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About this booklet


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Introduction

This policy highlight provides a summary of the first OECD Mining Regions and Cities Case Study. The Case Study focuses on the region of North Karelia and the municipality of Outokumpu in Finland. This study is part of a project that is building a platform for knowledge sharing and co-operation on increasing productivity and enhancing the well-being of cities and regions with a specialisation in the mining and extractive sector (metals, minerals, and energy resources). The case study has been designed within the framework of this project that is focused on three themes: (i) productivity and economic diversification; (ii) quality of life and well-being; and, (iii) sub-national governance and fiscal arrangements.

The national mining policy in Finland does not incorporate regional characteristics and local development strategies, which results in missed opportunities. In a European context, Finland stands out because of its attractive regulatory environment and mining production. As one of the richest countries in mineral deposits in Europe, Finland can play an instrumental role in the raw materials agenda of the European Union. The European Union has a strategic priority to improve the future reliability of supply for raw materials and recognises the important role of regions in delivering on this agenda. Subnational governments are key to a sustainable development of the mining sector given their capacity to strengthen social licence to operate, land use governance and the development of local value chains, among other factors.

Outokumpu, a small rural municipality in North Karelia, was the key mining area in Finland for most of the 20th century. Located in North Karelia, the Finnish easternmost region (3% of national population), the municipality has experienced since the 1980s a long-term transition associated with the closure of a major copper mine. The transition from mining to manufacturing based economy has been a positive experience, leading to an economy based on sub-contracting and exports of metal technologies and mining services.

Outokumpu has currently a number of competitive advantages to become an important player of the mining value chain in Finland and EU. They include: 1) a strategic location within the local labour market (LLM) of Joensuu (the largest LLM in North Karelia), 2) a relative high share of manufacturing activities (33% of municipal jobs) with an outstanding know-how on mining, and 3) an enabling socio-political environment for mining activities. The existing mining knowledge has scope to transition into services around mining activities – including a heritage centre and mining education - which makes the mining sector a potential source of income for the municipality and the region.

Nevertheless, the municipality needs to overcome various bottlenecks to mobilise its assets and attain a sustainable growth in the long term. They include a 1) declining and ageing population (an elderly dependency ratio 19 percentage points higher than the country), which translates on a shrinking labour force, 2) mismatches in the labour market (brain drain) and a 3) low share of high-skilled workforce (28%, 7.9 percentage points lower than the LLM). There is also 4) a declining rate of entrepreneurship with stagnation in the establishment of new enterprises.

This study identifies 12 recommendations that can assist Outokumpu and North Karelia to build on competitive advantages and overcome bottlenecks. These recommendations require action at local, regional and national levels and focus on mobilising the potential of the local mining value chain, diversifying and developing new sources of economic growth, and improving governance coordination in order to become a key player in the national mining strategy and attain a sustainable economic growth.
Outokumpu has scope to mobilise existing assets to boost economic growth

North Karelia and Outokumpu have a history of economic transition and have recovered relatively strongly from external shocks

The economic performance of North Karelia and Outokumpu has been relatively strong in a challenging context. Finland has been hit hard by a number of factors over the past decade: the 2009 global financial crisis, structural change in the electronics sector, structural decline in demand for paper pulp, and disruption of trade with Russia. These changes have affected North Karelia negatively as an industrial region that is relatively trade-exposed. At the beginning of the financial crisis (2007-09), North Karelia’s GDP per capita decreased by 12% compared to the national average of 9.3%. Despite the initial dip, the region has been more resilient than the national average. During 2010-15, North Karelia’s GDP per capita grew (1.3%) faster than Finland (0%). The gap between the regional and national level narrowed from 30% (2009), to 24% in (2015). GDP per capita in North Karelia is 76.2% of the national average and 89.8% of benchmark regions in the EU with similar economic characteristics average (2015), yet higher than in the other predominantly rural remote regions from the European Union (Figure 1).

Figure 1. GDP per capita North Karelia and Benchmark regions, 2001-15.

USD PPP 2010.

Note: Millions USD, constant prices, constant PPP, base year 2010. Benchmark regions have been identified based on the following criteria: TL3 region classified as predominantly rural remote, similar percentage of GVA in industry of regional economy, current mining activity or mining heritage, and similar level of GDP per capita. They are: Liezen, Waldviertel, and Oberkärnten (Austria); Mayenne, Jura, Vosges, and Aveyron (France); Nord-Trøndelag, Nordland and Finnmark (Norway) Terras de Tras-os-Montes, Beira Baixa, Baixo Alentejo (Portugal), and Darlarna County (Sweden). There are 175 EU TL3 predominantly rural remote regions included in the sample, which also includes Norway.
In an EU context, North Karelia’s economy is dominated by industrial sectors. The industrial sectors include forestry, energy and mining with manufacturing. The share of industry in total economy (21.5% of GVA) is higher than in the benchmark of the EU predominantly rural regions (18.3%). The mining sector along with energy was one of the sectors recording growth over the 2005-15 period. In real terms, the mining sector has grown by 75% since 2001 in North Karelia. This type of development is consistent with the national average that is mainly driven by the increase in Lapland.

Over the past 60 years, Outokumpu has transitioned from a mining producing municipality to one based on sub-contracting and exports of metal technologies and mining services. Outokumpu’s economy relied on mining during most of the 20th century, becoming one of the most important mining municipalities in the country. After the mine closure in 1989, the municipality worked closely with Outokumpu Company, the company who ran the mine, to develop new economic areas driving the community. The company’s aim to innovate in copper refining, led to the establishment of its technology division in the municipality. This shift has been successful and the municipality is relatively more industrialised than the country average.
Outokumpu can further mobilise a number of competitive advantages to revitalise its economy

Geographic Location

Outokumpu benefits from a good geographic location, situated in close proximity to the two largest urban centres in East Finland (Joensuu and Kuopio) and to the Russian border (less than 120 kilometres). The municipality belongs to the local labour market (LLM) of Joensuu, which concentrates most of the growth in North Karelia because of its size and diversity to attract skills.\(^1\) It is also located in the so-called Outokumpu geological area containing copper, zinc and nickel deposits, which is still attracting exploration projects. There are at least 10 known deposits with active permits located less than one hour distance from Outokumpu.

Industrial fabric with mining know-how

Outokumpu, as North Karelia, is highly specialised in industrial sector (e.g. mining and manufacturing). It is one of the most industrialised municipality in North Karelia and doubles the national ratio of industrial jobs to population (Figure 2). Manufacturing sector employs 33% of the working age population in Outokumpu, far above the share of LLM (16%) and the country average (13%). Over the past two decades, the value of mining activity in the region has increased and the mining value chain (extraction and processing) has become more important to the regional economy. This includes an industrial park, which hosts knowledge-intensive and globally connected companies in the metal technology sector, and a Mineral Processing Laboratory of the Geological Survey of Finland (GTK).

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\(^1\) Local labour markets (LLMs) are defined as contiguous municipalities with a significant degree of commuting across municipal borders. In North Karelia, the LLM includes six municipalities (Ilomantsi, Joensuu, Kontiolahti, Liperi, Outokumpu and Polvijärvi), all of different population sizes. Joensuu is the largest municipality of the LLM with the total population of 76 067 inhabitants. Kontiolahti and Liperi are the other two municipalities of which population size is over 10 000 inhabitants followed by Outokumpu with a population of 7 000 inhabitants.
Supportive local environment for mining activities

The social and political environment in Outokumpu is favourable to mining activities. Rooted into the municipality development history, the community has a positive perception towards mining activity, which provided a number of services (schools, health and security) to the municipality during the first half of the 20\textsuperscript{th} century. Furthermore, the municipal government has acknowledged the potential of the mining sector to contribute to local development. Its economic strategy highlights the development of a local mining cluster \textit{Outokumpu mining camp} with the aim to co-ordinate private sector, universities, research centres (GTK) and government activities to support mining projects in Finland (Figure 3).
Outokumpu’s mining cluster


**Outokumpu can diversify its economy to boost jobs and promote inclusive growth**

**Outokumpu faces a number of development challenges**

Ageing and decreasing population has led to a shrinking workforce in the municipality.

The closure of the mine in 1989 resulted in a long-term demographic decline in the municipality. After the population peaked in 1960 (13 000 inhabitants), it declined since the closure of the mine in 89, falling below 8 000 inhabitants in 2002. During the last decade, the declining demographic trend in Outokumpu has continued dropping 12.7% between 2001 and 2017, against a relative stable population trend in the LLM (Figure 4).
Alongside with the demographic decline, the share of the elderly population in Outokumpu is higher than in the broader LLM (Figure 5). The elderly dependency ratio (65 and over to the working-age population of 15-64) in Outokumpu stood at 51% in 2017, around 6 percentage points higher than in the LLM and 19 percentage points higher than nationally. Since 2009, this gap has been widening, with the share of elderly people increasing from 35% (2009) to 51% in 2017. The demographic trend has led to a workforce decline of 4% between 2009 and 2017.
Figure 5. Elderly dependency ratio, 2001-17

Note: Elderly dependency ratio is defined as the number of elder population (65 and over) related to the working-age population (15-64 years old).

The share of high skilled labour force is lower than in the broader local labour market

The transition from mining to manufacturing activities during the 1980s left a share of workers with skills that do not match with contemporary economic needs. The share of the workforce with higher education (28%) is far below the share in the LLM (36%). Alongside with this, most of the people who out-migrated from Outokumpu in the past years have a medium or high educational level, while the average of people who moved into the municipality hold only secondary educational levels.

While Outokumpu municipality has set the improvement of the secondary education quality as a development priority, more efforts are needed to adapt higher education to market needs. Outokumpu has a vocational colleague that teaches a variety of degrees and have a good scientific component. Yet, its best-known vocational degree is dance, which attracts annually a relatively large number of students from other municipalities but does not fit the demand for labour in the area. Furthermore, at the regional and local level, there is a lack of data measuring the characteristics of both workers and unemployed population as well as on the needs of the labour demand side.

Entrepreneurship is low with few number of companies per inhabitant.

In 2016, entrepreneurs represented approximately 11% of the employed labour force in Outokumpu, which was 2.9 percentage points lower than the LLM average. The number of entrepreneurs decreased from 330 to 246 between 2005 and 2016. A similar trend was identified for North Karelia, experiencing a lower role of start-up intensity than the national average (3.88 new enterprises per 1 000 inhabitants vs. 5.27 for the national
average in 2014). However, the decreasing entrepreneurial trend in Outokumpu is 1.2 percentage points higher than in the LLM.

**Figure 6. Share of entrepreneurs of the total employed labour force**

*Note: 2005=100.*

Expanding the industrial fabric beyond manufacturing can bring new sources of income

Although the manufacturing industry has brought dynamism to the economy and income to the municipality, there is a persistent higher unemployment rate in comparison to the region. The unemployment rate in Outokumpu was at 19.8% in 2016, 1.4 percentage points above the LLM average (18.4%) and 1.8 percentage points higher than the regional average. Since the crisis period, the unemployment in Outokumpu has decreased but has not been able to reach the pre-crisis level (15.6%). The employment of youth population was the most affected, falling from 39% (2007) to 31% (2009) and remaining at that level until 2016. Contrary to older population (aged 55-64), whose employment rate rose 3 percentage points during 2009-16 (48% in 2016). It underlines the low level of matching with the labour demand of the industry-manufacturing sector.

The tourism sector has growth potential, despite its small size. North Karelia has developed a tourism policy focused on supporting nature-based tourism and sustainable and responsible tourism. Yet, the current regional tourism strategy lacks an integration of the municipal characteristics into a single brand. North Karelia is among the six regions with the lowest number of overnight stay spent by tourists (456,323 in 2017), representing 2% of the national total. North Karelia thus needs to conduct a whole-of-government approach for tourism that involves all the municipalities and the different economic sectors (e.g. environment and transport).
Improved governance co-ordination is needed to make Outokumpu a key player in the development of Finnish mining sector

**Finland’s mining policy and regulatory framework lacks a territorial approach and this results in missed opportunities**

The European Union has a strategic priority to improve the future reliability of raw materials and Finland plays a key role. Finland is the third largest European country supplying raw materials to the EU (3% of all the raw materials supplied to EU), after France and Norway. It also is the largest EU supplier of cobalt to EU (66% of total supply) and provides most of the EU mining production of platinum-group elements and other minor metals, including chromite. The country stands out globally by its attractive regulatory and business environment for mining, ranking in the first place of the best judicial environment for mining activity (according Fraser Institute’s mining survey, 2017).

Finland’s mining policy and regulatory framework, however, lack a territorial approach and this results in missed opportunities. National policy does not take into account the special characteristics of the region sufficiently and there are no incentives for municipal or regional co-operation to steer investments or conduct joint mining projects. Subnational governments are key to strengthen social licence to operate, land use governance and develop local value chains, among other factors, to facilitate sustainable development of the mining sector.

**There is an opportunity to develop a more cohesive long-term vision for regional development that translates into a portfolio of projects**

Despite a comprehensive regional strategic programme, there are some gaps on the execution of the development vision in North Karelia. There is a lack of clarity in the potential of the mining sector, while bioeconomy and forestry sectors receive a large attention within the regional strategic programmes. The strategic forums (working groups) in North Karelia Regional Council appear to be more focus on accessing EU funds rather than on planning long-term strategies. Furthermore, the region of North Karelia lacks incentives for co-ordination among municipalities to implement the regional development plan.

North Karelia council has scope to enhance the use of European Structural and Investment Funds (ESIF) to support the development of the mining sector. The ESIF provide a significant amount of additional resources to North Karelia to invest in productivity enhancing initiatives and fund pilot projects. These funds can help mobilise public and private investment in the region, and promote co-ordination among different actors. The co-ordinating nature of these funds can be used by North Karelia to enhance the operational environment for mining clusters, especially on areas where it fosters private sector investments and cross-regional/municipal benefits.

**The Municipality of Outokumpu has a strong corporate vision but there is some disconnection with the region and neighbouring municipalities**

The municipal government of Outokumpu has developed a comprehensive and detailed Municipal Development Plan with short and long-term objectives and monitoring indicators. The policy-making process in the municipality counts with a sound involvement from the affiliated companies (the industrial park, the energy company, the Outokumpu rental-housing company, real estate companies and the tourism operating
company) and private sector. A management team (or City group), named by the council, conducts the executive task in the municipal corporate government of its affiliated companies, including the study and preparation of policy proposal.

Nevertheless, a pressing issue in Outokumpu is a “silo approach” to local development policies. Thanks in part to its economic self-sufficiency history based on the mining activity, the municipal administration has a vision of relying on its own assets to achieve higher stages of development. For example, Outokumpu’s attractiveness strategy seems to be disconnected from the regional plan and most of the programme’s are conducted through individual efforts, with little mention on developing partnerships with other municipalities. However, this silo vision is not a unique characteristic of the Outokumpu municipality but a rather common feature across municipalities in North Karelia, which calls for a greater co-ordinating role from regional-level institutions.

North Karelia Council can improve the interaction among local and private stakeholders to strengthen the implementation of the policies. For example, while University of Eastern Finland (UEF) has an important role on skills upgrading and research in the region, the university does not fully participate within the working group of extractive industries. Thus, a platform for dialogue to meet regularly under a formalised setting can ensure alignment of regional development plan and municipal strategies.

**Recommendations: A framework for action**

Outokumpu has proven to be a resilient economy, standing out by a remarkable economic transition from mining to manufacturing activities. This manufacturing industry brought economic dynamism to the economy and income to the municipality. Yet, the municipality currently faces a higher unemployment rate in comparison to the region coupled with a challenging demographic trend and other development bottlenecks.

Outokumpu has unexploited assets that can further mobilise to revitalise the local economy and boost well-being in the community. The municipal government has a comprehensive economic plan with the aim to revitalise its local economy and attract new sources of growth thus setting the path for a sustained development. It includes an opportunity for the municipality to become a key player in the national and regional mining strategy. To help pursue this strategy, this study identifies a framework for action based on 12 recommendations to:

i) Mobilise local assets to make Outokumpu a key player in the mining value chain in Finland and the EU.

ii) Diversify sources of economic growth to boost employment and reduce labour market mismatches.

iii) Strengthen governance co-ordination and the functioning of regional policy-making to create an integrated vision of regional development and link local and national mining strategies.
I. Mobilise local assets to make Outokumpu a key player in the mining value chain in Finland and EU

1. **Better integrate mining in local economic development planning and link Outokumpu with Joensuu Local Labour Market.** Actions for this are:
   - Revise the municipality economic development plan to better define the economic objectives based on the existing assets in the territory; particularly, integration within the Joensuu LLM, maximising mineral and metal extraction, and the mining value chain (Outokumpu municipality).
   - Create a unified vision and priorities amongst municipalities within the Joensuu LLM (Outokumpu municipality, Business Joensuu, North Karelia Council and national agencies). Actions for this are:
     - Develop the local workforce to meet future industry needs (e.g. skills profile, demand for skills from business, and barriers to mobility).
     - Attract and retaining workers that address critical skills shortages/ gaps (current and forecast).
     - Improve infrastructure connectivity and transport services to reduce commuting times.

2. **Strengthen the local mining cluster of Outokumpu and improve the operational environment for mining-related activities:**
   - Strengthen the vision of mining development in the region (North Karelia Council and Business Joensuu). Actions for this are:
Identify priorities to maximise the potential of the mining value chain in the region (land use, skills, innovation, and internationalisation) and ensure they are reflected in North Karelia’s regional planning and Smart Specialisation Strategy.

Develop a portfolio of projects linked to these priorities and link them to funding opportunities through for national funding and the European Structural and Investment Funds (ESIF).

- Develop a clear mining brand for the region and a strategy to promote it internationally. The marketing activities should aim to make the Outokumpu mining camp an international renowned source of knowledge-based services in mining and ensure this strategy is included within the national marketing activities (North Karelia Council and Business Joensuu).

- Enhance inter-regional (Finland and EU) co-operation on smart specialisation and green mining technologies by promoting joint projects on research and innovation with other regions, and supporting the internationalisation of local businesses (Business Joensuu).

- Conduct a flagship project for mining activities (e.g. testing of tailings for mines in cold geographies) to align and spur commercial partnerships among established industries. It should involve an active role from the Geological Survey of Finland (GTK), local firms and the University of Applied Sciences in Joensuu (Outokumpu municipality and Business Joensuu).

- Lead Outokumpu’s mining camp and GTK to take an active role in supporting the regional mining strategy by building a network of experts to support innovation and higher-value added activities in the sector (Outokumpu municipality and Business Joensuu).
II. Diversify sources of economic growth to boost employment and reduce labour market mismatches

3. **Provide targeted support to increase the share of the service sector in the economy** by promoting new businesses focused on services embedded on the industrial process of established companies and enhancing linkages with universities and other markets (Business Joensuu).

4. **Strengthen programmes to boost SMEs and entrepreneurial culture.** Actions for this are:
   - Improve the link of entrepreneurs and SMEs in small rural municipalities to regional business development programmes. It involves enhancing local and international networks for SMEs to transition toward related higher value economic activities connected with the green economy (Business Joensuu).
   - Develop a strategy to strengthen an entrepreneurial culture by enhancing education programmes, improving information and mentoring and reducing the negative social consequences of business failure (Business Joensuu).

5. **Strengthen the region’s tourism strategy** through a co-ordinated approach and development of partnerships (North Karelia Council and Outokumpu municipality). Actions for this are:
   - Strengthen the regional strategy on tourism to embrace a model where tourism is developed around a collection of experiences that leverages on the special characteristics of each municipality (North Karelia Council).
   - Enhance partnerships with stakeholders involved in mining tourism and expand the offer of thematic events leveraging on the mining museum (Outokumpu municipality with Business Joensuu).

6. **Improve programmes and regional co-ordination to enhance vocational, language and IT training** to increase workforce suitability with the current and future needs of the private sector (Business Joensuu, Outokumpu municipality and Regional Council).

7. **Embrace a comprehensive strategy to attract and integrate high-skilled migrants** in order to fill gaps in the labour force demand and boost local business in Outokumpu (North Karelia Council and Outokumpu municipality).

8. **Develop a strategy to engage older working age population** in the economic development of the municipality that is aligned with the priorities of the Regional Council of North Karelia (Outokumpu municipality).
III. Improve governance co-ordination to make Outokumpu a key player in the development of Finnish mining sector

9. **Strengthen the functioning of regional policy-making and the integration with mining national framework.** Actions for this are:

   - Better link the national mining policy instruments with the regional characteristics (the Ministry of Economy and Employment Affairs.) Specific actions for this are:
     - Enhance participation of regional councils and municipalities in any future revision of the National Minerals Strategy (2010) and articulate the role of the subnational level in the development of mining in Finland.
     - Work with regions to map local mining clusters to identify their strengths and complementarities in the context of the national policy.
     - Support the development of a network of Finnish mining regions and municipalities to co-operate on joint projects, co-ordinate investment attraction, and share knowledge and good practices.
     - Partner with regions and municipalities in the international promotion of Finland as a destination for mining investment.

   - Adjust the scope of the working groups to undertake long-term planning and capacity building. Two priority areas are in relation to entrepreneurship, and skills and workforce development (North Karelia Council).

   - Develop a strategy that is inclusive for different areas and size of companies within the local labour market. For this, Business Joensuu should better adapt the strategic programmes to reach business outside of Joensuu (e.g. supporting small business to access EU financial instruments) and act as a broker to co-ordinate and integrate municipal assets and companies with regional programmes (e.g. the mining camp in Outokumpu) (Business Joensuu).

10. **Enhance the benefits of EU funds to support the future development of the mining value chain:**
• Work with the local mining industry and GTK to develop a portfolio of projects that are designed to increase mining investment, promote innovation in mining technology services, and address bottlenecks to growth, including land use, skills, and specific opportunities associated with photonics and ICT (Business Joensuu).

• Develop a cohesive approach to using ESIF funds to implement these projects (North Karelia Council and Business Joensuu).

11. **Improve co-ordination and alignment in regional development policies between the Regional Council, municipalities, universities, industry and other actors:**

• Promote a **unified vision of development** for the region and ensures co-operation among municipalities (North Karelia Council). Actions for this are:
  
  o Create a strategic platform for dialogue between the Regional Council and municipalities. This platform can serve various purposes, such as developing a common long-term development vision, improving co-ordination, pooling resources and efforts, and resolving conflicts.
  
  o Formalise the dialogue to not depend on occasional meetings or personal relationships. It should be institutionalised to ensure continuity over time.
  
  o Include different stakeholders with equal participation and ownership in the platform.

• Develop a **monitoring framework** to track and co-ordinate the accomplishment of the objectives in the municipal development plans. The framework should cover all the municipalities in the region to help the council benchmark, align and compare performance of strategic plans (North Karelia Council).

12. **Improve co-ordination among municipalities with incentives** for co-ordination that promote the joint implementation of projects among municipalities (North Karelia Council).