakes, as well as a coastline facing the Bay of Bothnia. Key sectors in the region include mining, hydropower, wood and forestry, and reindeer husbandry, as well as tourism and hospitality. Key challenges for service provision in Västerbotten arise from large intra-regional differences and the sparsity of the population in rural areas. Almost half of the total population resides in the regional centre of Umeå, located along the coast in the western part of the region (OECD, 2016; Regionfakta, 2020b).

Mobile coverage in Västerbotten and Norrbotten

In both Norrbotten and Västerbotten, there are large distances to navigate between homes and points of service – that is, distances to and from schools, healthcare facilities, food stores, and other community services (Länsstyrelsen Norrbotten, 2014; Region Västerbotten, 2014; 2013). Digitalisation is an increasingly important part of service provision in the regions. The key industrial sectors across these regions are increasingly digitalised, and ever-more dependent upon access to the Internet and GPS solutions. Since the expansion of mobile coverage is market-driven, both Region Norrbotten and Region Västerbotten highlight the need for advocacy work to improve the conditions for an expansion of the mobile IT infrastructure in the regions. This is a key action area (Region Västerbotten, 2013; Region Norrbotten, 2019). The figure below shows surface coverage in Västerbotten and Norrbotten counties. It is considerably lower in Norrbotten. The vast distances between the mobile operators' masts is a key obstacle to coverage in rural and sparsely populated areas, as is particularly evident in Norrbotten (Marklund et al., 2019).

Surface coverage for mobile broadband and mobile telephony (2019)	Norrbotten county	Västerbotten county
Mobile broadband:		
1 Mbit/s via HSPA* or LTE**	69.86%	89.73%
1 Mbit/s via HSPA or LTE (excl. 450 MHz)	63.87%	82.81%
10 Mbit/s via HSPA or LTE	69.74%	89.65%
10 Mbit/s via HSPA or LTE (excl. 450 MHz)	63.65%	82.58%
30 Mbit/s via LTE	3.51%	6.33%
Mobile telephony:		
Mobile telephony via GSM*** or HSPA	75.52%	92.69%

* HSPA (High Speed Packet Access) is a third generation (3G) mobile broadband communications technology (Computer Sweden & IDG (n.a.).

** LTE stands for Long Term Evolution, and refers to the technology behind 4G (Computer Sweden & IDG, n.a.).

*** GSM, the Global System for Mobile Communication, is a digital mobile telephone system used globally (Computer Sweden & IDG, n.a.).

Table 9. Surface coverage for mobile broadband and mobile telephony in Norrbotten county and Västerbotten county, 2019.
Source: The Swedish Post and Telecom Authority, 2020.

9.4. #fulltäckning - rural ICT testbed increasing mobile coverage in rural areas

Project design and aims

The #fulltäckning collaboration project connects a variety of actors and acts as a catalyst or stepping-stone for new ways of addressing issues and developing solutions for mobile coverage in rural areas. Through this project, the actors taking part seek to increase mobile coverage in rural and sparsely populated areas through collaboration, test pilots, and the development of local technological and societal solutions for improved mobile coverage in Sweden's northernmost counties, Västerbotten and Norrbotten. The project has involved sectoral and public stakeholders with knowledge about the regions, local communities, and key rural sectors which are negatively impacted by lack of fixed wireless broadband or cellular coverage.

The #fulltäckning project focuses on three main challenges:

* Social inclusion, addressing digital exclusion in Swedish rural areas and promoting access to 100 Mbit/s.
* Security, considering the lack of mobile coverage a security issue for residents and tourists in rural and sparsely populated areas.
* Added value, stopping tourism, agriculture, forestry and other industries being hampered in their activities due to the lack of connectivity (Fulltäckning, n.a.).

The project uses both a bottom-up and a top-down approach. The bottom-up approach is designed through technology and testing partly based on solutions in which individuals and/or companies themselves can test technology and add local connectivity to their mobile networks. The top-down approach is designed by mobile operators or government agencies, who are incentivised to add coverage to the mobile network (more on this below). The target group for the project and its outcomes includes the market, the public sector and end-users (Fulltäckning, n.a.).

Working machine in the forestry industry.
Photo: Pikaxay.com

Box 7. #Fulltäckning in short

The #fulltäckning project started in 2016 and comprises of 14 actors and stakeholders including Luleå University of Technology, Lund's University of Technology, Region Västerbotten, Region Norrbotten, the mobile network operators Netmore and Ericson, sector representatives at Akademi Norr, Visita, Swedish Lapland Visitors Board, Federation of Swedish Farmers and finally Arctos Labs, Iteam and Lennox . Luleå University of Technology is the project owner. The project is financed by Vinnova's programme for Challenge-Driven Innovation which has three stages: 1) initiation and jointly developing ideas, 2) collaboration for developing and testing solutions, and 3) implementation (Vinnova, 2020).

Stage two of the programme was carried out between 2018 and 2020, and the project partners have applied for funding for the third stage.

#Fulltäckning activities

Technical strands

The technical strands of the project focus on two key components – rural hotspots and umbrella cells. The concept of rural hotspots is based on a bottom-up approach facilitating individuals and businesses to install technology in the form of 'hotspots', thus adding digital connectivity through equipment placed out at people's homes, at farms, in businesses, in tourism facilities or areas, in other rural industries and in remote areas. Hotspots encompass equipment that picks up and amplifies signals from existing mobile networks, or the setting up of umbrella cells (see description below), alternatively linking them to a fixed or radio-based broadband connection. In picking up these signals, the hotspot can boost capacity and pass signals to and from several mobile operators. Umbrella cells complement the concept with rural hotspots, adding a top-down approach addressing base station upgrades and structural solutions at a larger scale to add coverage and capacity. This concept means that emitting stations are mounted on existing high TV towers (high-power high towers) to create coverage in large areas that would otherwise lack any mobile network access (fulltäckning, n.a.). Complementary solutions have also been tested, such as multi-roaming SIM cards or radio technology that uses a lower frequency band to send smaller amounts of data across larger areas.

Kungsleden, Gällivare. One of the areas where #fulltäckning has tested new solutions, installing a radio hotspot.
Photo: Unsplash.com

Pilot tests in collaboration with local communities

Within the framework of these solutions, the project has tested different approaches to increasing mobile coverage in a variety of locations and to local users spread across the project regions. These have involved local actors in villages, within the agriculture, forestry and tourism sectors, as well as in e-health stations, emergency services and at other industrial sites. Different approaches have been tested through, for example, pilot tests in Vännäs municipality, where #fulltäckning provided a signal amplification solution at a farm, improving Internet access beyond the fixed broadband installed indoors. A pilot test was also carried out in Siksjönäs, Glommerträsk, where foresters tested a multi-roaming SIM card with a national roaming function, making it possible to utilise any mobile operator with coverage in the field. This SIM card was tested by a person working with forest inventories, where efficient mapping procedures require mobile coverage for online maps and GPS solutions far away from roads and settlements. In Övertorneå, where tests were conducted with such SIM cards as well. Another pilot was arranged in Ludvika municipality, where the municipality identified several locations where local people had poor or no mobile coverage. Here, an antenna system was installed in a mast located at a high altitude in order to improve mobile coverage. In Alesjaure, along the popular hiking trail 'Kungsleden', #fulltäckning installed a radio hotspot (base station) on a mountain top, running it on solar cells and batteries. This area is part of the Laeva sameby[12] (sami village), with around 50 cottages in the valley. Apart from being a permanent settlement, this is a popular tourism site for hiking and has an STF hostel. Prior to the test pilot, the area lacked any mobile coverage. The situation was improved significantly when the #fulltäckning technology was installed (Jonsson, 2020).

Advocacy and policy-targeted activities

#Fulltäckning has also been functioning as a platform for working in a more conceptual and policy-oriented way, not least with issues related to the urban-rural digital divide. Within the framework of the project, researchers at the Luleå University of Technology have (among other things) developed a Cellular Coverage Inequality Index (CCI) that shows the differences in mobile coverage between urban and rural areas. The size of the digital gap can be measured through the index, and it is possible to visualise changes over time or to make comparisons across regions and countries (van de Beek & Reje, 2019).

The project partners have also developed potential rural coverage solutions, paying particular attention to the market mechanisms involved and the issue of governance of those mechanisms. Investments in mobile infrastructure and maintenance in rural areas are far more costly and revenues lower compared with urban areas, for instance. A competitive landscape between mobile operators is what evolves quality, but this is not applicable in rural areas. Instead, the level of availability of operators often means that there is one option – or there are several operators, each with poor service. In order to address this, the project partners perceived an opportunity in developing local monopolies: allowing local network operators to be given both licences and support from the national level and from regulators. In conjunction with these solutions, where gaps exist, project partners also emphasised the need to implement national roaming across Sweden, allowing rural users to roam seamlessly between accessible mobile operators, (ibid., 2019; personal communication, 2020).

Other key action areas identified by the #fulltäckning project include the re-use of existing infrastructure, such as TV masts, for enabling less costly solutions in rural areas. If no such infrastructure is available, public-sector investments are necessary. Finally, the project has also identified considerable opportunities for operators to share resources better and to collaborate on infrastructure.

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12.   A sameby or sami village is a complex economic and administrative union within a specific geographical area where its members have the right to engage in reindeer husbandry in this area (Region Norrbotten, 2018).
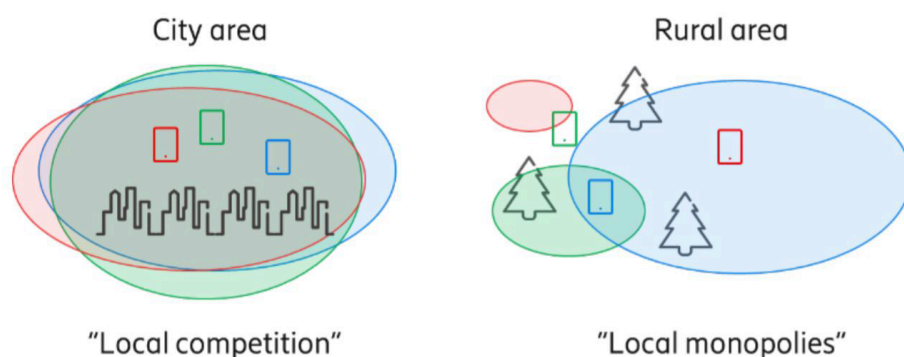
Figure 5. An illustration of local monopolies for mobile networks in rural areas, in comparison with urban areas where there is greater competition between operators.
Source: Trojer, Ragnarsson & van de Beek, 2019.

9.5. Main drivers behind #fulltäckning

Rural coverage – an issue of democracy and regional development

The key drivers behind #fulltäckning are reflected in the notion that the lives of residents in rural areas should not be impaired by lack of mobile coverage. One interviewee elaborated on this, noting that

"development is not moving forward for everyone. #Fulltäckning has focused on the fact that the differences between urban and rural areas are increasing. In some rural areas, developments in digital services have not progressed as far as one would hope, in spite of large investments in broadband and fibre".

(Interview with Karl, 2020).

The challenges of improving mobile coverage in rural and sparsely populated areas are multi-faceted and complex. As a result, the project has not just been about finding adequate technology to improve mobile coverage in such areas but has also involved a multi-disciplinary approach to addressing business models, governance and people. Pooling resources and skills, as well as providing different perspectives on needs and challenges across different spheres of society (researchers, industry, the public sector and sectoral associations and organisations), also proved to be central drivers for the project design. However, one interviewee also highlighted the fact that significant interest in technology and innovation among the individual stakeholders involved was central to engaging effectively in the project. He said that "we wanted to test new techniques to solve societal challenges together, in a broad project group" (Interview with Karl, 2020). The project also provides the regional authorities in Västerbotten and Norrbotten (as well as the municipalities and other public and sectoral groups involved) with a platform for collaborative work to improve mobile coverage in the regions (Fulltäckning, n.a.).

The conditions in Norrbotten and Västerbotten, with their vast landscapes – mountains, forests, and sparsely populated areas – clearly requires innovative solutions to mobile coverage expansion. These need to be ones that include everyone. Another of our interviewees again highlighted the fact that "there are not enough people for it to be a good deal for the operators to expand. The sparsity of settlements in some areas provides a huge challenge – both regarding mobile and fixed broadband facilities" (Eva-Marie, 2020). Related to this, it needs to be recognised that closing the mobile coverage gap in rural areas is not essentially a technical issue. Rather, it is an economic one (Interview with Karl, 2020; Interview with Johan, 2020). Our interviewees emphasised the fact that the driving forces to expand mobile infrastructure and coverage in Sweden are market-based ones, and corresponding economic incentives for mobile network operators to invest in rural or remote areas are therefore weak. This is especially evident

in the northern regions. The interviewees pointed out that there is a considerable discrepancy between the Swedish Government's broadband strategy targets for mobile services by 2023 and the conceptual, geographical delimitation concerning "areas where people and things usually find themselves" (Government Offices of Sweden, 2017) in relation to the regional context and needs in Västerbotten and Norrbotten. One example provided by this interviewee concerned popular tourist routes in mountainous areas not being covered by the government strategy's definition of 'prioritised areas', but still being particularly important from a regional development perspective (Eva-Marie & Jonas, 2020). One of the interviewees went on to say that "mobile coverage is, for example, essential for reindeer husbandry – which is something not taken into account in the government strategy, or among mobile operators" (Interview with Jonas, 2020). This project is, therefore, also regarded as providing an important, informal arena in which to address potential shortcomings in the Swedish national policy environment – not least those regarding the urban-rural digital divide. In this way, it becomes possible both to highlight these issues and to conceptualise concrete suggestions for improving rural mobile coverage.

New approaches to technological and market solutions

For mobile operators, revenue opportunities for new base stations or other new infrastructure are considerably lower in rural areas compared with urban ones. Operating costs are often higher, for example (Wigren, 2020). However, our interviewees argued that the solution to such challenges does not always lie in finding technological solutions, because these are often available. Rather, the key issue is adapting business models and solutions to the conditions that actually apply in rural or remote areas. One interviewee argued, for example, that "fulltäckning can work as a catalyst for demonstrating methods and opportunities in rural areas [which have] not traditionally been used before" (Interview with Eva-Marie, 2020). A representative from one of the mobile operators highlighted opportunities within #fulltäckning to collaborate and work with more heterogeneous and local solutions for mobile coverage. These are solutions that could later be upscaled and taken to the market. Thus, through employing technology that can draw on existing networks, and through strengthening and complementing existing infrastructure (as well as establishing new base stations where needed), it can be seen that solutions do not necessarily have to be very expensive (Interview with Johan; Interview with Karl, 2020).

Kungsleden, Sweden.
Photo: Unsplash.com

9.6. Key enablers supporting success

As mentioned before, #fulltäckning spans across a variety of actors from different spheres of society – research, industry, the public sector and other sectoral associations and organisations. This was considered an important enabling factor – helping people to share, interact with, source and pool information, resources and competencies, both operationally and strategically.

"We represent different functions in this collaboration – academia, public sector, mobile operators and other private businesses, associations and sectors. We reflect and represent different cultures and ways of thinking, and we are steered by different mechanisms regarding regulation and policy. These differences have enriched the project and its process. It is important to meet and to arrange joint learning processes".

(Interview with Karl, 2020).

Through these means, this collaborative venture has also enabled industries to come closer together and to gain an improved understanding of local, regional and rural sectoral stakeholders and their needs. Similarly, close collaboration with mobile operators has been an important enabling factor for accessing adequate technology (and material, skills and networks), and for understanding how market mechanisms apply.

The project's activities have largely been implemented through a bottom-up approach, with participatory testing being used to engage and enable local actors – both businesses and local people. This has helped project participants to draw upon local experiences and local knowledge. The test pilots have also been developed in close proximity to the realities that the project seeks to address. Involving the regions through the work of regional broadband coordinators in Västerbotten and Norrbotten has enabled access to a wider network, as well as political platforms central to communicating the needs involved and disseminating project results. According to our interviewees, this has constituted a strengthened approach to strategic planning, and to providing local pilot users for the solutions which need to be tested. All this, together with involving local municipalities, has been important for the purposes of identifying the key individuals, businesses or locations that need to be involved in testing activities. One of the project partners spelt this out in the following way: "It is important to have people who know the area, both locally and regionally" (Interview with Marie, 2020).

Through developing and testing technological solutions that draw upon already existing infrastructure, the project has been able to develop innovative and well-adapted approaches at a relatively low cost – especially compared to new investments (Interview with Karl, 2020). This project has therefore demonstrated that, because the technology already exists and is readily usable, what is really lacking is better-adapted policy targets and governance of the market for providing mobile coverage, particularly where it is less profitable. This has been a way to lower the entry barriers for finding suitable, and not too expensive, solutions.

9.7. Challenges encountered in the project

The #fulltäckning project has engaged a broad range of actors and stakeholders. Our interviewees stressed that this has been a key prerequisite and enabler for developing new mobile coverage solutions, and for targeting related policies in Sweden and in the European Union (EU). Overall, the collaboration has worked well, although some challenges have emerged in terms of different pre-understandings of the tasks involved, or of expected outcomes from the project. For example, interviewees highlighted the fact that providing mobile coverage in rural areas largely depends upon private market mechanisms. One of them said that balancing public-private dynamics could pose a challenge, because

"it is private sector companies which drive this process, and if the public sector was to take on a bigger role, there is a risk that existing mechanisms and systems would be dislodged... This has been a difficult thing to balance".

(Interview with Karl, 2020).

While #fulltäckning has benefitted from strong coordination between cross-sector stakeholders at a regional and municipal level, there are some remaining challenges in the adaptation of local rural needs to national regulations concerning mobile services and infrastructure. For example, the PTS has set a restriction on the 3.5 GHz band needed to handle large sets of data to 10.2 km from the broadcasting stations. The area in which #fulltäckning operates is defined by long distances and poor infrastructure, in terms of broadcasting towers and access to high locations to broadcast from. Due to this combination of challenges, project activities are affected by full-performance, long-range coverage at its full potential is limited. The test pilots for the project have successfully developed possible means of increasing coverage in cost-efficient ways, but this still requires the ability to broadcast over longer distances in order to be commercially viable (Project final report, 2020: Interviewees).

In relation to the testbeds: the planning for, and procurement of, hardware needed for project activities and testbeds generally means long timespans, requiring a thorough understanding of the needs and prerequisites involved. At the same time, interviewees have highlighted the need to be flexible, and to be capable of adapting to new information – for example, in the development of new technology or unexpected hurdles. The need for both long-term planning and the capacity to adapt at short notice has been identified as a difficult balance to strike.

9.8. Upscaling and potential for replication

Although #fulltäckning has been focused on and operating within Region Västerbotten and Region Norrbotten, the project aims are designed to identify technical solutions and promote market-models and policies tailored for a broader rural context, and to other areas facing similar challenges (Interviews, 200). The project design, based on multi-actor collaboration across academia, industry, regional authorities and sectoral associations and organisations – as well as developing test pilots in close collaboration with local communities – carries the strong potential to be replicated across other regions or municipalities in Sweden. In terms of replication in a wider Nordic context, the particular role for regions or municipalities largely depends on the locus of responsibilities, and the mandate that comes with that, when it comes to coordinating and implementing broadband and mobile services for both people and businesses. In a similar way to Sweden, mobile coverage expansion is largely market-based across the Nordic countries; but the particular responsibilities and roles set out for local and regional authorities may differ. A key aspect to consider here is that #fulltäckning has benefited from a strong research milieu. This is one that specialises in the relevant technological strands and is based in proximity to the local and regional project arena. For regions and municipalities, linking up to these strands can be a strong enabling factor in encouraging potential collaborative ventures aimed at improving rural mobile coverage. Furthermore, in collaboration with a smaller network operator looking at alternative technical and market-based solutions, good area-based knowledge also has the potential to be an important factor when considering how it might be possible to tailor these solutions to local and regional needs.

#Fulltäckning also opens a door to further investigation of how regional and local needs can be taken into consideration in national policymaking aimed at the future development of mobile coverage. With the potential deployment of 5G, the insights and data provided in #fulltäckning could prove very useful for Sweden and for other Nordic countries. It could help them design policies and strategies that better encompass rural needs and challenges. Our interviewees emphasised the importance of having the involvement of stakeholders who know the area of operation, and who are familiar with local and regional preconditions. At the same time, further national coordination, funding and steering mechanisms are vital, too.

As #fulltäckning progresses towards stage three of Vinnova's programme for innovation, its partners will potentially couple their project activities with RAKEL, the national digital radio communication system used by security organisations and rescue services in Sweden. Lack of

coverage in rural northern Sweden is a challenge to the use of RAKEL.[13] This can have disastrous consequences in the event of natural disasters or accidents. The third stage for #fulltäckning will therefore seek to address this particular problem through potential collaboration with the Swedish Transport Administration. The aim will be to find potential synergies across the RAKEL system and commercial mobile networks, as well as utilising technological models developed within the project (interview with Karl; Interview with Johan, 2020). Such a cross-benefit solution is another example of the potential for upscaling this project across other geographical areas. So #fulltäckning will possibly include local municipalities as partners in future project activities, too. Insights from such a potential municipal collaboration could also be fruitful in further promoting ways in which how municipalities can collaborate to address digitalisation from the perspective of mobile coverage.

9.9. Conclusions

Access to a well-functioning mobile broadband connection is essential for thriving rural areas – not least for good service provision, for wellbeing, and for the effective functioning of industries and businesses in regions that depend heavily upon mobile infrastructure and the coverage it provides. In this context, the #fulltäckning project has created a multi-actor platform in the regions of Västerbotten and Norrbotten, enabling collaboration across a broad range of actors and stakeholders. Central to this is initiating and testing solutions to counter the urban-rural mobile coverage divide. #Fulltäckning has, therefore, given visibility to local and regional needs among the rural households, businesses and key sectors in regions encompassed by the project.

The project partners – spanning academia, the regional authorities, industry and sectoral associations – have conducted test pilots in close collaboration with rural communities and small-scale businesses. This has created a better understanding of the mechanisms and policies limiting the development of mobile coverage in rural and sparsely populated areas. The project has, therefore, provided an important platform for development and has demonstrated the availability of hands-on opportunities to improve market deficiencies through innovative and small-scale solutions. Although several ideas and possible solutions have been identified, established technical and national regulatory frameworks for implementing mobile coverage solutions adapted to rural needs has proved to be the main challenge for #fulltäckning overall.

On the other hand, one of the core strengths of #fulltäckning has been this cross-sector collaboration. This is something which has enabled investigation into further investments and policy development – especially targeting the national level, where state subsidies and stronger guidelines are regarded as highly important for incentivising the establishment of new sites and solutions to improve the mobile coverage for local people and businesses in rural areas. These bottom-up solutions have also shown municipalities and regions that there is considerable potential for promoting such solutions to improve rural coverage.

9.10. Interview list

1. Karl Andersson, assistant professor at LTU and acting operations manager at the Centre for Distance Bridging Technology (CDT) – project leader.
2. Eva-Marie Marklund, Regional broadband strategist, Region Västerbotten (project partner).
3. Jonas Tiger, Regional broadband strategist, Region Norrbotten (project partner)
4. Johan Jober, Chief Technology Officer, Netmore (project partner)
5. Jaap van de Beek (personal communication on draft case study), professor at Luleå University of Technology (project partner).

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13. RAKEL covers 95% of the area of Sweden, and lack of coverage is especially evident in the mountains due to lack of base stations or masts. The capacity of the system is at its best in cities and urban areas with more than 2,500 inhabitants (Swedish Civil Contingencies Agency, 2020).

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Nomsos, Norway. Photo: Pixabay.com

10. Sweden-Norway: VälTel – cross-border collaboration for developing and implementing welfare technology

By Elin Cedergren, 2020

10.1. Introduction

Digital solutions for health care and care [14] are increasingly seen as an essential element of service provision across the Nordic Region. The Nordic countries have set ambitious strategies and targets for implementing digital and welfare technology solutions in health care systems. Especially in rural and sparsely-populated areas and regions (ones with an ageing population), digitalisation in health and care can offer the potential to enhance access to health care, with increased flexibility and improved quality, as well as greater efficiency for care providers. While the development of digital services for health and care has progressed, there are also challenges reflected in the legal and institutional, technological, social and financial barriers to implementing digital and welfare technology solutions and challenges to reaping the benefits for the health care system and the wellbeing of citizens (Lundgren et al., 2020).

This case study concerns a cross-border collaboration project, the VälTel' Mixed Zone for Welfare Technology TestLab', [15] in which a diverse set of public actors and stakeholders has developed and tested welfare technology solutions in the Swedish region of Jämtland Härjedalen and the Norwegian county of Trøndelag. Being sparsely populated and with a large proportion of elderly residents, as well as facing a current and future shortage of health care staff, these two regions both need fresh solutions and ways of working in order to tackle complex health care and care provision challenges. This project provides insights into the key challenges and enablers involved in developing, testing and implementing welfare technology solutions – based on a shared experience of working across borders, across disciplines, and through public and private sector collaboration.

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14. The term 'health care and care' in this case study refers to a healthcare system encompassing both medical and social services linked to health and elderly care such as hospitals, home care and health centres.
15. VälTel 'Mixed Zone for a Welfare Technology TestLab', on which this case study is focusing, spanned from 2016 to 2019. It should not be confused with the currently ongoing VälTel 2.0.

10.2. Swedish and Norwegian health care systems and the implementation of digital solutions

Health care systems across Sweden and Norway

The health care systems in the Nordic countries have many commonalities. Health care and care are, to a large extent, publicly funded and the health care and care systems are also, to varying degrees, decentralised in the Nordic countries, where responsibility for primary and secondary care is located at regional or local levels. However, the legislative frameworks and locus of mandate at national, regional and local levels differ between the two countries (Lundgren et al., 2020). In Sweden, the health care system is regarded as decentralised, with regions being responsible for the delivery of health care and municipalities for care – compared to the more semi-decentralised system in Norway, where responsibility for health care and care is concentrated at the national level and local municipalities. Differences are also evident within the two countries, where the organisation, financing, distribution of responsibilities, and challenges that the health care providers need to respond to vary considerably across regions and local areas (ibid, 2020).

Welfare technology and digital health care and care in Sweden and Norway

Both Sweden and Norway have ambitious strategies and visions for the implementation of digital solutions in health care and care. The Swedish Government and the Swedish Association of Local Authorities and Regions have jointly endorsed a vision for e-health in Sweden running through to 2025. 'Vision e-hälsa 2025' targets digitalisation and e-health as an opportunity and enabler to enhance the quality of, and provide equal access to, health and care. Key action areas include working on the regulatory frameworks for e-health, encouraging more consistent use of terminology (for example regarding common codes, concepts, terms and structures), and finally promoting standards which, for example, address common national specifications and services for secure authorisation and processes (Swedish E-health Agency, 2016). The vision states that e-health is the responsibility of many actors, including local authorities and regions, central government, private and non-profit health care and care providers, entrepreneurs and organisations representing patient, user and family organisations, the industry and others. The Swedish E-Health Agency is tasked in particular with leading and coordinating government e-health initiatives.

In Norway, the National E-Health Strategy (2017-2022) addresses the opportunities afforded by e-health and digitalisation for better quality and for improved use of skills and resources in health and care. In addition, there is an established plan for e-health, known as 'Plan for e-helse' 2019-2022, which sets out the responsibilities and necessary forms of collaboration involved in the nationally managed model for e-health, and subsequently the Norwegian e-health strategy. This targets better use of health data, better coordination of patient flows, and the digitalisation of working processes, for example (Directorate for e-health, 2019a; 2019b). The Norwegian Directorate for E-Health is the competent national agency, although implementation of the strategy and plan requires broad collaboration between regional health authorities, local authorities, technical organisations, and other private and non-profit providers.

Box 8. Welfare technologies

The Nordic Welfare Centre refers to welfare technology as "technology that prevents, helps and deliver welfare solutions. The technology is used, among other things, to maintain or increase security, activity, participation or independence for individuals". Such solutions include, for example, distance-spanning solutions, security or mobile alarms, surveillance technology, video communication, technical support for reminds, ITK services and mobile applications, among many other things (Nordic Welfare Centre, 2020). "E-health" is another frequently-occurring umbrella term for digital or welfare technologies in health care and care in Sweden and Norway. The World Health Organisation (WHO) defines e-health as "the use of information and communication technologies (ICT) for health" (WHO, n.a.).

In both Sweden and Norway, digital solutions in health care and care provision hold great potential in rural and sparsely populated areas for improved service provision and better accessibility of health care and care. (Andersson et al., 2019). Key challenges for implementing and deploying welfare technology and digital solutions in Sweden and Norway span across the access to personnel and the right competencies, lack of integrated data systems, data security and regulations, as well as lack of long-term financial resources to adapt and implement such digital solutions in health and care provision. This is especially evident in smaller rural municipalities (Andersson et al., 2019; Statens offentliga utredningar, 2020, Lundgren et al., 2020). In addition, the application of welfare technology and digital tools in health care and care also depends on access to high-speed internet and to broadband. For many digital and welfare-technology solutions that function as mobile or distance-spanning solutions, mobile services are especially important in rural and sparsely-populated areas (for example, those addressed in the case study on rural mobile coverage). While Sweden and Norway perform well in terms of connectivity and Internet services overall, 'blank spots' still exist in rural areas, where mobile coverage and fixed broadband facilities remain inaccessible or function poorly (European Commission, 2020; Randall et al., 2020). These problems can have a considerable impact on the possibility of implementing distance-spanning solutions in rural and sparsely-populated areas.

10.3. Case study regions: Jämtland Härjedalen and Trøndelag

Jämtland Härjedalen is a region in northern Sweden. It covers an area of 48,935 km2 and has a population of 130,810 in eight municipalities (Regionfakta, 2020). Östersund is the region's administrative centre. It is rich in natural resources (i.e. forestry and farming), as well as attractive natural and cultural features such as mountains, forests, lakes and marshes. In contrast to many other regions in northern Sweden, Jämtland Härjedalen does not have an extensive mining or processing industry. Instead, sectors such as forestry and agriculture, tourism, small-scale production and the public service sector dominate economic activity. The public sector and public services are of great importance, particularly with regard to the geographical composition of sparsely-populated areas, as well as their demographic structure – which includes an increasingly ageing population (OECD, 2016). This is particularly relevant in relation to the provision of good quality, cost-efficient health care and care for all. As part of adapting and transforming the health care sector to meet the needs and challenges that the demographic structure and geographic distances cause, Jämtland Härjedalen has increasingly specialised in e-health. For example, the region has implemented an E-health Hub ('E-hälsocentrum') where new digitalised ways of working with, and providing, health care have been developed through collaboration across the region, which includes Östersund municipality and Mid University Sweden, as well as – with Norway – the 'Innovasjonsklinikken' (Innovation Clinic) in Levanger (Länsstyrelsen Jämtland & Region Jämtland Härjedalen, 2019).

Trøndelag was established as a county in 2018 when the counties of Nord-Trøndelag and Sør-Trøndelag were merged. Trøndelag is Norway's third-largest county by area, and the country's fourth most populated one. There are 38 municipalities in the county, and the population density is 11.1 inhabitants per km2 (2018). Like Jämtland Härjedalen, Trøndelag's population is sparsely distributed across large areas. Large parts of the county are inhabited, and mountains, marshes, forests and the Trondheim Fjord dominate the landscape. At the same time, there is a strong concentration of population in and around the urban and suburban areas of Trondheim. The agriculture, forestry and marine sectors are the most important ones for the county's economy. In addition, the research and development, technology and industrial research environments are particularly strong in Trøndelag. Their features include the Norwegian University of Science and Technology, SINTEF, and Helse-Nord Trøndelag Research and Development. The latter is also the Norwegian project leader in the VälTel project (Trøndelag fylkeskommune, 2018). As in Jämtland Härjedalen, the population structure is increasingly older in Trøndelag, which means a requirement for more jobs and staff in the health care and care sector. Welfare technology and digitalisation are highlighted as measures for making health care and care provision more effective at the county level. However, this implies fresh demand for competencies among staff members (Trøndelag fylkeskommune, 2019; Nord-Trøndelag & Sør-Trøndelag fylkeskommune, 2016).

In predominantly urban regions, where Jämtland is included, at least 80% of the total population is urban, while in intermediate regions, such as Trøndelag 50–80% of the population lives in urban clusters (Map 10). In regions that are predominantly rural, less than 50% of the population lives in urban areas.

Jämtland, Sweden.
Photo: Unsplash.com
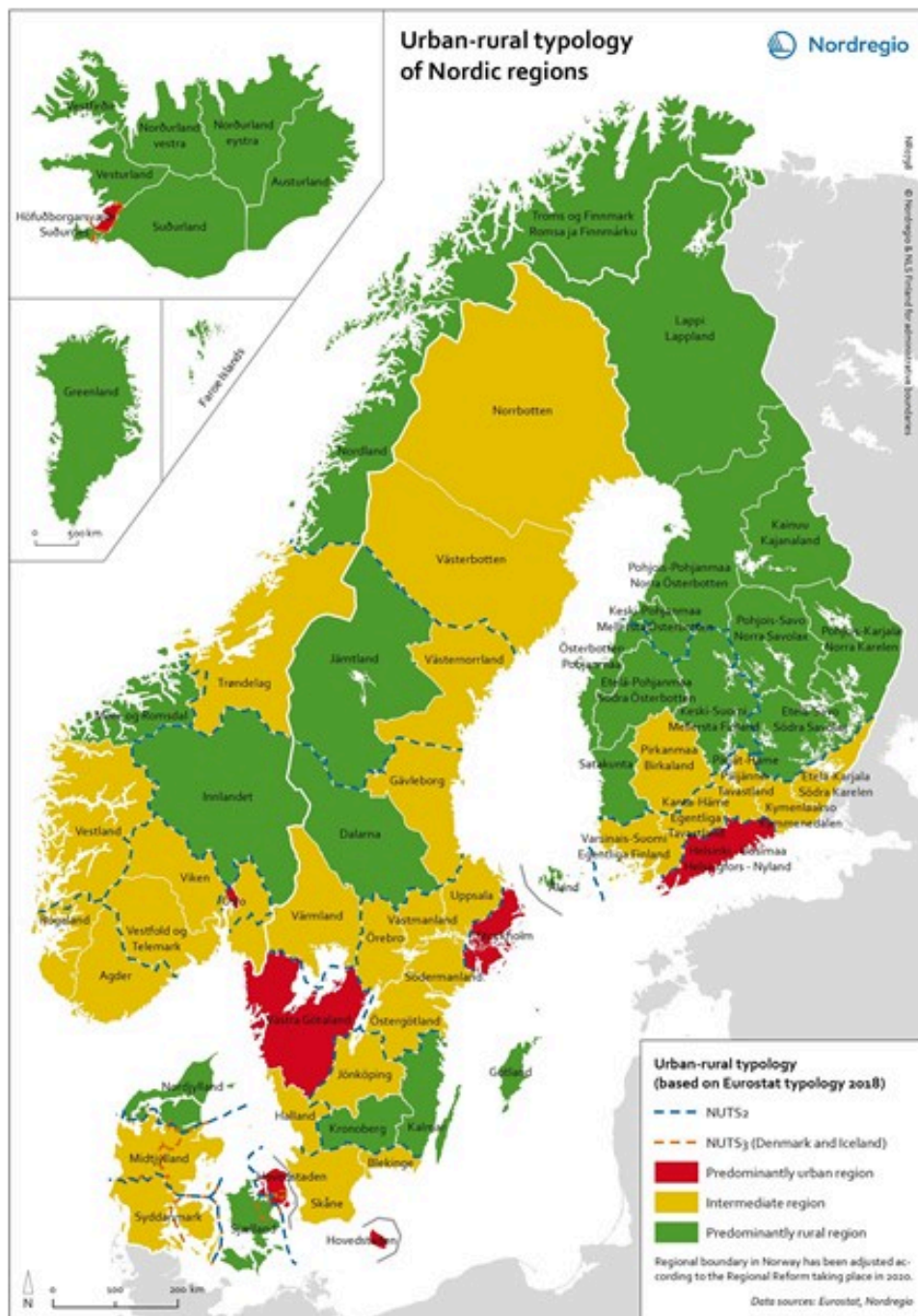
Map 10. Urban-rural typology of Nordic regions 2020.
Author: Jokinen, 2020.

All in all, the key challenges for the provision of public services in health care and care in Jämtland Härjedalen and Trøndelag are the vast geographical distances between the inhabitants and care providers, increasing health care costs, plus the current and future shortage of medical and health care staff (VälTel, n.a.). Both regions emphasise welfare technologies as key solutions for the future. Such solutions create opportunities for turning these demographic and geographical challenges into an opportunity to bring health care and care closer to patients and users by being a frontrunner in distance-spanning solutions and technologies. In turn, that could pave the way for innovative solutions in working methods and welfare technology.

10.4. VälTel – Mixed Zone for a Welfare Technology TestLab

The VälTel model - design and key aims

The collaboration project VälTel' Mixed Zone for a Welfare Technology TestLab' created a cross-border innovation arena or a 'mixed zone' for small and medium-sized enterprises (SMEs), municipalities and regions. It promoted research for developing and testing welfare technology solutions within and across the Swedish Region of Jämtland Härjedalen and the Norwegian county of Trøndelag, an area also called 'the Nordic green belt'.

Box 9. VälTel

The VälTel 'Mixed Zone for a Welfare Technology TestLab' project ran between 2016 and 2019. Financed by Interreg Sweden-Norway, it was started by Region Jämtland Härjedalen and Helse Nord Trøndelag. Region Jämtland Härjedalen acted as the main project manager.

The project's ambition has been to bring companies, municipalities and regions closer together to solve the challenges of the health care sector through testing and developing new solutions and modified working methods, with welfare technology as the key ingredient. Region Jämtland Härjedalen was the project owner and main project manager in Sweden. Region Jämtland Härjedalen is responsible for health care and care in the county. Helse-Nord-Trøndelag HF was the Norwegian project owner. It is a private health trust under the Central Norwegian Regional Health Authority and provides specialist public health care in Trøndelag, as well as conducting research and development. Region Jämtland Härjedalen and Helse Nord Trøndelag HF have distributed their responsibilities across test lab activities in order to be able to support them with knowledge and coordination and to ensure an exchange of experience and information. VälTel has involved around 30 companies, 14 Swedish and Norwegian municipalities, and the health care regions across the entire project area. It has also interacted with actors such as the Norwegian Innovation Clinic ('Innovasjonsklinikken'' in Helse Nord Trøndelag HF and the Swedish E-health Hub in Östersund.

Three groups have had the main responsibility for project management: a steering group consisting of Norwegian and Swedish representatives from municipalities, project owners, project managers, companies, plus the Mid Sweden University. A project group, consisting of project managers from both Norway and Sweden met regularly during the project period, both physically and digitally. A reference group consisting of participating municipalities, together with research, academy and business sector representatives. Several external experts were also linked into the project to advise on specific issues such as law, procurement and statistics. This was regarded as a highly valuable contribution (VälTel).

VälTel activities – collaboration, test labs and testbeds

The key project goal was to create networks and test arenas where companies, municipalities and regions could meet to exchange experiences and skills and test innovative ideas. A key component of this approach has been to open up the operations carried out by specific local and regional authorities to companies – enabling the companies to carry out advanced product development in close cooperation with health care and care. The welfare technology developed

and tested has spanned across specialised care, emergency care, geriatric care, and home care in the project area.

Box 10. Three areas of test labs in VälTel.

TestLab 1: Products and services focused on health rooms and mobile health solutions.

TestLab 2: Testing of products and services in the area of connected homes.

TestLab 3: Testing of products and services for emergency support.

VälTel builds on three different innovation platforms, test labs distributed across three key action areas (Box 10.). These are the same across Sweden and Norway. The test labs have been coordinated and led by three different project or sub-project managers, three for Norway and three for Sweden. Companies or other actors have been able to apply to test ideas in real health care and care environments, known as testbeds,[16] within the three test labs. Local authorities have opened up their operations to companies, making it possible to pinpoint the particular needs and challenges faced by the health care sector and identify joint approaches to address and overcome them. Examples of innovations, products and solutions include the development of SkillAid[17] – a Norwegian app designed to introduce new and temporary health care staff to their new workplace and tasks. SkillAid was firstly implemented in Norwegian municipalities, but was also introduced to, and adapted for, several Swedish municipalities. Another example is a mobile X-ray car, designed to make X-rays more accessible for patients. This was developed on the Norwegian side, starting with Namso's hospital. The aim was to asset up a cross-border collaboration for this service, but the challenges involved in transferring patient data meant that it was not possible (Interview, 2020). Another example is a model tested in Region Härjedalen Jämtland which enabled dental hygienists to carry out oral health assessments in the patients' home environments – while still being able to access the Swedish Public Dental Care journal system.

Mobile X-ray developed in VälTel.
Photo: Roald Bergström

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16.   Test and demonstration environments, referred to as testbeds, are becoming increasingly important for the public and private sectors as goods and services are developed at an ever more rapid pace, and as they become increasingly complex (Vinnova, 2018).
17.   Norwegian company Dynamik Helse created the education app SkillAid for personnel who work within elderly care, so that they could provide staff with an efficient tool for learning (and maintaining knowledge) on care routines, etc.

10.5. Key results

Within the framework of the project, around 50 ideas have been produced, of which about 40 have been tested.[18] These tests have spanned three themes: mobile and decentralised health solutions, safe homes, and providing emergency support in sparsely-populated areas. While not all tests were successful, they have all been educational, both for the public sector and for the businesses involved. Furthermore, within the framework of the project, several activities (such as conferences, seminars, study visits and other meetings) have also been held.

An important part of the project has been to create cross-border added value. In this context, the development and maintenance of an ecosystem of networks for learning and the sharing of experience have been important achievements, as well as a greater understanding of the respective countries and regions' health care systems, legal conditions, cultures, ways of working, and existing preconditions for using welfare technology. The project has also contributed inspiration to both sides concerning how to improve operations and identify ways of incorporating new perspectives into the development process. A formal agreement has been signed for the continuation of research and development (R&D) collaboration between the R&D units of Region Jämtland Härjedalen in Sweden and Nord Trøndelag Hospital Trust in Norway. This will facilitate further cross-border collaboration on research, education, development and innovation in health care. Good outcomes and remaining challenges have been assessed, and several are encompassed by the currently running second cross-border VälTel project, in which Östersund municipality is the main project manager.

10.6. Main motivations and drivers behind the project

The core of the project has been to enhance equality of access to health care in the regions and municipalities encompassed by the project. Interviewees have largely highlighted two interrelated challenges: the lengthy and increasing distances to access health care and care, especially in rural areas; and a current (and probably future) shortage of medical staff across the Norwegian and Swedish regions and municipalities involved. So an ageing population has more varied health care needs, and provision for these needs is increasingly dispersed, which poses a challenge to municipalities and regions with constrained budgets. These challenges constitute key drivers for setting out to find new, innovative health care and care provision solutions and methods. Interviewees also emphasised the opportunity to encourage municipalities and regions to consider strategically innovative solutions to future challenges in the health care sector. At the same time, such a project can make sure that the technology is appropriately adjusted to the reality and practice faced by health care providers and patients (interview, 2020). One interviewee elaborated on this, commenting:

"We tried to turn challenges into an advantage, [especially] where, through VälTel, we could solve the challenges that are especially evident in our regions. In ten years, our demographic profile will be more evident in other regions throughout Europe as well – and, with VälTel, we have an opportunity to be a frontrunner in this regard".

(Interview, 2020).

Through this project, opportunities were provided to improve networking and collaboration across the Swedish-Norwegian border, as well as to exchange ideas and transfer developed products or innovations more efficiently across borders (VälTel, 2019, Interviews, 2020). The added value in cooperating across national borders consisted, therefore, of pooling resources and tackling shared challenges. It was also thought that cross-border cooperation would expand the exchange of experience and inspiration, as well as offer a larger market for companies to test ideas and solutions (VälTel, 2019).

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18. An overview of tests is provided in the final project report, appendix 2: http://www.interreg-sverige-norge.com/wp-content/uploads/2014/07/sluttrapport_v%C3%A4ltel.pdf.

Interviewees also emphasised the importance of people working in the lead organisations incentivising and driving forward these types of collaboration, jointly developing e-health and welfare technology for the respective health care systems. This needs to be done through close collaboration across borders, and within different levels of governance, as well as through making it possible for businesses to contribute to innovation and welfare technology solutions in the public sector. The Director of Research and Education in Region Jämtland Härjedalen, Sweden, and the Research Director, Nord-Trøndelag Hospital Trust, Norway were both regarded as highly important for ensuring the initiation and continuation of these types of collaborations.

Sweden.
Photo: Pixabay.com

10.7. Key enablers supporting success

The cross-border cooperation between Sweden and Norway is regarded as valuable, and the networks built up have contributed important knowledge and experience. For example, collaborating across borders has required deeper familiarity with each other's health care systems, different funding instruments, and different cultures. This learning process has been an important factor in developing well-tailored tests, enhancing collaboration in general, and envisaging future collaborations and potential opportunities for implementing cross-border health care solutions (Interviews, 2020).

As the project includes a large number of Swedish and Norwegian actors and stakeholders, good coordination and leadership were important for cohesion. Interviewees stressed the importance of committed project managers mobilising and coordinating the processes. They also emphasised that, as far as good connections and insights into health care systems and providers at the regional and municipal level are concerned, it is important that those involved possess knowledge of research and are able to adapt to cross-disciplinary perspectives. This will facilitate the establishment of test labs and the introduction and testing of new digital and welfare technology to improve ways of working in the public sector. In particular, those involved must learn about and know the rules and legislation for patient data storage and cross-border transferability, as some of the tests identified this as a particular challenge.

The composition of the steering group and the reference group also constituted important factors in enabling cross-border collaboration. Interviewees highlighted the role of the reference group as a strong enabler for anchoring and disseminating the work of the project and its achievements. A project leader elaborated on this, commenting:

"VälTel had both a reference group and an expert group, with the reference group comprising one representative from each co-funder. When it was established, a lot of things happened, as [these

groups] were extended arms within the operations they represented. They worked hands-on across the whole project area, and could spread information and knowledge about what was going on to both the Swedish and Norwegian sides."

<div align="right">(Interview, 2020)</div>

This also relates to the importance of ensuring that there are people involved and mobilised with a mandate for taking things onwards and into operation. For example, one interviewee said that

"the project depended on people and their contact networks. You need direct contacts where people have a mandate. If you do not have that mandate, it is difficult to move on in the project".

<div align="right">(Interview, 2020)</div>

A strong aim and driver for VälTel has been to implement and disseminate the solutions and products achieved by the project. A prerequisite for further development and implementation of the ideas tested was, according to the interviewees, an agile project group that listens to the needs and preconditions that apply in practice. Health care and care staff often have a heavy workload. This can hinder the uptake of new, previously untested solutions or products. It also relates strongly to the needs and prerequisites of both patients and users, who in the end are key target groups for many of the welfare technology solutions and innovative models already developed that could potentially be implemented. In this way, taking a bottom-up approach, involving and engaging health care and care staff – as well as users – has enabled the adaptation and targeting of welfare technology solutions and other ideas with practical application. One of the project managers also explained how the project has linked up with a variety of disciplines that also work as enablers for providing the digital or IT competencies that the health care sector might otherwise lack. Another project manager agreed with this:

"It is important that these operations cover a need; that's the key. If health care operations can express their needs, you can always get a business to go for it. Technology and digitalisation in the health care sector are complex, a high level of competence is required for the medical aspects and care, but digitalisation is a minor part of this. It can be challenging to get the municipalities or health care staff to tell us what their needs are. In their world, it can be difficult to see what a potential welfare technology solution might look like and be used. But when they got a chance to elaborate more freely, we have encountered the fact that there are a variety of needs and ideas: for example, AI solutions. This is essentially about digital maturity – and the key was to find the driver in the operations."

<div align="right">(Interview, 2020)</div>

In this way, being attentive towards both the staff and patients has been a key enabler in carrying out real-life tests, and in working with different municipalities and health care providers. The project results and ideas presented may serve as an incentive for participants to continue developing new solutions. A strong enabler in this regard has been the fact that the tests have been carried out in a designated and delimited environment that allows for real-life testing – including error and failure, which is a part of running any test lab. By establishing these test labs, the public sector and health care providers did not have to worry about big investments and implementing new solutions directly on a large scale (Interviews, 2020). Test environments also enabled the testing of cross-border solutions in an innovative way. This has contributed to the identification of key challenges and solutions for cross-border welfare technology and for the management of patient information.

10.8. Key challenges

Institutional challenges

There are many similarities between Sweden and Norway in terms of the structures of their health care systems, but there are also significant differences in locus of responsibilities and mandates. The differences between Sweden and Norway, as well as within the regions involved (in terms of the organisational structures of the municipalities, hospitals and other practitioners)

were evident in this project. The ways patient information is processed also differs between the two countries, something particularly highlighted by our interviewees. One of them argued that

"the structure of the health care sector differs between Sweden and Norway. There are also cultural differences, which means that we operate differently in some regards. That can be challenging sometimes from a collaboration perspective, but the differences have also been an important aspect of the learning from each other".

(Interview, 2020)

Another central part of the project has been to engage with the municipalities and to communicate the opportunities to test and evaluate products and approaches, as well as to learn about procurement or product implementation. The interviewees elaborated how this has worked better with some municipalities, who have been more involved from the start and learned about digital tools and solutions, while things have not gone so well with municipalities that are more constrained financially and hesitant to engage to a fuller extent. This often had a close connection to the workload of the health care and medical staff, with interviewees identifying the sometimes heavy workloads as a challenging factor for the implementation of VälTel (Lange Scherbenske, 2019). The interviewees emphasised that this also related to overall regional development. One argued that

"Digital maturity is also an issue for the regions and hospitals. It affects whether they are ready for the technology that has been developed and whether the technology is adapted for those environments".

(Interview, 2020)

In this respect, VälTel has been an important platform, with the right composition of skills and actors from the different spheres of research, businesses and the health care sector to run tests on a smaller scale.

One interviewee also felt that the cross-municipal collaboration was weak at times, elaborating that

"I sometimes felt, as a municipal representative, that we did not have much contact with the Norwegian municipalities. Rather, cross-border collaboration was more focused on research and innovation on a regional level, as I experienced it."

(Interview, 2020)

The challenges involved in enabling municipalities to collaborate across borders and municipalities were identified as being based on the difficulty of bridging the different systems, often combined with a lack of time to engage properly. Project ownership was also assigned to the regions and to regional health care actors, which may have been an obstacle to greater involvement by the municipalities. However, at the same time, another interviewee also stressed the importance of a political will to engage in collaboration across both borders and municipalities, commenting:

"Many border municipalities are small and have difficulties in mobilising resources to focus on this. However, cross-border collaboration is seen as a positive idea. If we can show and create opportunities through such a project, more people might want to engage with it in the future. However, the preconditions are difficult today."

(Interview, 2020)

During the course of the project, the Norwegian side underwent municipal reform, which further complicated the coordination of municipal partners and the establishment of clear responsibilities among partners.

Anchoring digital solutions in the daily practices of medical staff and their operations was a key enabler for testing and developing welfare technology solutions. However, this also presented a challenge, because interviewees argued that, in their experience, people working in the health care sector did not always accept, or were unable to implement, the solutions identified, and continued instead with the routines and practices already running – the established ones, in other words. This was, in most cases, linked to high levels of stress and heavy workloads within health care operations. Another set of challenges highlighted concerned barriers to digital competences and knowledge among staff. As the project offered test labs in more confined

environments there was a possibility of identifying and addressing potential challenges with the products or services at an early stage and without interfering too much with the overall health care and care operations.

VälTel is an Interreg project, and several challenges regarding project administration and budgets were addressed by the representatives interviewed. The challenges and enablers involved in the Interreg funding and administrative mechanisms are not the focus of this case study, but it is nonetheless relevant to try to take these aspects into account as well. Some partners experienced Interreg administration as a burden that required a lot of resources, while others had experienced the Interreg secretariat as providing the support and structures that helped them frame and clarify the implementation of the project. One interviewee experienced cultural differences, in terms of how bureaucracy and administration were perceived and interpreted by different project managers– which can add to the challenges when working across borders.

Legal challenges – data solutions and data sharing

Several of the legal difficulties involved in working in a cross-border context have been related to welfare technology products or solutions being tested and/or transferred across national borders. These challenges were often related to legal barriers and uncertainty about patient data storage, transferability and confidentiality. Cloud storage of data is increasingly a prerequisite for the further development of e-health. However, there are still legal and security related unclarities related to this, including the potential transfer of personal data to countries outside the EU when Cloud solutions are used (Magnusson Sjöberg, 2020).

Patient data have been collated in tests in the project; for example, data from monitoring sensors. Since companies have been involved with their own Cloud storage solutions, there was a need to be thorough in going through the policies and legislation applicable to confidential processing of patient data. An interviewee expressed the view that

"many questions that we have had in this project have been related to data. Who owns it? Where is it stored? Is it available for research? These are not simple matters according to legislation and the GDPR. Norway and Sweden also have different journal systems, but we found solutions in the form of common standards for sending data. But then again, we are still facing a project with Cloud data storage laws and regulations."

(Interview, 2020)

Several interviewees perceived that the rules were rather similar across Sweden and Norway, but the differences (and thus the challenges) were also greater than expected. On the other hand, this was seen as a wider Nordic challenge, as elaborated by one interviewee:

"The issue with patient data, legislation and regulation in digital health solution, is a challenge that applies to the Nordic Region overall."

(Interview, 2020).

However, another interviewee argued that this challenge varies broadly between the solutions and technology products developed and tested. Many tests have not involved compiling data, and data has often been anonymised. The extent of the challenge has also been perceived differently between Swedish and Norwegian interview partners. One interviewee elaborated that the reason for this could be that the lead partners are different organisations with different specialisations and focus. The interviewee also felt that the Swedish side had a stronger focus on finding the right forms and procedures for working with welfare technology, compared to the Norwegian side.

Even if these challenges were perceived as difficult to navigate, our interviewees said that they had learned a lot about legal matters concerning data and that you have to start somewhere to find out where the challenges lie (Interview, 2020).

10.9. Upscaling and potential for replication

The interviewees generally saw considerable opportunities for replicating the project model and for cross-border collaboration to develop innovative solutions for other geographical areas. The model could also have potential for developing digital solutions for other types of thematic public service provision, as well – especially in rural municipalities and regions across the Nordic Region – to support citizens with accessible and high-quality public services. Not least in the light of Covid-19's impacts and effects on digital norms and practices, there is likely to be considerable demand for proven welfare technology solutions designed for health care use. Interviewees particularly stressed that an important enabler and driver for collaboration was the similar challenges faced by the cross-border regions and municipalities involved. This does not mean that the systems for health care provision, or for other types of service provision, have to be the same, or fully integrated – learning, resource pooling and improved e-health practices can still be enabled through a project like VälTel. When discussing a potential upscaling of this collaboration, some considerations were highlighted concerning the need to balance the size and scale of such a collaboration, while still being able to maintain an overview of operations and proximity to local health care providers, patients and their needs.

The key lessons identified and learned in VälTel, running between 2016-2019, have been transferred to a new, project (also funded by Interreg Sweden-Norway). In VälTel 2.0, the main project management was transferred to the municipality of Östersund. Regarding this, one interviewee highlighted the opportunities of – and need for – deepening municipal collaboration and working further with the institutional and legal challenges related to data storage and transferability. Another interesting example of further cross-border collaboration for health care provision in Jämtland Härjedalen and Innlandet is one initiated in 2019 between Funäsdalen Health Centre and Röros hospital, as well as Tynset hospital in Norway. Through this collaboration, Swedish patients within a defined geographical area who are listed at Funäsdalen Health Centre can be remitted to the Norwegian hospitals of Röros and Tynset, which are actually situated closer to the patients concerned. This collaborative venture is a learning project, and it will be evaluated after three years. Even though the project does not directly target welfare technology, it highlights the potential to test and learn from cooperation, and from offering patients health care in facilities closer to them, even though the closest hospital happens to be across a national border.

10.10. Key points when considering replication

Test labs and testbeds – development milieux that enable collaboration

Multi-disciplinary, cross-border, mixed public and private testbeds and test labs can be a good way to test and develop welfare technology solutions anchored in existing health care and care systems, without interfering too much with their daily operation. This model can enable cross-learning – learning from experiences and best practices across countries and between different health care sectors – where issues such as the data transferability and storage can be tested and further investigated in a contained framework, without huge investments or risk-taking, in public health care operations. VälTel project participants also emphasised the importance of bottom-up perspectives and ways of working, to ensure that solutions are well adapted to staff and patients' needs.

Welfare technology and smooth data solutions

Further knowledge development and national studies of regulations on patient data storage and transport are needed to facilitate the safe, seamless and efficient transferability of patient data if solutions are to be tested and potentially implemented across borders. This includes not least

those welfare technology solutions developed along with businesses, as part of which mechanisms for control and follow-up on Cloud storage are emerging.

Cost-benefit analyses and benefits realisation

Important issues addressed through the VälTel project can often be related to ways of moving forward to implement the technology solutions tested, to look at how collaboration can be furthered, and to see how all his can be taken further within the municipalities and regions. In the end, these issues are often about cost-based solutions. Our interviewees highlighted cost-benefit analyses, benefits realisation, and the calculation of benefit as elements that they would like to have investigated further, but which can be difficult to adapt to such a project. Public agencies have, to some degree, offered recommendations regarding this, but these were too broad for this particular project. The issue of benefits realisation and studying them in greater depth has been held over and incorporated into the next project.

Enabling of municipalities

In this project, it was felt that resource and staff restraints was a challenge for municipalities to fully engage and take part of the tests of welfare technology solutions and products carried out in VälTel. Municipalities are key for the delivery of primary care in Norway, and in Sweden they have responsibilities for the care for the elderly and for other types of support and services related to welfare. Collaboration and cooperation could help pool resources and inspire possibilities for using welfare technology. Municipalities could also benefit from collaborating across municipal and regional levels on the procurement of welfare technology solutions, in order to learn and pool source competencies.

10.11. Conclusions

Ageing populations, vast distances for citizens to access health care and care facilities in rural areas, and a current (and probable future) shortage of medical staff are the key challenges that the Norwegian and Swedish regions Jämtland Härjedalen and Trøndelag face. These challenges have served as key drivers for setting out to find new, innovative health care and care provision solutions and methods. The VälTel project aimed to create a cross-border arena in which companies, municipalities and regions could meet to exchange experiences and skills, as well as to test innovative ideas. A key component of this approach has been to open up the operations carried out by specific local and regional authorities to companies – enabling the companies to carry out advanced product development in close cooperation with health care and care. VälTel has successfully enabled the testing of innovative solutions in local health care operations, added cross-border value and promoted collaboration between Swedish and Norwegian regions and municipalities. The project has also highlighted the importance of the co-production of knowledge and solutions across the public and private sectors, as well across different disciplines. For rural, sparsely populated neighbouring areas, such as in Jämtland Härjedalen and Trøndelag, finding ways to develop mutually beneficial systems for coping with ongoing demographic changes can be both administratively and financially crucial. Through this project, innovative systems to cope with the increasingly challenging task of providing reliable, cost-efficient solutions could potentially help the respective regions and municipalities develop the capacity to provide local and accessible care for their populations. Although the health care and care institutions in the respective countries do not fully integrate their health care and care systems, the project and the test lab environments allows them to benefit from synergies with a consortium of actors, tools and systems.

10.12. Interview list:

1. Marie Norlén, Region Jämtland Härjedalen, Sweden (main project leader for VälTel).
2. Håkon Sivertsen, Helse Nord Trøndelag, Norway (deputy main project leader).
3. Åsa Hofsten, Region Jämtland Härjedalen;
4. Roald Bergström, Helse Nord Trøndelag, Norway.
5. Helle Sörensen, Östersund municipality, Sweden.

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11. Conclusions

11.1. Overcoming Covid-19 Collaboration Challenges

The Nordic Region has a long tradition of interregional, intermunicipal, and cross-border collaboration; however, this cooperative spirit has been placed under threat by the challenges posed by the Corona Virus pandemic. Increasingly centralized policymaking and closed borders during the health crisis present a major obstacle to the Nordic model of collaboration. These obstacles have the potential to reduce levels of trust and social capital between stakeholders across all levels of governance.

While closed borders and a lack of face-to-face interaction pose challenges to collaborative actions, they are not insurmountable obstacles. It is arguable that within these difficult circumstances greater collaboration is needed between different levels of governance, in order to share solutions for recovery and help build resilience against these newly emerging societal threats. It is within this context that collaborative governance can play an essential role in maintaining and strengthening relations between Nordic countries and regions. Technological developments and digital media ensure that collaboration and communications between actors can continue to flourish. Face to face interactions might be restricted in the short term, but collaboration can continue effectively using online platforms. Such platforms can facilitate interactions between stakeholders and citizens, so they can continue to build networks, share knowledge and find solutions to shared societal problems.

Indeed, the pandemic has shown that collaborative efforts are needed now, more than ever, particularly at the national level where the health crisis has highlighted the essential role of regional and local actors in healthcare provision. Central governments that have devolved responsibility to lower levels of governance, and worked together with regional stakeholders, have proven more successful in controlling the spread of the virus through the implementation of effective local test, track and trace policies. Furthermore, the true fallout and cost of the health crisis are yet to fully manifest themselves. Interregional and cross-bord collaboration will be required, so stakeholders at all levels of governance can work together and share knowledge and ideas to help overcome the devastating socio-economic impacts of the pandemic.

11.2. Nordic Collaborative Governance

This report highlights that Nordic collaboration between countries and regions remains strong despite the disruptions caused by the current pandemic. New and innovative models of collaboration are constantly emerging thanks to technological developments that are helping to bring stakeholders together to solve common societal challenges. The high levels of cooperation outlined in this report indicate that collaborative governance is continually evolving within the Nordic context. Indeed, many of the collaborative governance dimensions are reflected in the interregional and cross-border cooperation models studied in this report.

- **Different Contexts:** The case studies confirm that collaborative governance in the Nordic Region is adaptable to changing contexts. Collaborations are ongoing across different levels of governance, between stakeholders with sometimes competing interests and administrative structures, and in a heterogeneous range of policy thematic areas. This highlights the flexibility of collaborative governance models to adapt to different contexts and circumstances.

- **Key Drivers:** In line with the collaborative governance concept, the report finds that collaborative interactions rarely occur organically through bottom-up stakeholder initiative.

Collaborations often require top-down leadership to kick start cooperation, whether the catalyst comes in the form of a national government decision, a mandate to decentralize policy to lower levels of governance, or proactive leadership from regional and local authority representatives.

- **Institutional Arrangements:** Some of the case studies support the collaborative governance concept that cooperation is mainly ad hoc and short-term in nature. If collaboration is based on national and EU level funding, cooperation rarely continues after a project end date. Very rarely do ad hoc collaborations become permanent and formalized through legal agreements between participating actors. This is due to insufficient funding availability and the limited time capacity and resources of stakeholders.

- **Stakeholder Engagement:** Strong stakeholder engagement has been highlighted as a successful element of collaboration across all the case studies, with high levels of collaboration between public authorities and other stakeholders. The cases also reveal the importance of involving technical experts to ensure effective policy formulation and implementation. At the same time, however, there has also been the underrepresentation of certain groups and limited citizen involvement, which raises questions about the openness and inclusivity of collaborative exercises.

- **Deliberation:** The case studies indicate that different collaborative models have been proficient in reducing the potential for conflict through knowledge sharing and deliberation. Collaboration inevitably requires a certain degree of deliberation as stakeholders with competing interests and priorities must openly share information in the search for shared solutions. The case studies suggest that collaboration has been particularly successful in establishing stronger connections between multi-disciplinary and cross-sectoral stakeholders.

- **Shared Motivations:** A willingness to share resources to overcome common challenges is what motivates stakeholders to participate in collaborative activities. There is strong evidence from the case studies to suggest that collaborative activities are helping to build stronger networks and enhance social capital between stakeholders. Working together fosters increased trust and respect among stakeholders, which lays the foundations for future cooperation; however, collaboration usually does not continue outside of project settings.

- **Impact:** The case studies reveal that collaborative projects have had a significant socio-economic impact at regional and local levels. Tunnels in Iceland have had a great impact on regional development and livelihood. The Northern Westfjords function as one community and coherent labour market due to the tunnels, but the region is still fighting a declining population. Social interaction, communication and collaboration have increased and people from neighbouring municipalities start to sense the community as one. The communalities of small populations, reduced rivalry and similar needs create the foundation to increase the collaboration further and to get better synergies.

  In Bergö (FI), the establishment of a multi-functional service hub / centre secures accessibility of services locally. The initiative has had a significant effect on the quality and accessibility of services on the island – and is a central component to maintaining the viability of the island.

  The #fulltäckning (SE) project has provided an important collaboration platform for addressing and improving market deficiencies through innovative and small-scale solutions to lack of rural mobile coverage. The collaboration and tested bottom-up solutions have also shown considerable possibilities for municipalities and regions to promote solutions for improved rural mobile coverage.

  In the VälTel case (SE-NO) the development and maintenance of an ecosystem of networks for learning and the sharing of experience have been important achievements. The collaboration led to a better understanding of the respective countries' and regions' health care systems, legal conditions, cultures, and ways of working. These were all

important preconditions for using welfare technology in a cross-border setting. Furthermore, a formal agreement was signed for the continuation of research and development collaboration between the R&D units of Region Jämtland Härjedalen in Sweden and Nord Trøndelag Hospital Trust in Norway – to facilitate further collaboration on research, education, development and innovation in health care in the cross-border region.

11.3. Identifying Common Drivers, Challenges, Enablers and Benefits of Nordic Collaboration

Throughout the case studies examined in this report, some common themes emerge in relation to the main drivers, challenges, enablers and benefits of Nordic collaboration between regions and across borders. These commonalities are outlined in more detail below.

Main Drivers of Nordic Collaboration

- **National Mandates:** National governments providing regional and local authorities with a clear mandate to collaborate in policy thematic areas where they think that local actors are better placed to pool resources and deliver efficient services to citizens. In the Icelandic case, for example, the national government compels the collaborative approach needed in places where population requirements are attached to the delivery of particular services, such as those provided for disabled people, and the municipal Child Protection Committees. The national government has also required a collective approach from the case study region, which has led to the establishment of Vestfjarðarstofa/ Westfjords Regional Development Office being a prominent cooperation platform for the region as a whole.

- **Public Authority Leadership:** Entrepreneurial regional and local authorities are essential for proactively leading collaboration efforts and providing a platform for local stakeholders to discuss, develop and implement policies.

  In the case of Iceland, the Vestfjarðarstofa/ Westfjords Regional Development Office is tightly connected to the Westfjords Municipal Association and has taken over some of its task it has also taken over the task the Westfjords Business Development agency had.[19] This is a place to advocate for regional interests. This agency involves and works closely with research institutes, universities, companies, and entrepreneurs involved in different projects. The agency's governing board is composed of nine members. Five of them come from local government, and four from the region's business and cultural sectors.

  In the case of VälTel, a Swedish-Norwegian cross-border innovation arena was created, a 'mixed zone' for small and medium-sized enterprises (SMEs), municipalities and regions. Local and regional authorities drove forward the collaboration. The joint development of e-health and welfare technology for the respective health care systems was realised through close collaboration across borders, and across different levels of governance, enabling businesses to contribute to innovation and welfare technology solutions in the public sector.

  The project #fulltäckning has enabled collaboration through a multi-stakeholder platform combining broad competences in technology and IT, digitalisation strategies, sectoral and local knowledge. In the Swedish context, where mobile network expansion is market-based, collaboration partners found ways to improve the mobile coverage in rural areas (often not in the central focus of companies) on the one hand. On the other hand, project partners advocated for improved rural perspectives integration in policy design and within national frameworks. For the Regions of Norrbotten and Västerbotten, collaborating in projects like

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19.   Even though the national government required a collective approach.

#fulltäckning served to address mobile network and coverage challenges and to advocate needs and policy priorities based on concrete needs and hands-on solutions.

- **Shared Challenges:** The identification of common policy challenges is a key driver of collaboration. This is particularly the case in relation to shared socio-economic, demographic and environmental issues, including youth unemployment, high school drop rates and an ageing population. Whilst all cases in this report fall under this category, the Icelandic case is noteworthy. The tunnels have undoubtedly had an impact on various spheres of collaboration between the municipalities of Bolungarvík and Ísafjörður, including labour market, health and the economy. Furthermore, a bus connection operated five times a day between the towns, provides children and young people with enhanced opportunities in terms of sports and leisure activities. Tunnel and bus connection promote a better utilisation of sports facilities on both sides of the tunnel, including swimming pools and skiing areas. Most settlements in the Westfjords are too small to bring together a full team for many team sports activities – the tunnel is a uniting factor here as well.

- **Urban-Rural Divides:** Growing disparities between urban and rural areas is a common challenge across the Nordic Region. Efforts to reduce inequalities between urban and rural areas is a key driver of many of the collaborations examined in this report, particularly those collaborations focused on increasing accessibility and access to services within rural areas. All cases serve to bridge the urban-rural divide – combining innovative social, governance and technological solutions to service provision.

   The VälTel case is based on the need to address and counteract urban-rural divides. Vast and increasing distances between citizens and health care providers as well as aging populations are key challenges addressed. One driver for collaboration was to develop welfare technology for these particular challenges and to become front runners in healthcare provision.

   In the #fulltäckning case, the urban-rural digital divide was the key driver for establishing this innovation project and develop its distinctive forms of collaboration. Unequal accessibility to mobile coverage and lack functioning market mechanisms for providing mobile services and infrastructure, were among the key aspects tackled by the #fulltäckning partners. They set out to develop innovative solutions, answering the needs of rural businesses and households, thus offering different perspectives to market solutions and governance of mobile services/infrastructure.

   One of the contextual issues faced by the initiators of the Bergö case, located in the Finnish archipelago of Ostrobothnia, was that of centralization of services, particularly elderly care. This can be a key challenge for rural islands and archipelagic areas – the answer can local-community-based action combing several service types "under one roof". The Bergö case illustrates different drivers for developing locally led solutions to service provision needs, through strong local collaboration and with the local municipality.

- **Cross-sectoral collaboration culture:** The Nordic countries have a strong culture of collaboration and across different spheres of governance. This concerns the development of national policies, networks of public and private actors as well as locally led community development.

   In the case of the Westfjords and elsewhere in Iceland, rescue teams play a vital role. According to Kakez et al. (2018), this public service is an excellent example of co-management, with civil society organisations often working with both public and private actors. Rescue teams frequently work with the police, health authorities, and with the civil protection authorities. These independent associations have an extensive role in prevention and rescue work in Iceland, where thousands of volunteers dedicate time to rescue teams under the umbrella of ICE-SAR (Icelandic Association for Search and Rescue).

   VälTel, #fulltäckning and Bergö are all collaborations that draw on multi-disciplinarity, bring together public and private actors and combine diverse sets of competencies and responsibilities, which are distributed across different levels of governance. VälTel is an

example of a large-scale, cross-border project bringing together Swedish and Norwegian local municipalities, regional stakeholders, research and and businesses. #fulltäckning is similar but operated at cross-regional level in Sweden. Bergö is a "micro case" implemented on a small island. Its success is largely a result of long-term dialogue and negotiation between dedicated local community activists and the local municipality – enabled by state funding.

Main Challenges of Nordic Collaboration across regions and borders

- **Different governance and administrative structures:** Different governance, administrative planning and regulations between regional public authorities and countries can be a major obstacle for Nordic collaboration efforts. Competing stakeholder interests and priorities are also a regular source of tension that need to be overcome through effective deliberative and consensus building processes.

- **Public funding:** Nordic collaborations, whether between municipalities, regions or across borders, are reliant on public funding from national governments and the EU level, such as EU Interreg cross-border and transnational programmes. The lack of public funding will be further constrained by the economic impacts of the Covid pandemic, therefore, the long-term continuation of collaborations is restricted by funding availability.

- **Ad hoc collaborations:** It is very rare that Nordic collaboration projects are established on the basis of formal legalized agreement. The majority of such collaborations are ad hoc in nature and built around short-term nationally or EU funded pilot projects. This means that collaborations rarely continue after the period length of the project as there is not enough public or private funding available to keep collaborations going.

- **Stakeholder overrepresentation:** The project-based nature of collaborations is favourable to those stakeholders with the experience, time and resources to apply for national and EU level funding. This sometime leads to a concentration of funding around certain stakeholders, particularly larger companies and higher education institutions.

- **Limited citizen involvement:** While Nordic collaborations are focused on providing opportunities for citizens and improving their quality of life, citizens need to be more proactively involved in the development and implementation of collaborative processes.

- **Data availability:** Interregional and cross-border data and information is often unreliable as there is little harmonization of data gathering methods. Consequently, collaborative activities are based on inconsistent data and information. Furthermore, the lack of interregional and cross-border data makes assessing the impact of collaborations challenging.

Main Enablers of Nordic Collaboration

- **Shared resources:** The willingness of stakeholders to pool key resources was regarded as a key enabler across the case studies. Sharing essential resources including finances, knowledge, infrastructure and personnel increases the quality and efficiency of policy design and deliveries.

- **Local knowledge and expertise:** Local knowledge is viewed as a key enabler in Nordic collaborations. Place-based expertise is integral for ensuring that collaborative activities are carefully tailored to meet the needs of stakeholders and citizens within their specific geographic locations.

- **Technological innovations:** Rapid technological developments have opened up the opportunities for collaboration in new policy thematic areas. High quality ICT and

broadband services are regarded as extremely significant enabling technologies, particularly in the delivery of collaborative online healthcare and e-governance activities.

- **Technical expertise:** The involvement of stakeholders with technical knowledge and expertise was considered a key enabler across several of the case studies. Technical expertise is essential, particularly in relation to implementation of collaborative activities driven by new online technologies.

11.4. Upscaling Nordic Collaborative Governance Models

Rapid technological developments are enabling new types of collaboration between Nordic countries and regions, with high quality ICT presenting new opportunities for actively engaging stakeholders and citizens in policymaking. The collaborative governance models examined in this report represent only a small number of these novel Nordic collaborations from which we can learn from and develop in the future. What is clear from the case studies, however, is that there is no one-size-fits-all model of Nordic collaborative governance. Indeed, collaboration must be approached on a case-by-case basis and is largely guided by geographic resolution (e.g. interregional/cross-border) and the policy thematic area in focus, which help determine which stakeholders should be involved in cooperative processes.

The different collaborative governance approaches examined here have the potential to be upscaled and replicated to facilitate further cooperation between Nordic countries, regions and municipalities.

- **Bergö (FI).** Locally led initiatives, collaborating with local municipality, can serve as innovative solution for securing local services and contribute to solving societal challenges. Smaller islands can particularly benefit from such solutions, not least in rural areas, where centralisation of services and long distances are crucial obstacles for attractiveness and well-being of local communities. Long-term financing and support mechanisms to secure the organisation of locally led initiatives is central. Several factors should be taken into account in terms of possible replicability. On Bergö, the tight web of the local community, and access to competencies and networks was a key tenet to plan, apply for funding, negotiate and coordinate with the municipality and supervise a large construction project. The scope of influence and the resources invested by the local communities to advocate local needs have been been strong. The circumstances for such enabling factors largely differ across places in terms of socio-economic, demographic and cultural structures. Furthermore, the locus of mandate, governance structures and policies for place-based and local development differ across regions and countries – which also frames the opportunities to drive ahead such projects in collaboration between a municipality and a local NGO.

- **FGU.** Not easily replicable due to the nature of the case and the big restructuring it would require in other Nordic settings at national level. While FGU is part of the national school system in Denmark, the potential for Nordic replication rests on ensuring that stakeholders from across municipalities are actively involved.

- **#fulltäckning (SE).** Although #fulltäckning focused on and operated in the regions of Västerbotten and Norrbotten, the project aims were to find technical solutions and promote market-models and policies tailored to a broader rural context and other areas facing similar challenges. Thus, there is considerable upscaling and replication potential. In terms of replication in a Nordic context, the role for regions or municipalities largely depends on the locus of responsibilities and mandate when it comes to coordinating and implementing broadband and mobile services to citizens and businesses.

- **HentMeg.** This model is replicable, but not necessarily the best option for all municipalities across the Nordic Region, although it does have Nordic potential overall because the technology was not tailored specifically to Norway.

- **VälTel (SE).** There are considerable opportunities for replicating the project model and cross-border collaboration to develop innovative service provision solutions for other geographical areas. The model could also have potential for developing digital solutions for other types of thematic public service provision. The project is already renewed (VälTel 2.0) with a stronger focus on municipalities and data issues. Differences in legislation and frameworks in terms of welfare technology and digital tools are potential barrier to the transferability of solutions (e.g. patient data). However, developing cross-border test labs and test beds can be key enablers for developing tests without interfering too much with national health care and care operations.

11.5. Implications for the Nordic Vision 2030

Stakeholders working in the cases outlined here all contribute, in one way or another, to reaching the main goals of the Nordic Vision 2030 to foster a greener, more competitive and socially sustainable Nordic Region (https://www.norden.org/en/our-vision-2030).

In terms of social sustainability and keeping communities in the Nordic Region liveable and safe, access to services is fundamental. It is important to understand how (the lack of) access to services affects people's lives, feelings of security and trust, and the impact collaborative regional dynamics in the private and public sector has on the quality of service delivery. Our cases shed a light on both these key dimensions.

For strengthening competitiveness, strategies to mobilize marginalized groups outside the labour market to re-enter the market are needed. Here the Danish case provides good food for thought. Ultimately, as all cases have demonstrated, collaboration between companies, NGOs, research and civil society is of fundamental importance for a green and socially just transition. The upcoming work of Nordic Thematic Group on Green and Inclusive Rural Development (2021-2024) is geared towards fostering these goals.

12. The future direction of Nordic collaborative governance: key recommendations

The Covid-19 health crisis is emblematic of the types of global challenges we face in an increasingly interconnected and interdependent world. The Nordic Region is not resistant to global threats, such as pandemics and climate change, so Nordic countries and regions must work together and pool resources to help overcome these common threats. Collaboration is also essential for overcoming challenges faced across the Nordic Region, including growing urban-rural disparities, a rapidly ageing population putting pressure on health and social care systems, youth education and unemployment, shortages of housing, and the integration and inclusion of immigrants into Scandinavian society.

Common and shared challenges, however, need not be the only driver of collaboration, with Nordic countries and regions equally capable of working together to maximize the potential for regional economic growth and development presented by new policy thematic areas, such as, e-healthcare, blue growth and green growth opportunities. Indeed, the Nordic Council of Ministers ambitious climate change targets require concerted cooperation and collaboration across the whole of the Nordic Region. Collaboration is particularly important in the development of sustainable circular-economy and bioeconomy initiatives based on shared resources and materials.

Collaborative governance can contribute significantly towards solving common Nordic challenges and meeting the Nordic Council of Ministers policy goals for the next programme period. The following recommendations, targeted at Nordic policymakers and stakeholders, are designed to improve existing Nordic collaborations, and encourage the development of new long-term collaborative governance mechanisms in the Nordic Region. In the future, Nordic policymakers and stakeholders can foster more effective and efficient collaborative governance processes by:

- **Exploring the possibility of replicating collaborative governance models in different Nordic countries, regions, and municipalities.**

- **Ensuring that all relevant stakeholders are actively engaged in collaborative activities to prevent overrepresentation of dominant groups and sectoral actors.**

- **Striking a balance between policy relevant stakeholders and technical expertise to maximize the potential of using recent technological developments in policy implementation and delivery.**

- **Investigating all public-private funding potentials to ensure that successful collaborations can continue beyond the life cycles of EU and nationally funded projects.**

- **Maximizing the potential of ICT solutions for engaging citizens in collaborative processes.**

- **Developing bottom-up collaborations built on local knowledge and place-based expertise.**

- **Considering how policies developed in regional and municipal level collaborations can be upscaled to the national and transnational levels.**

- **Ensuring that cross-border collaborations are not determined solely by geographic proximity, but on the basis shared policy priorities, challenges, and economic growth opportunities.**

- **Increase the quality and reliability of interregional and cross-border data availability by working with national and regional level statistical experts.**

Acknowledgements

About this publication

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Report of the project Municipal and Regional collaboration on service provision and social innovation – carried out under the Nordic thematic group for sustainable rural development.

Cover photo: Unsplash.com
Layout: Marija Zelenkauskė, Nordregio

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ISBN: 978-91-8001-013-9

ISSN: 1403-2503

DOI: http://doi.org/10.6027/R2021:4.1403-2503