SHERPA
Rural Science-Society-Policy Interfaces

MAP Position Paper

DIGITALISATION IN RURAL AREAS

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Summary and key messages

This Multi-Actor Platform (MAP) position paper was developed within the Horizon 2020 project, Sustainable Hub to Engage into Rural Policies with Actors (SHERPA). The Swedish MAP is located in Norrbotten, a large region in the north of Sweden. One of the reasons for choosing digitalisation as a topic in MAP Norrbotten is the potential of digital services in this and large sparsely populated region. Another aspect is the problem of uneven access to fast broadband connection, which can increase digital exclusion, especially when the digital transformation will speed up. This Position Paper for MAP Norrbotten has been developed throughout workshops and meetings with the MAP members during 2022. Here follows a summary of the key messages from the MAP:

- To combat the digital divide, different sources of EU funding need to be made available, and not just providing project support. More long-term funding would enable several of the initiatives ongoing to be scaled up and multiplied to reach all inhabitants.
- Identify different ways of using an equalisation system for broadband expansion. For instance, one way for a public actor to ensure private and/or public investments in broadband in remote rural areas is to assess the possibility of using surplus resources from other sectors to finance the broadband expansion.
- Broadband implementation strategies must be more locally adapted. Local village associations (*in Swedish: Byaföreningar*) and local companies should be involved in digitalisation, digital transformation and broadband expansion.
- Broadband expansion need substantial monitoring of procurement, implementation and broadband expansion agreements. Furthermore, the tasks and responsibilities of the different actors regarding digitalisation and digital inclusion need to be clarified and communicated.
- Examples of digital initiatives that already exist in the region need to be examined to see how and where they can be scaled up to more villages.
- Continue to investigate the possibility of implementing Digital hubs for schools in rural areas that have a hard time to attract qualified teachers. This would also make it easier to avoid long commuting times for students to urban locations.
- Allow for national recruitment and remote working to enable people to stay in or move to rural areas while working at a workplace located in urban areas.
- Increase the use of science-policy-society cooperation to build "attractiveness from within the locality" and include it in discussions and policy decisions about digitalisation in rural areas.
- Use and implement the research on digitalisation that already exist and continue to produce research with local actors, not about local actors.
- Continue producing research on digital capital and the differences between urban and rural areas, cooperation between municipalities to make efficient use of resources, also on the different alternatives for an equalisation system for broadband expansion, as well as on attractiveness and the coordination of transports and make research involving young people.

1. Introduction

The Sustainable Hub to Engage into Rural Policies with Actors (SHERPA) is a four-year project (2019-2023) with 17 partners. SHERPA receives funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 862448. The project aims to gather knowledge that contributes to the formulation of recommendations for future policies relevant to EU rural areas, by creating a science-society-policy interface which provides a hub for knowledge and policy.

The science-society-policy interface in SHERPA is implemented by setting up and running 41 Multi-Actor Platforms (MAPs) in 20 European countries, and one at EU-level. The actors invited to take part in each of the MAPs are from the spheres of science, society (civil society and business) and policy (officials and politicians). One of these MAPs is located in the Swedish region of Norrbotten, the so-called MAP Norrbotten. The MAP Norrbotten has during 2022 focused on the topic digitalisation and the three sub topics: the rural digital divide, the attractiveness of rural areas and opportunities for strengthening local governance.

The MAP Norrbotten is geographically centred around the northernmost region in Sweden. It is a large and varied region, spanning over 97 000 km2, with a coastline, vast forests, and mountainous areas. Norrbotten is one of 21 regions in Sweden and have about 250 000 permanent inhabitants. The region borders to both Norway and Finland, which indicate additional inhabitants that commute for work and tourism as temporary inhabitants throughout the year (*Regionfakta Norrbottens län*, 2022). The latter years booming green and industrial investments in data storage, mining, energy and battery production have changed the region and created a situation where some of the previously shrinking municipalities in Norrbotten have to respond to a new situation and sometimes even expand. The new circumstances combined with old preconditions of large distances and great nature provide an opportunity to use digitalisation to create an attractive region, and especially attractive rural areas.

This report begins with a knowledge overview of digitalisation in Norrbotten based on the SHERPA Discussion Paper on digitalisation developed by the SHERPA consortium (Brunori et al. 2022). Chapter 4 of the report includes the opinions and thoughts of the members of the MAP when it comes to needs, challenges, existing interventions and actions, knowledge gaps and recommendations in relation to digitalisation in Norrbotten. The chapter is based on interaction with the MAP members during 2021 and 2022, more specifically two digital introductory workshops, an online meeting, a lunch-to-lunch workshop, and follow-up online workshops in May and in September. The MAP members have also been given the opportunity to provide written input, comments, and remarks to the results of this report.

The MAP Position Paper provide answers to the following key questions:

- What are the needs of the area covered by the MAP in relation to digitalisation?
- What are the policy interventions already in place, and what are examples of actions taken by local actors addressing these needs implemented on the area covered by the MAP?
- Which policy interventions (i.e. instruments, measures) are recommended by MAP members to be implemented at the local, regional, and/or national level? How can the EU support these interventions?
- What are the knowledge gaps and what research projects are needed?

2. Current situation based on background research and evidence

The SHERPA Discussion Paper on digitalisation (Brunori et al. 2022) provides a frame to understand digitalisation in Norrbotten, Sweden. The Discussion Paper includes a synthesis of EU policy aims, such as the Communication on A long-term vision for EU's Rural Areas - Towards stronger, connected, resilient and prosperous rural areas by 2040 with aim to strengthen rural areas (European Commission, 2021a). As the title entailed, the long-term vision identifies four main areas of intervention. Digitalisation is presented as a crosscutting element relating to all four areas and their various functions. Europe's current Digital agenda, which includes the communication 2030 Digital Compass: the European way for the Digital Decade, is also mentioned. The agenda states that actions are needed to improve quality of life in rural and remote areas and that digitalisation is one important element. The SHERPA Discussion Paper on digitalisation (Brunori et al. 2022) are structured around three sub-themes identified as relevant for rural areas, namely:

- the rural digital divide,
- the attractiveness of rural areas and
- opportunities for strengthening local governance.

The **rural digital divide** depends on on the interaction between at least three factors: connectivity, digital capital and motivation (Brunori et al. 2022). On a European level, the data available for connectivity shows that while the internet gap between urban and rural areas on broadband has been reduced in the last years, the gap related to the fixed very high-capacity network (VHCN) has increased. The main reason for the increased gap is said to be that the demand is insufficient to meet the cost of the infrastructure investment from a market-perspective (Brunori et al. 2022). Brunori et al. (2022) mean that this demonstrates that the digital divide is a dynamic phenomenon, and proactive approaches are needed to respond to the uneven access. Digital capital is presented as the second determinant and refers to resources needed to benefit from digitalisation, such as digital competence and equipment. The third determinant presented is digital motivation, which refers to the level of acceptance towards digital solutions.

Digitalisation can support the development of **attractive rural areas**. Brunori et al (2022) identify four factors of attractiveness for a place; the quality of the rural environment, the quality of social relations, the quality of work, and the quality of services. Digital technologies and social media can for example help to raise awareness about local products and natural resources, and to promote the place and its environments. Moreover, COVID-19 has accelerated a process of rethinking the role of rural areas as attractors of working professionals who can work at a distance. Although the pandemic has seen populations decline in some larger cities, early evidence suggests that we are unlikely to see a post-COVID mass exodus from cities (Correa, 2022; Randall et al. 2022; Vogiazides & Kawalerowicz, 2022). Digital solutions can also be a tool to provide welfare services, such as health care, care and school. This is especially relevant in large sparsely populated areas with large distances and municipalities with limited resources.

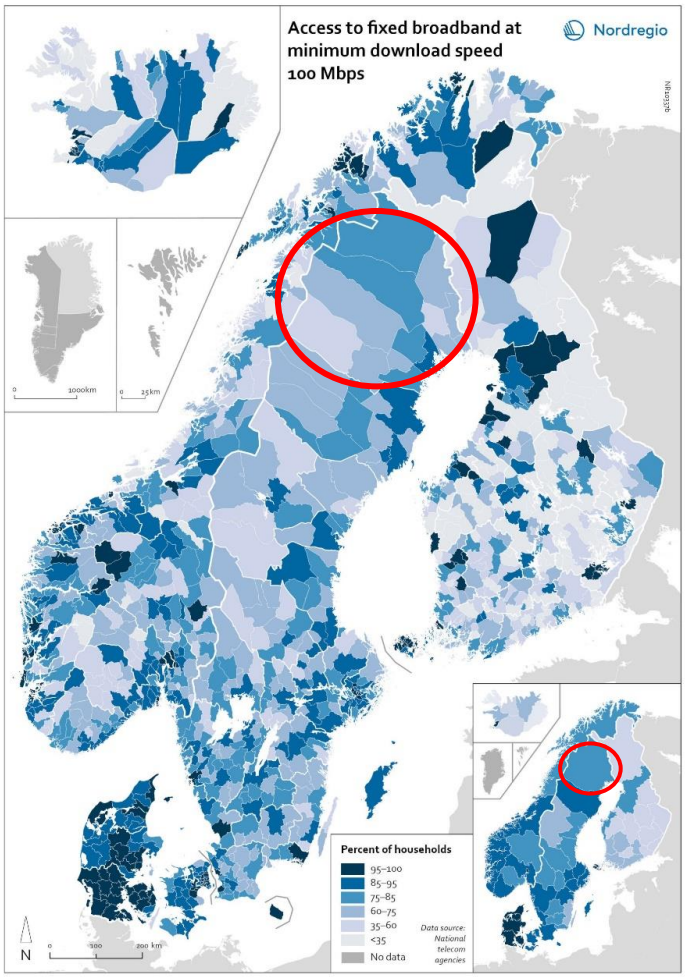
Digitalisation also change the forms and ways of societal **governance**. Sectoral specialisation and hierarchical relations are unfit to solve challenges that are by their nature cross-sectoral and need integrated approaches. Digital tools and information provided via digital channels can change the way governments engage with citizens. Providing detailed information can help civil society to raise issues in the public debate and encourage administrators to take action. Digital information can also help citizens make informed choices, and to make it just as feasible as direct feedback mechanisms (Brunori et al. 2022).

One of the reasons for choosing digitalisation as a topic in MAP Norrbotten is the possible potential of digital services in this large and sparsely populated region. Another aspect is the problem of uneven access to fast broadband connection, which can increase digital exclusion, especially when the digital transformation will speed up. In a report about access to essential services in rural areas in the Nordic countries, Slätmo et al. (2022) highlight that in 2018 Finland and Sweden were the European countries with the largest gaps between

rural and urban households when it comes to access to fast broadband and to next-generation access (cf. Ormstrup Vestergård et al., 2020; Randall et al., 2022). Focusing on data from the National telecom agencies in the Nordics, however, show that Norrbotten does not stand out as the worst region regarding broadband access in the Nordics (map 1). Moreover, according to a ranking by The Digital Economy and Society Index (DESI) in 2021, Sweden is ranked as the third most digital country in EU. Having high digital competence, high access to high-speed broadband and high share of digital public services are some of the reasons for Sweden's high ranking (European Commission, 2021c).

The Swedish broadband strategy state that 95 % of all households and businesses in Sweden should have had access to internet of 100 Mbit/s in 2020. In 2022 only 88 % of households and businesses have access, which means this goal is not met. The other Swedish broadband goals and how these can be interpreted will be further discussed in section 4.2 *Existing Interventions and Actions*.

Digitalisation is high on the agenda in the regional strategies in Norrbotten, for example both in the regional development strategy and in the strategy for smart specialisation. This will be discussed further in chapter 4.2. In the regional business strategy, interviewed business managers in Norrbotten highlight broadband and digitalisation as preconditions to reach the goal to increase growth with 25 % until 2025 (Region Norrbotten, 2018). In another report on digitalisation and businesses in Norrbotten it is described that even though a large share of companies, 66 %, mean that they can use computers and common software without problems, there is still a significant amount who says they would need extra support to benefit from digitalisation (Örtqvist, 2017).



Map 1. *The map shows the proportion of households that had access to fixed-line broadband with download speeds >100 Mbps (superfast broadband) at the municipal level, with darker colours indicating higher coverage. The red circle marks the Norrbotten region (Penje, 2022).*

Research on how to carry out the digital transformation in an inclusive way is ongoing in the north of Sweden. Rural Living Labs is one participatory process that is used to include and empower a multitude of rural stakeholders in digital transformation activities (Habibipour et al. 2021). Participatory processes are often of greater importance in rural areas since the areas are at a greater distance from decision makers. This often results both in a lack of accurate statistic about the locality, but also in the lack of understanding of the local people's needs and stories. This in turn, can lead to a lack of trust between local actors and central or regional governments (Beer, 2014; Lewis, 2018; Slätmo et al. 2021).

3. Position of the Multi-Actor Platform

3.1. Identified needs

The MAP members addressed that continued implementation of digital infrastructure is crucial to enable digital inclusion, creating attractive rural areas via digitalisation and utilise digitalisation in societal governance in Norrbotten and Sweden.

Rural digital divide

In the knowledge overview of digitalisation in Europe, used as a basis for the discussion in the MAP, it is described that digital capital and digital motivation generally are higher in urban areas compared to in rural areas (Brunori et al. 2022). The members in MAP Norrbotten question the accuracy of this statement. On the contrary, the MAP members experience that people in rural areas generally want to learn how to use digital solutions, if they need to and if they are introduced to it. The MAP members therefore consider that the concepts digital capital and digital motivation needs to be nuanced. Pockets of poverty, exists both in urban and rural areas and even though people might have lower income in rural areas it is also cheaper to live there. The MAP members mean that the motivation to use digital tools is high in rural Norrbotten, but the access to digital services is limited. Digital services such as hybrid delivery services, health and elderly care solutions, and digital grocery stores are described as not possible to access in those villages or for those households that do not have access to internet (via broadband or mobile services). It is also described that private actors do not always provide e-services to rural areas.

Even though the MAP members tone down the importance of digital capital and motivation as explanatory factors for the use or lack of use of digital services in Norrbotten, they agree that some groups are more excluded than others. For example, it is described that some older inhabitants do not perceive a need to invest in digital infrastructure to and in their houses, as they have managed fine without it so far. This can however become an issue for future generations and for the rural villages which will decline in attractiveness. It is also mentioned that people without bank-id have limited access to digital services. This could be for example older people, but also people without a Swedish identification number such as people who are newly arrived in Sweden.

> *In the region we have found other ways of solving problems, as we cannot count on the digital solutions (member of MAP Norrbotten in April 2022).*

The experiences in Norrbotten show that it is not only about market failures and demand that are the main problems for the slow implementation of digital infrastructure. IT-companies are the ones that are driving the process and for them it is not interesting to invest in IT-solutions in small rural towns and villages. The situation is expressed as a procurement failure, where the policy actors have placed too much responsibility on the individual and on "the local market" to implement digital infrastructure and services. The MAP members describe that the current situation, where the state does not take enough responsibility for the process of implementing digital infrastructure, creates an ineffective use of resources. This happens for example when the IT-companies that win the procurements in different areas do not coordinate with each other. In addition, the IT-agreements for installation of broadband are described as "a nightmare", as the content and obligations of the agreements often are unclear to the individuals that are asked to sign them. There is a lack of trust towards the IT-companies, and they are therefore not perceived as the right actor to communicate with the rural inhabitants on why they should install broadband.

It is currently possible to use the state broadband funds (*in Swedish: Bredbandsstöd*) for implementing digital infrastructure, that is digging down the broadband cable. However, the broadband support in Sweden needs to be co-funded by a local or regional actor and considering the long distances in the region the investment

to dig down broadband between villages can be extreme costly. Therefore, in regions such as Norrbotten it is hard to find actors that have the financial capacity to invest. On top of that, as the ownership of the digital infrastructure can be seen as a security issue the MAP members see the need for a public actor to ensure broadband coverage within the territory of Sweden. This especially in areas with long distances between villages.

There is an outspoken need for a public actor to monitor the procurements, the implementation, and the agreements related more closely to the instalment of broadband.

Civil society organisations do a lot of work for digitalisation of rural areas in Sweden when it comes to preparing communities for implementing broadband and digital solutions. They are in many instances working 'in the gaps', with persons and with issues that the public sector has not yet grasped or created policy around, or before private actors have seen a growth potential. The members of MAP Norrbotten however express practical digital challenges for civil society. For example, civil society organisations that work for implementation of broadband in villages - local village associations - (*in Swedish: byaföreningar*) are categorised as a company by the IT-companies, which means they pay a higher sum for connections and tariffs than individual households. These civil society organisations do however seldom have capital but is rather a formation of individuals that come together to work for the common village.

> *The members of MAP Norrbotten see a challenge in creating "digitalisation for human needs", i.e., with the help of digital tools create increased democracy, defend rights and trust in society.*

Attractiveness of rural areas

The MAP members perceive access to services as one of the most crucial elements for attractive rural areas. Digitalisation can support rural service delivery and the attractiveness of rural areas by creating and maintaining the feeling of a community, for instance by making it easier for newcomers to feel at home as they can keep contacts with family and friends from other places while at the same time establishing a new life. The MAP members also mentioned that rural attractiveness is often tied to a strong sense of community, which can be upheld by digitalising common village meetings (*in Swedish: byamöten*), where people can log in even though they are not physically present. This can increase both knowledge sharing and the engagement in the village. To create opportunities for rural areas to be attractive also in the future and for future generations, it is perceived as important to increase the speed of implementation of broadband in the region.

In between the sub-themes rural attractiveness and strengthening local governance there are also the issue of digital welfare services. Many municipalities in Norrbotten have experienced a decline of service in general, but also public welfare services such as care facilitates and schools. Implementing digital services such as distance spanning health solutions can be a way to use resources more efficiently and providing opportunities for people to live in rural areas. To attract or maintain young people and families, digitalisation can also enable some form of digital school hubs. This can be especially important for special- or advanced subjects as well as for second languages. However, it is important that these new solutions are implemented in a way that does not reduce the quality of services or increase the digital gap.

Digitalisation can enable rural attractiveness by facilitating the possibility to live in rural areas and still work with what you want elsewhere. The work-life balance structures have to a large extent been developed in urban settings, and the members of the MAP Norrbotten therefore see a need for employers to allow remote work and enable multi-locality work (from home and a secondary residence). The new investments in Norrbotten in data storage, mining and energy come with possibilities of newcomers, jobs, and new tax revenues. However, new investments could also mean that the experts employed for the new jobs are living in the area shorter periods, in a "fly in fly out" type of work mode, or that the experts are living in urban

areas working remotely in rural areas. Digitalisation as a societal process has both its pros and cons for the regional and local development.

Photo: *Possibilities to charge your electronics on the public transport in Luleå, Norrbotten, indicate how the digitalisation is included in people's everyday lives. Source: Slätmo, E.*

Strengthening local governance

At one of the Norrbotten MAP workshops, members found that great responsibility is placed on civil society, public sector and academia to ensure that the societal development in Norrbotten is done in a fair and democratic way, and that it creates societies that are attractive in the long term and for future generations. The question is whom the big societal change, with the new industry investments in data storage, mining, energy and battery production in Norrbotten, are made. Digitalisation is viewed as a tool to enable learning and create cooperation between actors.

Enhanced knowledge about regulations and how digital tools can be used to overcome physical distances and increase dialogue with inhabitants, are mentioned as needed. It is discussed that participatory processes between public actors and civil society, companies, researchers, and other actors are formalised within regional and municipal planning processes. It is however mentioned that most of the engagement from people in the rural areas are captured in local village associations (*in Swedish: Byaföreningar*) and other civil society organisations and not in the processes with the region and municipality. To ensure that the ideas and future visions from these persons are captured it was suggested that one actor is given the responsibility to further dialogue between municipalities and regions on the one hand, and the citizens and local village associations, on the other hand. It is noted that this form of communication or participatory processes with citizens takes a lot of resources, but it is still viewed as important. To not burden the public actors with

another task, it could be one idea to further include consultations with the local village associations and other civil society organisations in the development of the regional and municipal plans.

There is an association of collaboration between municipalities within the region Norrbotten, and a special political board has been established for solving common digital issues (Luleå kommun, 2022). The work in this board on digital issues, is however described by the members in the MAP Norrbotten as slow, with few actions. The strong local self-government in the municipalities of Norrbotten is mentioned to be challenging for the collaborations. At the same time, digital solutions can save resources for municipal administrations since it both can enable cooperation as well as make some administrative services more efficient.

3.2. Existing interventions and actions

National and regional policy initiatives

The Agency for Digital Government (DIGG) (*in Swedish: Myndigheten för Digital förvaltning*) has the mission to coordinate and support digitalisation in public sector in Sweden. In addition, there is a governmental council to support the government's work with digitalisation, but in September 2022 some of their missions are transferred to DIGG.

According to the library law (SFS 2013:801, § 7), libraries have the mission to act to increase knowledge on how information technology can be used to collect knowledge, learning and participation in cultural life. According to a study by Swedish Association of municipalities and regions (*in Swedish: Sveriges Kommuner och Regioner*), 80 % of all public libraries have activities to increase the digital competence. In Norrbotten, the distance to a library can be long and only six out of fourteen municipalities have "book busses". These busses provide mobile library services such as book loans and digital support. As can be noted in table 2, also other actors provide similar digital services in Norrbotten.

Another important actor is the Swedish Agency for Economic and Regional Growth (*in Swedish: Tillväxtverket*) which has several initiatives for digitalisation for rural and regional development. For instance, a network of digitalisation coordinators at the 21 Swedish regions (Tillväxtverket, 2022a) and initiatives for digitalisation of small rural businesses (Tillväxtverket, 2022b). It can be noted that also other types support schemes from the Agency indirectly are focused on digitalisation, such as support for commercial services where digitalisation can be included, support to democratic activities or development of local action groups that work with the digital transformation.

The national policy context for digitalisation consists of two main strategies, the National digital strategy (Regeringskansliet, 2017) and the Swedish governments broadband strategy (Näringsdepartementet, 2016; SFS 2007:951). The objective of the government's digitalisation strategy is that Sweden should be the best in the world at utilising the opportunities created by digitalisation. The strategy has five interim objectives: digital competence, digital innovation, digital security, digital infrastructure and digital management. The aim of the national broadband strategy is that Sweden should have full access to connection in 2025. The strategy is implemented and assessed by the national authority The Swedish Post and Telecom Authority. The Authority has the mission to strengthen the development of communication solutions for people with disabilities and special needs. This is done both with new tools and solutions and to gather and share knowledge and guidance (Post- och telestyrelsen, 2022). The Authority is also in charge of distributing 3,3 billion SEK (approx. 315 000 000 Euro) between 2020 and 2025 in broadband support (2022). The three policy goals and the 2022 national assessment is presented in table 1.

Table 1. Swedish National broadband goal and status assessment 2022

National broadband goals and national assessment in 2022
Goal 1: In year 2020, 95 % of all households and businesses in Sweden should have access to broadband of at least 100 Mbit/s. **Assessment 2022: on a national level 88 % of households and businesses in Sweden have access to internet of 100 Mbit/s. This is a 2 % increase compared to the previous year (2020-2021). Goal 1 of 95 % in 2020 is still not met.**
Goal 2: In year 2025 all of Sweden should have access to high-speed broadband. **Assessment 2022: On a national level, 95,8 % of all household and businesses have access to 1 Gbit/s or 'fiber in absolute proximity'. In sparsely populated areas 76,6 % of all households and businesses had access to 1 Gbit/s or 'fiber in absolute proximity', in October 2021. For Norrbotten the access to** 1 Gbit/s or 'fiber in absolute proximity' was lower than the Swedish average. For households in rural areas of Norrbotten **the access increased with 3 % between 2020 to 2021, from 40 % to 43 %. This compared with households in urban areas of Norrbotten, within which 89 % had access to** 1 Gbit/s or 'fiber in absolute proximity' **in 2020, and 90 % in 2021.**
Goal 3: In year 2023 all off Sweden should have access to stabile mobile services of good quality. **Assessment 2022: in October in 2021, a total of 92,8 % of all geographical areas where people usually spend time in Sweden had access to mobile services. In urban areas still around 5 % lack good coverage, in rural areas it is mostly along roads with low traffic flows mobile services are lacking (**The Swedish Post and Telecom Authority, 2022**).**

Although it might seem like a technical detail it is worthwhile to explain the term 'fiber in absolute proximity', mentioned in goal 2 in table 1, as it affects the understanding of access to digital infrastructure, especially outside urban areas. The term is used by the Swedish Post and Telecom Authority and refer to the assumption that those buildings that are geographically in an area where fiber is installed in other buildings, or if the fiber can be installed at a cost of maximum 40,000 SEK (approx. 3,810 Euros), then the household or business are categorised as having access to fiber in absolute proximity (The Swedish Post and Telecom Authority, 2022). By already counting these households and businesses as having access to high-speed broadband, comes with the risk of excluding the rural persons not having access to that amount to invest in digital infrastructures.

Regional and local initiatives and actions

The national digitalisation strategy provides a framework for the regions. Region Norrbotten have operationalised the national digitalisation strategy into the Regional Development Strategy (Region Norrbotten, (2019). In the regional development strategy for Norrbotten, digitisation is an integrated part. Several goals and areas of action highlight how digitisation has created new conditions and possibilities. For example, digital communication is highlighted as of utmost importance for the intervention areas attractive living environments, skills supply and innovations and entrepreneurship. In addition, in the strategy for smart specialisation, the first identified specialisation is *A. Digitalisation that create global competitiveness* (Region Norrbotten, 2020). Both the regional development strategy and the strategy for smart specialisation will be updated during 2022/2023. As mentioned above there is also a joint political digital board (*In Swedish: E-nämnden*) established for solving common digital issues that the 14 municipalities within the region agree upon. This political board has been active since 2013 and has for instance developed common procurement processes for IT-solutions in the public sector and created an IT-company that is owned by the region and the municipalities (IT Norrbotten 2022; Luleå kommun, 2022).

Many digital interventions and actions are already ongoing in Norrbotten to address the identified needs and challenges (see table 2 for three different examples). Several of the initiatives can be scaled up and multiplied to reach all inhabitants within the region. Trends towards short term project and innovation-based funding is to some degree seen as a hindering factor for that to be achieved. Many of the regional and local initiatives are collaborations between public actors, universities, and other local societal actors.

Table 2. Examples of actions taken by local actors

Examples of digital initiatives and actions at local level in Norrbotten
Local digital service to increase liveability and attractiveness **The digital local store in Moskosel was opened in December 2020. Earlier the same year Moskosel was ranked as having the worst societal services in Sweden (SVT,2020). The people living in the village were tired of seeing services disappear and organised themselves to finance the store, which in practice meant they did not have to drive long distances for groceries. The store is unmanned and open all hours. To enter the store, you scan a QR code and sign in with Bank-id. If Bank-Id is not possible for some reason, other options are available. The store is run by an economic association (*in Swedish: ekonomisk förening*).** https://www.moskosel.nu/handlarn/
DigiBy - Digital services in villages **The project will carry out pilot tests of new digital solutions for service points in villages in Norrbotten. The project aims to increase knowledge about methods and applicability of digitalisation opportunities for service development in rural areas. The project is coordinated by Luleå University and is run in cooperation with Region Norrbotten, municipalities in Norrbotten and the Country Administrative Board in Norrbotten.** http://digiby.se/
Digital hub to create smart and digital rural areas **The hub in Skaulo** in Gällivare municipality **was started as part of a nationwide digital service network called Digidel, which was a campaign to increase digital participation in 2013. After this the network continued receiving governmental missions in 2018 and 2019. Today there are 26 DigidelCenters in Sweden.** The digital hub is today **run by Soutujärvibygden (an economic umbrella organisation with aim to further cooperation and the member's economic interests as well as strengthen service in the Soutujärvi-area). The idea is to be a** centre **where all citizens can come and receive digital support with no cost, to be a** centre **for municipal citizen service and be part of a national quality management (*in Swedish: kvalitetsarbete*) within digital supervising, digital competence and digitalisation.** Servicekontor – Soutujärvibygden (soutujarvi.se)

3.3. MAP recommendations

Based on the identified needs and insights on what is missing regarding existing interventions and actions, the members of the MAP Norrbotten have identified the following recommendations for future policies and research agendas.

3.3.1. Recommendations for future rural policies

EU-level policy interventions:

- Provide different types of funding. Today most funds are eligible through project support, which can be ineffective since there is no longevity of the projects are not self-sustained when support ends and its knowledge has not been institutionalised. This also reduces flexibility since all elements need to be fitted into the narrow frames and planning periods of the projects. More long-term funding would enable several of the initiatives that are ongoing to be scaled up and multiplied to reach all inhabitants.
- Provide more flexibility regarding regulations of funding. If the funds eligible to start a project could be linked with investment support and other forms of project support, it would be easier to get past the pilot phase of projects.
- Investigate different ways of using an equalisation system for broadband expansion. This could be done in different ways. However, it is important that the solutions do not further enhance digital exclusion. Subsidisation should be needs-based and not automatically earmarked to particular group. In some cases, the subsidy could be based on a societal interest, for example to facilitate for home care service personnel to carry out their job in rural areas. It could also be based on distance, so those facilities and households that can eligible to apply for and receive a higher amount of funds are those that have further away and thus the highest investment needs to install fixed broadband. The equalisation system and funding can be based either on EU or national level.

National level policy interventions

Digital divide

- Acknowledge that the need of digital infrastructure is the same in the whole of EU and Sweden, but that the geographical prerequisites are different. The strategies for implementation must therefore be more locally adapted. One way for a public actor to ensure private and/or public investments in broadband in remote rural areas is to investigate the possibility of using surplus from other sectors to finance the broadband expansion, for example the national surplus of the expansion of 5g. The surplus from urban areas can also be placed in rural areas where costs are higher.
- A substantial monitoring process is needed regarding procurements, implementation and agreements of broadband expansion. This should be the responsibility of a public actor with aim to protect the interest of the individual and to secure cohesion over the country. Further, the missions and responsibilities of the different actors regarding digitalisation and digital inclusion need to be clarified and communicated.
    - The National Agency for Public Procurement (*in Swedish: Upphandlingsmyndigheten*) could look at the possibility of creating a check list or regulation scheme for public authorities.
    - The Agency for Digital Government (DIGG) (*in Swedish: Myndigheten för Digital förvaltning*) could develop new methods for or guide the dialogues between the private IT-companies and rural inhabitants. It is possible that a "neighbour to neighbour" approach could work better than the current situation, i.e. that a local actor/individual are part of the meeting with the IT-company to explain why broadband is important.
    - The Swedish Post and Telecom Authority can extend the broadband support (*in Swedish: bredbandsstödet*) to include full public support for digital infrastructure in areas with long distances in between houses. At present the broadband support in Sweden needs to be co-funded by a local or regional actor. The long distances in

regions such as Norrbotten make the investments not financially viable, making it challenging to find such investors.

  - The method for measuring access to broadband by The Swedish Post and Telecom Authority comes with the risk of excluding persons that cannot afford to pay 40 000 SEK for broadband. To avoid this risk, it is recommended that The Swedish Post and Telecom Authority investigate other ways of measuring access.

Attractiveness

- Continue to investigate the possibility of implementing Digital hubs for schools in rural areas that have a hard time to attract qualified teachers, and to avoid long commuting times for students to urban locations. Digital hubs for regular school subjects, for special needs or for language courses in the mother tongue (*in Swedish: hemspråksundervisning*) is a need that could be solved by teachers that give classes from a distance, while the personnel available for the children, youths and adults in the hub is not necessarily trained teachers.
- Allow national recruitment and remote work policies that enable people to stay in or move to rural areas when working at a workplace located in an urban environment

Governance

- The status of local village associations (*in Swedish: Byaföreningar*) should be changed from being regarded a company by the IT-companies to a association of individuals. That will make it less expensive and easier for the local village associations to assist in implementing broadband, which will benefit the regions.

Regional and local level policy interventions

Digital divide

- Identify good examples of digital initiatives that already exists in the region and see how and where they can be scaled up to more villages.
- Include civil society (for example local village associations, *in Swedish: Byaföreningar*) and local companies in the planning of digitalisation, the digital transformation and in the expansion of broadband.

Attractiveness

Work for a change of perspective and try to use digitalisation to create more community and "attractiveness from within the locality". The needs should be presented by local actors and driven through intersectoral cooperation and local engagement and knowledge with support from public sector. An example is the store in Moskosel (see table 2).

Governance

- Increase the use of science-policy-society cooperation to make use of the research that already exist and include it in discussions and policy decisions about digitalisation in rural areas.
  - This can be part of the process of updating the Regional Development Strategy. However, the roles need to be clarified and the public actors should be the summoning actor.
  - The Region and the municipalities could consult the local village plans (*in Swedish: byutvecklingsplanerna*) or coordinate with the member association Norrbotten's municipalities (*In Swedish: Norrbottens kommuner*) and the political board for digital issues (*In Swedish: E-nämnden*).

3.3.2. Recommendations for future research agendas

- Use and implement the research on digitalisation that already exist. A lot of research exists about rural areas, attractiveness, digitalisation and digital inclusion, but it is not used in policy. The question is rather how to include it in discussions and policy decisions.
- Continue to produce research with local actors, not about local actors. More regional and local development projects with researchers, policy makers, local businesses and civil society actors are needed. Investigate ways of to engage rural municipalities that do not have the resources to participate in projects.
- Continue to produce research:
    - about digital capital and the differences between urban and rural areas. Are there really different or are there other factors that play in, for example, lower income but a reduced cost of living, second homes and where people are registered, pockets of poverty in both urban and rural areas?
    - with young people in rural areas to understand how to best include them in discussions about their region and their future.
    - about how to make small municipality administrations work with little resources and few people. Staff within the municipal administration must have "many hats" and there are possibilities for more cooperation between municipalities.
    - on the different alternatives for an equalisation system for broadband expansion. The focus should be a system that does not further enhance digital exclusion nor the digital divide.
    - on attractiveness and the coordination of transports. How to transport both goods and people at the same time? Increase research about digital platforms for car-pooling and other mobility solutions.

Conclusions

During 2022 the MAP Norrbotten has focused on digitalisation in regard to the rural digital divide, the attractiveness of rural areas and opportunities for strengthening local governance. The booming green and industrial investments in Norrbotten in recent years point towards a large potential for a twin green & digital transition.

The MAP members found that continued implementation of digital infrastructure is crucial to enable digital inclusion, to create attractive rural areas via digitalisation and to utilise digitalisation in societal governance - both in Norrbotten and throughout Sweden. Crucially, such implementation should have the people at the centre and focus on the local needs while allowing for flexibility in solutions and encourage new ways of working.

The public broadband support in Sweden today requires co-funding by a local or regional actor in order to be approved. Considering the long distances in the region the investment to dig down broadband between villages can be extreme costly. Therefore, in regions such as Norrbotten it is hard to find actors that have the financial capacity to invest in broadband between the villages. On top of that, as the ownership of the digital infrastructure can be seen as a security issue, the MAP members see the need for a public actor to ensure broadband coverage within the territory of Sweden. This especially in areas with long distances between villages, as the market solutions in place currently do not seem to be sufficient. This is evidenced by the fact that the goal of 95 % of all households and businesses in Sweden should have access to broadband of at least 100 Mbit/s in 2020 is still not met in 2022.

As regards to the EU-level, the MAP Norrbotten recommend providing more flexible and longer-term funding, and to assess the feasibility of an equalisation system for broadband expansion. To minimise the digital divide, the MAP in Sweden recommends investigating the possibility of using surplus funding from other sectors to finance the broadband expansion, for example the surplus of the expansion of 5g from urban to rural areas or using surplus from state-owned companies to invest in digital infrastructure in local areas where the market does not find it viable. It is also recommended that a public actor get the mandate to monitor the process and the outcome regarding procurements, implementation and agreements of broadband expansion. Increased acceptance of remote working and digital hubs for schools are recommended to increase the attractiveness of rural areas. From the governance perspective it is recommended to make use of the civil society organisations such as the local village associations in the implementation of broadband in rural areas. To enable enhanced implementation, it is recommended to not perceive these associations as having the same logic as companies.

A lot of digital initiatives are already ongoing in Sweden and Norrbotten. These and other initiatives can be scaled-up and inspire others in how to work, as long as the right technical, legislative and financial support is provided, and that an awareness of local adaption is utilised. This work is ongoing to further develop and make use of research results. Collaboration among the actors in Norrbotten is indeed needed to transform it into a green and digital region.

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Appendix 1 The methodology used in MAP Norrbotten to create this position paper

During this cycle, the MAP Norrbotten have had 5 meetings, online and physical. The engagement in the group has varied throughout the year. At the beginning of the year 2022, the MAP had 17 members from 13 organisations (including the Facilitator and Monitor). 2 of the members are from research organisations (university), 5 from policy or public administration, 4 from civil society organisations with a societal focus and 4 from civil society organisations with a business focus. In addition, the Facilitator and the Monitor, are both from a research institute. A few changes to the group have happened during the year, one person changed job and another one past their seat to another person in the organisation when the topic was decided. Below are more details about the meetings and workshops.

An online introductory workshops (7 December 2021 and 13 December 2021) aimed at presenting the SHERPA project, to get to know each other in relation to rural development and digitalisation, and to decide together how to work together and a relevant framing of the topic. In addition to the Facilitator and the Monitor, 7 persons attended the online meeting December 7, and 5 persons attended the online meeting December 13. The material was circulated after the meetings.

A meeting in February 2022 started with a round-table discussion from the 11 participants presenting one place in Norrbotten (or elsewhere) that are important for the persons personal or work-related interest for rural development. Also, the Facilitator and the Monitor added their input. The results were included in an interactive way using a map at the software program Miro.

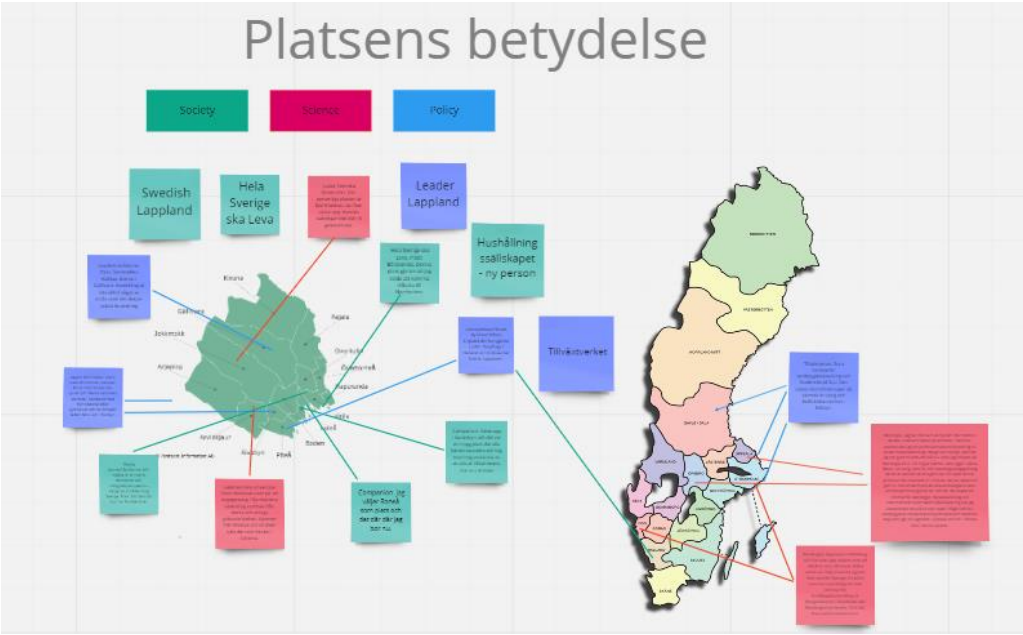

Image: From workshop in January 2022 about "the meaning of the place" (In Swedish: Platsens betydelse).

This was followed by a presentation on how SHERPA is linked to EU-policy, that was the foundation for a discussion on relevant ongoing policy and research projects in Sweden and Norrbotten. This resulted in a list of existing research and policy projects and processes that the MAP Norrbotten could give input to during the year. Input was also given via e-mail to the Facilitator and the Monitor before and after the meeting. The material was circulated after the meeting.

Photo: Some members of the MAP Norrbotten at the lunch-to-lunch workshop in Luleå 12-13 April. Source: Slätmo, E.

A lunch-to-lunch workshop (12-13 April 2022 in Luleå) was held as a co-creating opportunity for the MAP members. Although a doodle indicated more participants available the meeting was arranged with 7 MAP members and one Facilitator and one Monitor. The meeting started with lunch where we presented ourselves and sat down at two tables and ate together. After the lunch we started the more formal work allowing each member to present themselves more thoroughly, what they work with, and how digitalisation is relevant for them. After that the Facilitator and Monitor presented SHERPA news and made an introduction to the topic of digitalisation and rural areas based on a summary of the SHERPA discussion paper on Digitalisation (Brunori et al. 2022) and Nordregio knowledge of the topic in the Nordics, Sweden and Norrbotten. After an introductory discussion on anything missing from the presentation from the perspectives of the MAP members, the workshop focused on the four questions that was provided in SHERPA position paper template:

- What are the needs of the area covered by the MAP in relation to digitalisation?
- What are the policy interventions already in place, and what are examples of actions taken by local actors addressing these needs implemented on the area covered by the MAP?
- Which policy interventions (i.e. instruments, measures) are recommended by MAP members to be implemented at the local, regional, and/or national level? How can the EU support these interventions?
- What are the knowledge gaps and what research projects are needed?

We did, however, change the order of the questions, so we discussed the needs, knowledge gaps and research need on day 1, and the two questions regarding policy interventions on day 2. Each of the questions was discussed from the angle of the three themes that had been identified as most relevant for digitalisation in rural areas by Brunori et al (2022): the rural digital divide, the attractiveness of rural areas and opportunities for strengthening local governance. As the group was a suitable size for group discussions, we decided to have the discussions in the big group. To get a dynamic discussion, however, smaller group discussions was used for the question on needs and challenges. The Facilitator and Monitor took notes in

the power point used while the discussion was ongoing – so everyone could see what was written and how that was formulated. To end the theme of the first day on the needs regarding digitalisation in Norrbotten, and to set the scene for the following day with the theme of policy interventions, one the researchers in the MAP Norrbotten presented her work on digitalisation in Norrbotten. In the evening, the discussions on societal and rural development in Norrbotten continued at a joint dinner. The second day started with a summary of the results from day 1, going through what we had collected in our co-created notes and added any reflections that had arisen during the evening. We then focused on policy interventions. First, we looked at a list of existing policy interventions that the Facilitator and Monitor had created based on the MAP meeting in February. This list was used as a start for discussion, and we soon realised that a lot is going on regarding digitalisation for attractive rural areas in Norrbotten. The meeting ended with a walk through of the process until SHERPA ends, and what happens next. The material from the meeting was circulated to the members.

Photo: A lunch walk on the ice in central Luleå during the SHERPA MAP Norrbotten meeting in 12-13 April. Source: Slätmo, E.

A following-up workshop was arranged 3 May as an online meeting open to all members of the MAP. The intention was to revisit the material co-created at the lunch-to-lunch workshop in Luleå, to go through it and see if anything was missing, and if some points was more important than others. Unfortunately, not that many members could attend this meeting. The members that had attended the physical meeting did not see the need to re-visit the material so shortly after, but two of the members that were unable to come to the physical meeting where given a thorough walk-through of the results and were given the opportunity to give their input to each of the questions. The material from the meeting was circulated to the members.

In beginning of July, a draft of the Position paper was ready to be circulated to the MAP members via e-mail. The members were asked to comment and give further input to the draft by 31 August, to be able to incorporate in text before an online meeting in September.

A meeting on 13 September aimed to discuss and confirm the results of the MAP Norrbotten position paper, to decide on how much of the report to translate, to fill in a survey, to discuss interest in meeting other MAPs. In the two-hour online meeting, six MAP members participated and we had a thorough work through of the formulations in the report. One of the civil society actors said that one of the reasons not all 17 members showed up was that the meeting was held during the moose hunt season, which is a large event for many in the region of Norrbotten, both permanent inhabitants and tourists.

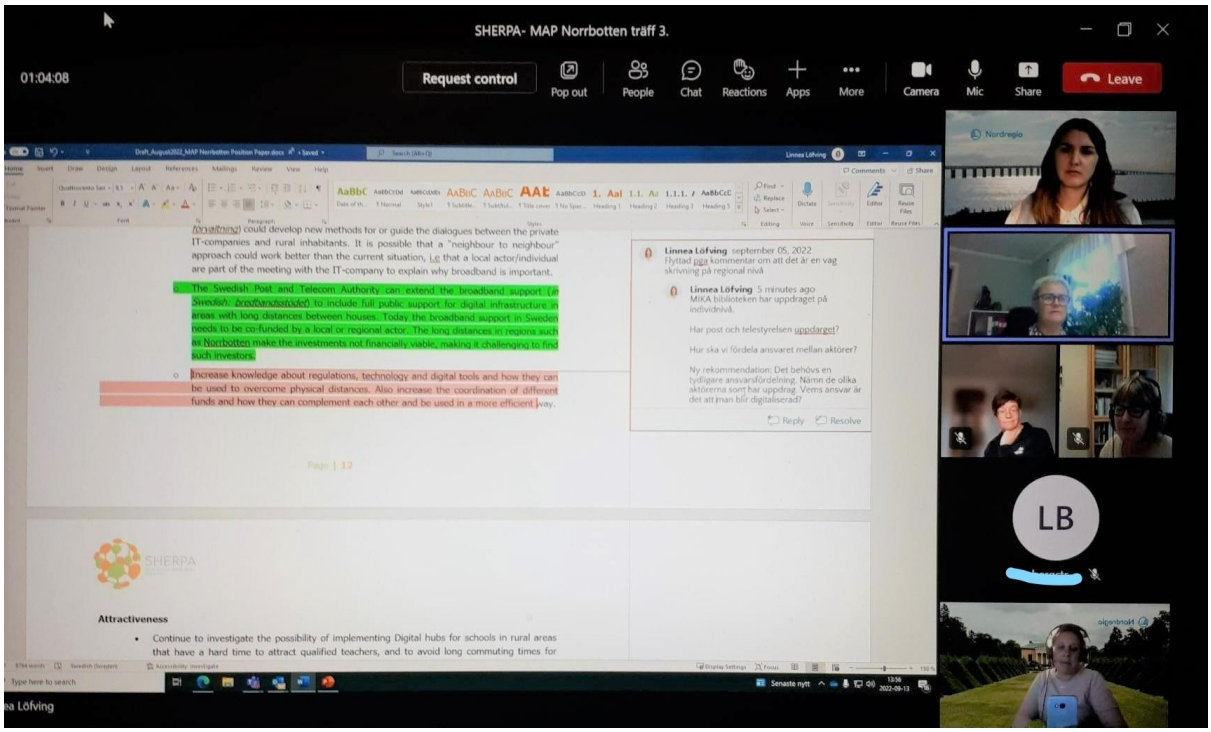

Photo: the MAP Norrbotten met online to discuss and fine-tune results on 13 September.

After the meeting in September a new draft version was developed and circulated to the MAP Members for any final comments, before finalisation of the report by September 30.

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