

## Local Content Policies In Minerals-Exporting Countries: The Case of Finland

### Overview of Finland's economy

The mining sector has been a prominent part of Finland's history and economy for hundreds of years.<sup>1</sup> According to the Ministry of Employment and the Economy there were 46 mines and quarries operating in Finland in 2013. Present activity is concentrated on gold, platinum group metals, base metals, diamonds and industrial minerals

The mining industry in Finland is a mature and advanced industry.<sup>2</sup> The transformation of the mining sector in Finland offers pertinent insights for two reasons. First, the sector diminished in importance, and was virtually abandoned, in the 1970s, to concentrate and specialise on manufacturing and services before a rebirth in recent years. Secondly, the sector managed successfully to evolve from a raw material based sector towards higher value added and knowledge intensive activities.

Today, the sector accounts for 0.3% of GDP (Statistics Finland, 2015) and provides 3 000 direct jobs (Ministry of Employment and the Economy, 2013). The direct contribution of mining activities however is dwarfed by that of mining services and suppliers of technological solutions. The country is home to world-class service providers that weigh significantly both in terms of contribution to the economy and in terms of employment estimated at 87 000 jobs.<sup>3</sup>

More broadly, following a decade of strong growth and despite the financial crisis of 2009, innovation and structural reforms have made Finland one of the most competitive European economies (WEF, 2012). The country is characterised by a high degree of technological innovation and knowledge, making it a well-recognised "knowledge" economy.

### A short historical overview of the mining industry

To understand how the Finnish mining sector developed to become one of the most technologically advanced worldwide, taking a historical approach is necessary to better highlight the external and internal factors that contributed to its success. Two fundamental strategies are relevant to Finland's experience in the extractive sector. *First* success was based on home-grown strategies with emphasis on internally generated capital, raw materials and skills. *Second*, the extensive government involvement was critical (International Business Publications, USA, 2008).

Ownership of enterprises in charge of exploration activities is mainly foreign (Canada, Australia and Sweden).<sup>4</sup> Over the years, and in part due to Finland's advanced level of economic development, the

<sup>1</sup> Mines are mainly located in the Eastern and Northern parts of the country, which are characterised by higher rate of unemployment compared to the rest of the country.

<sup>2</sup> Zinc, copper, nickel and chrome ores are produced in Finland. However, it is the industrial minerals, those that are not used for production of pure metals such as dolomite, limestone, talc and other minerals, which constitute the main part of the Finnish mining industry. Finland is the biggest producer of talc in Europe and one of the most important sources of carbonates, titanium pigments, which are used e.g. as pigment in paper industry (Geological Survey of Finland, 2015). Mining projects include the excavation of iron, chromium, copper, nickel, zinc, gold, vanadium, titanium, lead, cobalt, silver, tungsten, and molybdenum ores, along with ores containing rare-earth elements. Finland also has high potential for producing the so-called high-tech metals. In 2011, the estimated turnover of the mining industry was EUR 1.48 billion, among which mining of metal ores accounted for about EUR 963 million (Ministry of Employment and the Economy, 2013).

<sup>3</sup> According to a study on the mining and mineral industry service supply commissioned by the Ministry of Employment and Economy (2013), 300 technology and/or service suppliers were identified at various stages of the mining and mineral industry value chain, with a total turnover of nearly EUR 26 billion and more than 87 000 employed.

<sup>4</sup> The only mines whose ownership is mainly Finnish are the Kemi chromium mine and the multi-metal mine of Talvivaara (Ministry of Employment and the Economy, 2013).

mining industry has created numerous linkages in the economy. Finland developed strong manufacturing and services which have become well-recognized on the global scene.

### ***Role of the State in driving the mining sector***

#### *Early nationalisation policies*

In the early days of independence in 1917, Finland was eager to re-appropriate its resources, and to develop its industries independently. This was translated by the nationalisation of several industries, the birth of many state-owned enterprises and significant public investment to improve the country's ability to process its own raw materials and increase its competitiveness. Regulations regarding foreign direct investment were quite constraining in particular regarding ownership.<sup>5</sup>

#### Capacity development: A national priority

Since the early stages in the development of its mining industry, Finland had set the development of capabilities as a top priority. Acquiring crucial knowledge and know-how were done through (i) the hiring of foreign experts from Norway, Sweden, and Germany, (ii) the training of Finnish engineers abroad; and (iii) learning by doing notably through reverse engineering, e.g. copying innovations from imported machinery/technology (Raumolin, 1988). In addition, academic institutions were closely associated with the training of local competencies, which were even located close to the mines.

#### Role of state-owned enterprises (SOEs)

Setting-up SOEs in the mining industry was of particular strategic importance. It enabled the government to control and drive the sector to meet its priorities. From an economic perspective, SOEs channelled investments into key industries, allowing the country to add value to its mining industry,<sup>6</sup> to diversify into other sectors and to provide employment opportunities. In addition, it allowed the government to develop powerful firms in specialised and sophisticated products, in line with the strategy to build up a knowledge economy. In the 1970s, Finnish suppliers embarked on a strategy of internationalisation becoming global leaders by the late 1980s in various specialised sectors.

#### ***A cluster-based policy: Maximising spillovers***

Finland endorsed a cluster-based approach in an attempt to overcome economic difficulties faced in the 1980 to further increase productivity, specialise in the production of higher value added products, and remain competitive on the global scale. This approach reconciled policies in education, science, and technology, industrial and economic development, into a more coherent approach. Various actors from different industries and different nature – academia, government institutions, and private sector – were involved with a view to allow and maximise technology and knowledge transfers between firms, including the smaller ones.

The role of investments in technology creation through state subsidies and the setup of several institutions were prominent. The government changed its role from that of a driver to that of a facilitator, in particular to provide a better business environment. Institutions coordinated and supported R&D activities, notably through subsidies.<sup>7</sup> Pooling firms in an industrial cluster turned out to be efficient and encouraged more specialisation while reducing transaction costs. It facilitated technology diffusion between related firms (in particular SMEs with limited own R&D resources) and contributed to their internationalization, which might have been more difficult if they were to do so on their own (Blomstrom et. al., 2002).

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<sup>5</sup> “In 1939, new laws to restrict foreign ownership were implemented. The main thrust of these laws was that no foreigner or foreign organization could acquire real estate in Finland without permission from the government. Legislation also restricted the operation of foreigners by prohibiting mining claims and the purchase of mines without the government's permission. A foreigner could not be a member of a board of directors or the general manager of a firm without permission” (Hjerpe, 2003).

<sup>6</sup> This was later crucial to develop links between industries and overall the mining value chains – vertical and horizontal integration.

<sup>7</sup> The Government set up institutions such as Tekes, the Finnish Funding Agency for Innovation, in 1983 and STPC.

## ***Accession to the EU in 1992***

The Finnish government had to align its domestic regulations to that of the EU when it joined the common market in 1992. In particular, it had to complete its market and investment liberalisation. All local content requirements were abandoned. In fact, LCPs were no longer necessary because by that time, Finland already had a strong operational environment, technological and technical know-how, state of the art infrastructure, and high skills. The country had a mature and advanced economy, with a comparative advantage based on technological innovation and knowledge. Many firms were motivated to locate to Finland to benefit from the synergies from the latter's specialised industries (Ali-Yrkkö et. al., 2003). By fostering linkages with foreign firms, Finland was able to obtain additional capital investment in the mining industry.

## ***Renewal of the mining policy and legislation: A new business model***

The Finnish government elaborated a new minerals strategy in 2010 by means of a collaborative process that included all stakeholders. The strategy aims to create a coherent framework in which the mining sector is viewed as a cluster including exploration and mining activity, downstream processing, and mining equipment, technology and services (Geological Survey of Finland, 2010). The new strategy includes four main themes for action:

- Strengthening minerals policy
- Securing the supply of raw materials
- Reducing the environmental impact of the minerals sector and increasing its productivity
- Strengthening R&D capabilities and expertise

There is a strong push to return to mining activity which has almost stopped in Finland. This coincides with the EU raw materials strategy that aims to increase self-sufficiency in minerals. This is not without challenges, that can often be summarized as the 'not in my backyard' view of mining, which are being addressed, in part through a consultative process surrounding the minerals strategy. Increasing mining activity entails first encouraging exploration. Ensuring a competitive operating environment for exploration and mining investment requires addressing growing concerns in the sector including land use restrictions, complex regulations and long permitting processes.

One of the main pillars of the Finnish mining strategy is ensuring continued innovation. Finland already has a strong comparative advantage in the sector and is recognized internationally as a leading supplier of mining equipment and machinery and processing plants. The strategy document even suggests that "when an underground mine is established anywhere in the world, 70-90% of the required technology comes either from Finland or Sweden" (Geological Survey of Finland, 2010, p. 10).

The Finnish government plays a central role in the mining cluster, by financing and supporting R&D in the sector, and through education and training. "Without active intervention by the government, including contributing to R&D financing of the minerals sector, Finland will not succeed as an innovative provider of technologies within the emerging green economy. A strong and sustained commitment to education, research, product development and commercialisation, integrated across sector boundaries will form the basis for new Finnish business models and activities in the sector" (Geological Survey of Finland, 2010). Specialized training programmes at universities of applied sciences and technical trade school are reinforced to meet future needs.

Another major pillar of the Finnish minerals strategy is mitigating the environmental impact of mining and focusing its innovation on 'green mining'. Finland promotes advances in efficient use of resources and implementation of intelligent systems, together with recycling initiatives that promote sustainable mining practices, as key future areas of growth within the sector. It aims to develop new business opportunities by combining skills and expertise in environmental and mining technologies with those in metals processing and machinery and equipment manufacturing. Synergies are sought with Swedish providers as both countries share a long mining history and similar expertise in mining equipment, technology and services.

Almost all minerals processing ('beneficiation') is done in-country, and it is planned that this continues. Along with exploration techniques, this remains a main area of mining research and development.

The new strategic approach supports Finnish suppliers. Building upon Finland's long experience as a world-class provider of inputs, services and logistics for the mining industry, the new strategy aims to position suppliers as "solution" providers therefore opening new scopes and markets. This objective will be realised notably through:

- Measures to further encourage **suppliers' development**, notably through incentives for Finnish firms to maintain their technological leadership across the minerals sector.
- A dedicated **investment programme** for the mining industry with a budget allocation of EUR 30 million to provide financing opportunities and loan guarantees.
- Continued **investment in education and R&D** (e.g. Green Mining programme to enhance research and innovation, funded by Tekes, the Finnish Funding Agency for Innovation) and the elaboration of specialised training programmes at universities of applied sciences, and technical trade schools to meet the needs of the mineral sector.
- Agreement between mining firms and government for the support to **infrastructure** development, once parties agree on investments and production levels are realised.

## Legislative framework in Finland

The main legal framework guiding the mining industry in Finland is the 2011 Mining Act. It provides the overall policy orientation of the sector, notably (i) to promote responsible mining activities; (ii) to ensure an inclusive process, with specific opportunities for municipalities and individuals living in mining environments to influence decision-making and (iii) to promote the safety of mines and mitigate damages arising from mining activities.

There are no specific local content requirements in the new legislation. A few provisions are nonetheless relevant, in particular regarding conditions of registration, access to financial incentives and to a certain extent, labour market.

The rules and regulations are summarised in the box below.

### Mining regulations in Finland

- The National Mining Strategy (2010)
- The Mining Act (621/2011)<sup>1</sup>
- The Government Decree on Mine Safety (1571/2011)
- The Decree of the Ministry of Employment and the Economy on Hosting Equipment in Mines (1455/2011)
- The Finnish Government Decree on Mining Activities (391/2012)
- Action Plan
- EU Council Directives 92/91/EEC
- EU Council Directives 92/104/EEC

1. It replaces the previous Mining Act (503/1965).

Source: Author, based on Kalliolaw Asianajotoimisto Oy – Attorneys at Law (2015).

## Ownership requirements

Foreign firms can apply for an exploration and a mining license if they establish an affiliate in Finland, or if they belong to the EEA, they are to set up a branch in Finland as a minimum requirement. To reinforce such measure, the possibility of accessing Tekes funding can only be done if the firm is registered in Finland (branches cannot access Tekes funding). This measure is meant to

anchor foreign firms within the mining cluster in order to maximise potential gain in capital, knowledge and business opportunities.

### **Labour market**

The needs of the labour market are taken into consideration when granting a residence permit for a foreign employee, based on an estimate of the labour requirements in the field of expertise and ability of the foreign worker to be financially sustainable.

**Table 1. Summary of LCPs applicable in Finland**

Type of Requirements	Detail of requirements	Applicability in Finland
<b>Quantitative Requirements</b>		
Requirements based on numerical targets	Labour requirements	No specific numerical targets but needs and expertise of the labour market must be taken into account before granting permit to foreign employees
	Specific categories of procurement reserved for local suppliers	None
	Permits or licensing requirements	Foreign firms can apply for a licensing requirement provided they set up an affiliate in Finland
	Spending requirements regarding technological transfer	None but incentives are provided through dedicated investment programmes
Requirements based on monetary value	Requirements regarding R&D spending locally	None but investment in R&D and education is considered a priority and receives financial support from Tekes
	Value of wages paid to expats should not exceed a % of total payroll	None
	% of local procurement spending to be attributed to local suppliers	None
	Preferential price premium exclusively for local suppliers	None
	Registration requirement to access funding	Tekes funding can be made available if firms are registered in Finland
<b>Qualitative Requirements</b>		
Reporting & justification	Mining firms to report and justify hiring foreign labour or sourcing inputs from abroad	None
Information sharing	Requirement to advertise job vacancies or publish tenders and procurement requirements	None
Capability & knowledge development	Requirement for the training of local labour or certification of local suppliers	None
R&D contribution and transfer of technology	Firms required to transfer technology to local firms; or Firms required to carry out some levels of R&D locally	None
Preferential treatment	Firms to hire local labour or source inputs from domestic suppliers only if available on a competitive basis	None

### **Main properties**

The evolution of the mining industries and the approach taken by Finland offers an advanced economy perspective, with a mature industry and well-developed suppliers base. As the nature of the industry shifted away from traditional mining activities, the priority in Finland also shifted to strengthen its position as a world-class supplier of goods and services to the mining sector, with a particular focus on innovation and technology.

Today, Finland is increasingly positioning itself as a "solution" provider, meaning that its firms are able to provide a combination of products and services aimed at solving a particular "problem" of the customer. This is an important distinction and contrasts with traditional goods and services

providers. "Solution" providers are able to offer tailor-made packages that respond to the specific needs of mining firms.

The case of Finland suggests that clear policy objectives, supported by well-designed policy tools, were instrumental in the success of the mining sector. While much emphasis was placed on the development of a knowledge-based economy, Finland moved away from a traditional situation where linkages had to be developed to dis-enclave the sector, to a situation where the development of suppliers were at the core of the strategy as mining became a secondary activity.

Cluster-based policies were put into place with a particular focus on knowledge, technology and innovation; and the sequence in which those were put in place was not inconsequential. A strong state at the beginning as a driver, functional institutions, and targeted and time-bound protection or subsidies, all played a key role in shaping Finland's success story.

Seen in the historical context, a number of elements are pivotal to the Finnish experience. Finland strongly prioritized capacity development. Acquiring crucial knowledge and know-how was done through (i) the hiring of foreign experts; (ii) the training of Finnish engineers abroad; and (iii) learning by doing, notably through reverse engineering. The Finnish government favoured a cluster strategy in order to increase productivity, specialise in the production of higher value added products, and remain competitive on the global scale. The role of investments in technology creation through state subsidies to R&D was prominent. The government changed its role from that of a driver to that of a facilitator, in particular to provide a better business environment. Pooling firms in an industrial cluster turned out to be efficient and encouraged more specialisation while reducing transaction costs.

When Finland joined the EU in 1992, and had specific requirements to remove all forms of favourable treatments for its domestic industries, its economy was well ahead of the curve. It then used its access to European industries and capital to its advantage.

## More Information

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