Lapland is by its nature the international region

Arcticism is a natural part of everyday life in Lapland. Lappish people have adapted themselves and their activities to their environment and surrounding nature with a goal to become high level experts in Finland and in EU on sustainable development of the northernmost regions.

The objective of international cooperation is to increase produced added value for everybody in Lapland and support the regional growth. Smart solutions have to be created and means of harnessing the regional competence for sustainable development and growth need to be put in to use in Lapland.

Be active and take your role!

The most important themes for Lapland are the sustainable utilisation of natural resources and conditions and increasing value of resources by refining. The driver industries of natural resources are built on mining and minerals, forestry and rapidly growing nature-based tourism. With the lead of these key industries there is diverse industrial and support service, national product and food processing business in Lapland, which creates international business and utility for the whole.

Strongening the international cooperation

“In Lapland, we see international cooperation as a serious business”, says Development Director, Päivi Idaholm from the Regional Council of Lapland. In addition to Internationalisation, Lapland is emphasising regional ecosystem approach to deepen the understanding of current overall picture and potential of cross-sectoral cooperation. The foundation for innovation and development of practical solutions towards international market is created in this way.

Lapland doesn’t want to be just a mere outsider when it comes to the arctic development. By being an active player in the international network, the regions can truly have an influence on the crucial matters. One good example of this is the generation of European mining regions network, where Lapland has been the driving force with regional stakeholders. In Lapland, resource efficiency and smart utilisation of raw materials in addition to increasing self-sufficiency are targets that are creating competitive advantage for industries in Finland and European Union. Mining and metallurgy have an important role when pursuing these targets, which has led to systematic development of industrial circular economy activities in Lapland.

During 2011 Lapland started an active commission with European commissioner and other international stakeholders. As a result, and most developed example, The Regional Council of Lapland took a leading position on initiative of building a network of mining regions in the EU and invited other interested regions and partners on board. The network was launched together with European commission DG GROW unit of Raw Materials and Resource Efficiency. Lapland Process was supported by East & North Finland EU Office, ERRIN (European Regions Research and Innovation) Network and European Committee of the Regions. Most crucial success factor in cooperation was strategic partnership with Spanish region of Castile and León.

By only taking part, carrying out our own responsibilities and leading the development ourselves we can make difference.”

– Kristinna Jokelainen, Director of International relations and 53 Implementation, Regional Council of Lapland

FACTS OF LAPLAND

- The northernmost region of Finland and the European Union
- Border with Russia, Norway and Sweden
- Capital city, Rovaniemi, the Official Hometown of Santa Claus
- Total area 100 366, of which 7 699 km² is water
- 150 200 inhabitants (2016), density: 1.8 people/km², a bit more than a little people
- World’s cleanest air and Europe’s purest water
- World’s largest organic harvesting area
- Employment: municipal sector 30%, state and state-owned companies 10% and private sector 49% in total 68 610 jobs
- Number of companies 9 014
- Total turnover of companies 12 100 M€
- 4th strongest export region in Finland
- Lapland region has the fastest growing economy in Finland
- 1 000 M€ Industry export revenues (7% of the national export)
- World’s northernmost hub of bio-, mining-, metal industry and services
- Mining and metallurgy around 3 000 M€
- The only chrome mine in the EU
- The biggest gold mine in the EU
- Forestry, manufacturing of wood and paper & paper products 1 200 M€, 98% of total land area is forest
- Annual increment of forest growing stock 13.3 Mm³
- Sustainable harvesting limit 7.3 Mm³
- Total annual loss 6.1 Mm³, including harvesting 4.6 Mm³
- Total tourism demand in Lapland is more than 1 000 M€ and 2.7 million registered overnight stays in Lapland
- Annual growth rate 20%
- Agrofood production 300 M€
- 4 429 Reindeer owners
- Annual revenue ~39 M€, doubled in 10 years
- Mining and processing of raw materials and Resource Efficiency.
- North Finland EU Office, ERRIN (European Regions Research and Innovation Network) and Innovation Network)

THE OPPORTUNITY AND GET BUSY!

Lapland has an excellent position to become more competitive and innovative sparsely populated region. By now, the region has gained visibility and a firm foothold in many international forums.

By only taking part, carrying out our own responsibilities and leading the development ourselves we can make difference.”

- Kristinna Jokelainen, Director of International Relations Kristinna Jokelainen from Regional Council of Lapland

“Arcticism is one of the clearest and best preserved places on earth and facing yet many dynamic and complex changes. Worldwide interest towards Arctic natural resources and impact of climate change place Arctic countries and areas to a new position. Balancing with sustainable development sets new challenges for the Arctic.

In addition to challenges, global changes bring great potential. Lapland, as the northernmost region of Finland and European Union, is in the middle of these universal changes and opportunities. Sustainable development is the foundation of growth in Lapland. Looking for the chance in the utilisation of natural resources leads continuous economic and social benefits for current generations and ones to come.

Taking our own place in global operational environment is the foundation for growth in Lapland. It creates an opportunity for internationalisation now and in the future. Lapland must be an internationally recognised region which relies on strong arctic business and competence. Smart and arctic knowledge, sustainable utilisation of natural resources and strong communities are the evolving competitive advantages of Lapland.

The most important themes for Lapland are the sustainable utilisation of natural resources and conditions and increasing value of resources by refining. The driver industries of natural resources are built on mining and minerals, forestry and rapidly growing nature-based tourism. With the lead of these key industries there is diverse industrial and support service, national product and food processing business in Lapland, which creates international business and utility for the whole.

The network of mining regions in the EU and invited other interested regions and partners on board. The network was launched together with European commission DG GROW unit of Raw Materials and Resource Efficiency. Lapland Process was supported by East & North Finland EU Office, ERRIN (European Regions Research and Innovation Network) and European Committee of the Regions. Most crucial success factor in cooperation was strategic partnership with Spanish region of Castile and León.

FACTS OF LAPLAND

- The northernmost region of Finland and the European Union
- Border with Russia, Norway and Sweden
- Capital city, Rovaniemi, the Official Hometown of Santa Claus
- Total area 100 366 km², of which 7 699 km² is water
- 150 200 inhabitants (2016), density: 1.8 people/km², a bit more than a little people
- World’s cleanest air and Europe’s purest water
- World’s largest organic harvesting area
- Employment: municipal sector 30%, state and state-owned companies 10% and private sector 49% in total 68 610 jobs
- Number of companies 9 014
- Total turnover of companies 12 100 M€
- 4th strongest export region in Finland
- Lapland region has the fastest growing economy in Finland
- 1 000 M€ Industry export revenues (7% of the national export)
- World’s northernmost hub of bio-, mining-, metal industry and services
- Mining and metallurgy around 3 000 M€
- The only chrome mine in the EU
- The biggest gold mine in the EU
- Forestry, manufacturing of wood and paper & paper products 1 200 M€, 98% of total land area is forest
- Annual increment of forest growing stock 13.3 Mm³
- Sustainable harvesting limit 7.3 Mm³
- Total annual loss 6.1 Mm³, including harvesting 4.6 Mm³
- Total tourism demand in Lapland is more than 1 000 M€ and 2.7 million registered overnight stays in Lapland
- Annual growth rate 20%
- Agrofood production 300 M€
- 4 429 Reindeer owners
- Annual revenue ~39 M€, doubled in 10 years
- Mining and processing of raw materials and Resource Efficiency.
- North Finland EU Office, ERRIN (European Regions Research and Innovation Network) and Innovation Network)
Foundation of smart specialisation in Lapland

Lapland was one of the first regions in Finland adapting smart specialisation (S3). The systematic approach and strong strategic focus has led to recognition by the European Commission in good practice of governance. The vision of Lapland’s smart specialisation is to enjoy a leading position in sustainable utilisation and commercialisation of Arctic natural resources and conditions.

Successful examples of the public support are the investments in tourism during the past few decades. They have comprised a few percentages of total investments but targeting them to right spots has had a strong impact.

Seeking after Artic Smartness

“When we started our work in smart specialisation one core objective was to become an internationally recognised region on innovation. To achieve this goal we had to have our own playing field and regional cooperation in good form first to attract regional actors to get involved”, explains Kristina Jalonen the Director of International Cooperation at Regional Council of Lapland.

The role of the Regional Council is to establish the framework for the operational environment and invite the stakeholders along.

From the beginning, S3 has been a very practical concept in Lapland, bringing new insights into regional development. S3 approach has been used in Lapland not only as a tool to become an attractive and knowledgeable partner in the EU, but also to implement more efficient regional development having direct impact on growth. By applying S3 in Lapland, partners have found new ways of working together.

It has encouraged them to seek new possibilities from the cross-sectoral collaboration, to develop common approaches towards regional development and to be active in international collaboration. Implementing smart specialisation into practice, Lapland has developed a systemic regional development approach based on Arctic Smartness brand and cooperation.

The vision of Arctic Smartness is that Lapland is being recognised as a most innovative sparsely populated region in the EU by 2022. Arctic Smartness is reaching towards its vision by focusing on regional clusters and ecosystem thinking. These clusters support the co-creation and development of the new regional value chains that generate growth and innovation activities of SMEs. The implementation of the S3 focuses on bringing in the cross-cutting intervention, which will stimulate the finding of new interfaces where cross-fertilisation appears. This way, the innovations based on Arctic creativity will be born. With the modern clusters of Arctic industry and circular economy, Arctic smart rural communities, Arctic design, Arctic safety and Arctic development environments, Lapland is becoming an internationally competitive region.

Despite the remarkable large-scale industrial development, Lapland is actively strengthening its cleantech nature and supporting the small-scale refining industry, which is providing solid foundation for the region. Innovations in fields like tourism safety, locally produced food, decentralised renewable energy or wood construction are great platforms for long term inter-regional cooperation and specialisation.

The industrial spearheads for smart specialisation

Lapland is looking for the functional spearheads that support the regional development by diversely strengthening innovating the existing base industries and also initiating the new industries. Education, research and development are better integrated in refining new products and services through the smart specialisation approach.
The Arctic Smartness cluster cooperation in Lapland has increased the visibility of the expertise and experts of Lapland and raised new opportunities to bring developed products and services to the market.

**How does the cluster work?**

1. The cluster assembles businesses of all areas that want to grow and develop in cooperation.
2. Public and private financiers support the growth and development of the cluster.
3. Development companies, regional development organisations and other business support services help the cluster businesses, for example, in the field of supervision of interests and business expertise.
4. For the cluster businesses, cooperation with educational institutions and research organisations enables the long-term development of research and innovation activities.
5. Third sector actors support the cluster in communications and its goals.
6. The cluster imports and exports the most recent international information to and from the area.
7. The cluster operates in close cooperation with the authorities (transmitting messages from the businesses).
8. The network cooperation generates new innovation. Regional specialisation results in the businesses discovering new market areas and fortifying their business operations.

The Arctic Smartness cooperation is guiding the clusters and implementing the smart specialisation in Lapland. The excellent cluster work has brought added resources and success to each partner.

The Arctic Smartness cooperation is guiding the clusters and implementing the smart specialisation in Lapland. The excellent cluster work has brought added resources and success to each partner.

The Arctic Smartness clusters in action

The success of the Arctic Industry and Circular Economy Cluster can be measured through the development of business-oriented activities. Cooperation between businesses has become clearer and stronger with the help of pilot experiments, promotions and support to the introduction of the new sustainability assessment tool. Under the lead of Digiplan, both regional and national results have materialised. The Finnish Innovation Fund Sitra is strongly supporting and financing the development of Lapland’s circular economy together with the Lapland University of Applied Sciences. The interest of the region’s businesses in circular economy and sustainable industrial symbiosis has increased because the ideas are starting to show in euros, both in income and savings. The Arctic Smart Rural Community Cluster has been especially successful in the development of business operations of the local food producers and in the activation of the bioenergy producers. The national REKO-model supporting direct sales from producers to consumers has been implemented as a systematic business development tool in the cluster’s food sector. Over 40 producers are already involved in the operations and the producers share a common will to grow as companies and to offer high-quality food products to the region and for export. In addition, the programme for decentralised, renewable energy implemented together with the regional actors and entrepreneurs has been published. The cluster aims to increase small-scale, local and sustainable energy production in the coming years. Together with the Arctic Bioeconomy project of the Regional Council of Lapland, the cluster has gained wide-ranging visibility within the region, country and European Union. The Arctic Development Environments and Arctic Design Clusters have joint forces in part and together promote product development and innovation services targeted at businesses. In order to safeguard international business financing in the clusters, a product or service to be developed must be correctly set up according to the level of technology readiness (TRL). The clusters for design and development environments are currently developing the required set of indicators in accordance with the European framework for TRL. In addition, Arctic Design has accumulated once again significant business financing for the development of design services under the lead of the University of Lapland. The Arctic Safety Cluster has gathered visibility especially as the party putting together a partnership (Smart Specialisation and Innovation Modernisation) that promotes the safety and digitalisation for tourism and as an active leader within the support of the Regional Council of Lapland together with the region of Lapland. The partnership launched on the World Tourism Day in September 2017 is the cluster’s spearhead initiative, which will help Lapland-based businesses to get involved in the international network in order to develop more sustainable and safer tourism. Lapland is also actively involved in the partnerships between the smart specialisation areas and the lead has been assigned to Lapland in these partnerships: tourism, bioenergy and sports. The bioenergy partnership is led by Lapland and Castelli and Loin in Spain and the sports partnership, with the solid support of the Regional Council of Lapland, by Lapland University of Applied Sciences and Southern Norway.

**Promoting cluster cooperation in business**

Successes of Lapland include new regional development and innovation projects. These projects have been created in cooperation between the regional development actors and the public sector that has been formatted. The network of Lapland’s regional developers has become even tighter and more joint decision making and doing things together has been forged. This has also resulted in the gradual activation of the business sector. The greatest challenge, however, remains: how to make the development work visible in the turnover and result of local SMEs in the long run? Concrete results are the only visible effect that way to get businesses genuinely involved in the cluster activities. Before all, businesses seek viable competitive edge from cluster cooperation. Mutual competition of businesses may also be a challenge for cooperation. When the joint goals of businesses are genuinely taken into account from the very beginning, the cooperation of the businesses can be supported in the clusters while observing their competitive situations.

Regional Council of Lapland remains grateful for the regional partners and experts involved in cluster development and Arctic Smartness cooperation. The dedication and hard work for the mutual goals has led to tangible results. Supportive and helpful attitude of dozens of people in Lapland has enabled more powerful development to build on. We believe, that even greater results will be achieved together in the future.”

— Mika Riipi, County Governor of Lapland
Active partnerships in the Horizon 2020 projects

The two-year experience with the Arctic Smartness society has thoroughly changed my work and also my attitude towards the regional cooperation and internationalisation.

– Dr. Kari Mikkola, Senior Scientist, Natural Resources Institute Finland (Luke), Rovaniemi

Education in Arctic Industry and Circular Economy Cluster

BACHELOR AND MASTER DEGREE LEVEL OF EDUCATION IN TWO COURSES. The aim for these courses is to work in an authentic customer client-project-environment concerning the case of industrial side streams. Student gets acquainted with production technology R&D case study given by a customer company. Research problems of clients were solved by the project groups of students using the best environments of Luleå University of Applied Sciences. A major part of learning is to operate with standard specifications of RDI unit in the area of project management and communication with the customer company. Study module were and will be carried out in real life case.

OTHER EUROPEAN ACTIVITIES IN THE CLUSTER

MSP- REFRAIM (4 workshops 2015-2016) MSP-REFRAIM (Multi-Stakeholder Platform for a Secure Supply of Refractory Metals in Europe) is now available. The project’s main aim has been to address these challenges by creating a common multi-stakeholder platform that will draw the current value chain of refractory metals value chains and identify its potential innovation to support the implementation of the EIP on Raw Materials.

SCREEN (1 workshop 2017, to be continued) SCREEN (Solutions for Critical Raw Materials – A European Expert Network project aims to create a long-lasting Expert Network on Critical Raw Materials issues. The activities of the project are focused on the promotion of critical raw materials primary resources, secondary resources (recycling) and substitution of materials and processes.

ECOSYSTEM OF THE ARCTIC INDUSTRY

• Ecosystem of the Arctic Industry is an operational environment and unique innovation platform.
• The process chain, which is largely contributed to the Kemi-Tornio mining project.
• Mining industry is active throughout Lapland.
• With the long traditions in Lapland the coexistence between industries using natural resources has been amicable.

CLUSTER IN A NUTSHELL

• Arctic Industry and Circular Economy Cluster

• The example of Lapland’s Arctic Industry and Circular Economy Cluster is a very good one of how smart specialisation strategies are translated through clusters and cluster organisations into concrete business and R&D activities that promote economic development in a region.*

– Thomas Lämmel-Gamp, Director, European Secretariat of Cluster Analysis (ESCA)

The horizon 2020 project ROSEWOOD (European Network of Regions on Sustainable Wood Mobilisation) in 2017 – the first for one of the institutes in Finnish Lapland. The two-year experience with the Arctic Smartness society has thoroughly changed my work and also my attitude towards the regional cooperation and internationalisation.

– Dr. Kari Mikkola, Senior Scientist, Natural Resources Institute Finland (Luke), Rovaniemi

Active partnerships in the Horizon 2020 projects

The two-year experience with the Arctic Smartness society has thoroughly changed my work and also my attitude towards the regional cooperation and internationalisation.

– Dr. Kari Mikkola, Senior Scientist, Natural Resources Institute Finland (Luke), Rovaniemi

Education in Arctic Industry and Circular Economy Cluster

BACHELOR AND MASTER DEGREE LEVEL OF EDUCATION IN TWO COURSES. The aim for these courses is to work in an authentic customer client-project-environment concerning the case of industrial side streams. Student gets acquainted with production technology R&D case study given by a customer company. Research problems of clients were solved by the project groups of students using the best environments of Luleå University of Applied Sciences. A major part of learning is to operate with standard specifications of RDI unit in the area of project management and communication with the customer company. Study module were and will be carried out in real life case.

OTHER EUROPEAN ACTIVITIES IN THE CLUSTER

MSP- REFRAIM (4 workshops 2015-2016) MSP-REFRAIM (Multi-Stakeholder Platform for a Secure Supply of Refractory Metals in Europe) is now available. The project’s main aim has been to address these challenges by creating a common multi-stakeholder platform that will draw the current value chain of refractory metals value chains and identify its potential innovation to support the implementation of the EIP on Raw Materials.

SCREEN (1 workshop 2017, to be continued) SCREEN (Solutions for Critical Raw Materials – A European Expert Network project aims to create a long-lasting Expert Network on Critical Raw Materials issues. The activities of the project are focused on the promotion of critical raw materials primary resources, secondary resources (recycling) and substitution of materials and processes.

ECOSYSTEM OF THE ARCTIC INDUSTRY

• Ecosystem of the Arctic Industry is an operational environment and unique innovation platform.
• The process chain, which is largely contributed to the Kemi-Tornio mining project.
• Mining industry is active throughout Lapland.
• With the long traditions in Lapland the coexistence between industries using natural resources has been amicable.

CLUSTER IN A NUTSHELL

• Arctic Industry and Circular Economy Cluster

• The example of Lapland’s Arctic Industry and Circular Economy Cluster is a very good one of how smart specialisation strategies are translated through clusters and cluster organisations into concrete business and R&D activities that promote economic development in a region.*

– Thomas Lämmel-Gamp, Director, European Secretariat of Cluster Analysis (ESCA)

The horizon 2020 project ROSEWOOD (European Network of Regions on Sustainable Wood Mobilisation) in 2017 – the first for one of the institutes in Finnish Lapland. The two-year experience with the Arctic Smartness society has thoroughly changed my work and also my attitude towards the regional cooperation and internationalisation.

– Dr. Kari Mikkola, Senior Scientist, Natural Resources Institute Finland (Luke), Rovaniemi

Active partnerships in the Horizon 2020 projects

The two-year experience with the Arctic Smartness society has thoroughly changed my work and also my attitude towards the regional cooperation and internationalisation.

– Dr. Kari Mikkola, Senior Scientist, Natural Resources Institute Finland (Luke), Rovaniemi

Education in Arctic Industry and Circular Economy Cluster

BACHELOR AND MASTER DEGREE LEVEL OF EDUCATION IN TWO COURSES. The aim for these courses is to work in an authentic customer client-project-environment concerning the case of industrial side streams. Student gets acquainted with production technology R&D case study given by a customer company. Research problems of clients were solved by the project groups of students using the best environments of Luleå University of Applied Sciences. A major part of learning is to operate with standard specifications of RDI unit in the area of project management and communication with the customer company. Study module were and will be carried out in real life case.

OTHER EUROPEAN ACTIVITIES IN THE CLUSTER

MSP- REFRAIM (4 workshops 2015-2016) MSP-REFRAIM (Multi-Stakeholder Platform for a Secure Supply of Refractory Metals in Europe) is now available. The project’s main aim has been to address these challenges by creating a common multi-stakeholder platform that will draw the current value chain of refractory metals value chains and identify its potential innovation to support the implementation of the EIP on Raw Materials.

SCREEN (1 workshop 2017, to be continued) SCREEN (Solutions for Critical Raw Materials – A European Expert Network project aims to create a long-lasting Expert Network on Critical Raw Materials issues. The activities of the project are focused on the promotion of critical raw materials primary resources, secondary resources (recycling) and substitution of materials and processes.

ECOSYSTEM OF THE ARCTIC INDUSTRY

• Ecosystem of the Arctic Industry is an operational environment and unique innovation platform.
• The process chain, which is largely contributed to the Kemi-Tornio mining project.
• Mining industry is active throughout Lapland.
• With the long traditions in Lapland the coexistence between industries using natural resources has been amicable.

CLUSTER IN A NUTSHELL

• Arctic Industry and Circular Economy Cluster

• The example of Lapland’s Arctic Industry and Circular Economy Cluster is a very good one of how smart specialisation strategies are translated through clusters and cluster organisations into concrete business and R&D activities that promote economic development in a region.*

– Thomas Lämmel-Gamp, Director, European Secretariat of Cluster Analysis (ESCA)
I combine the expertise of those operating in different sectors in Lapland. We will have the knowledge and skills to develop the products and services that are already high in quality into world-class success stories. We just need to re-ignite our notions of a dying country and to prove the opposite - to dismiss our notions of a dying country - with big visions of rural Lapland.

**Big visions of rural Lapland – still down to Earth**

The current state of rural areas might seem depressing when viewed from Lapland, but in Europe it is considered a treasure trove. The preconditions of rural life are dependent on the developing business activities. We live in the midst of nature’s own treasure trove.

![Photo: Lapin materiaalipankki | Antti Pietikäinen](image)

**Procurement impacts on regional economy**

By the Aland islands, a remote corner of the world, at the moment. Rural Lapland is by no means a rural area and to prevent the outflow of rural capital. We must move the products and services that are already high in quality into world-class success stories. One concrete example of the impacts of fleeing capital is the location of the regional economy in one region.

**Example:** procurement impact on regional economy in one region

In a tender for energy wood a Russian vendor was chosen. The decision was made because of price. However, the result of this decision was negative impacts on the regional economy. The Russian vendor brought the energy wood to the nearest port and from there to the customer. This means that the money was spent outside Lapland and the products did not benefit the local economy.

**All operations of the cluster are focused on the development of the selected business sectors. An operating method has been created for the clusters wherein the aim is to find solutions for the existing problems of entrepreneurs and to introduce new entrepreneurs to the sector. The tool for this is the knowledge development, which covers training, research and the counseling needed by entrepreneurs. We consensually need new research data and new produc-able hands in order to make entrepreneur- ship profitable in Lapland. The regional development tools serve as resources for the development of business operations and knowledge. With the help of different projects, for example, we can tackle the challenges faced by the development of entrepreneurs and knowledge, distribute information efficiently and influence our decision-makers. The operations of the different sub-areas of the Rural Cluster result in a business-driven cluster that is able to identify the bottlenecks in the rural area’s business development and resolve them with the help of an extensive cooperation network and, finally, stop the outflow of capital plaguing the rural areas as a major component in capital.**

When we manage to put an end to the fleeing of capital and turning the trend to the opposite direction, the benefits will multiply within the area.

When we manage to put an end to the fleeing of capital and turning the trend to the opposite direction, the benefits will multiply within the area.

The entrepreneurship, knowledge and regional development activities. The operations of the Rural Cluster aim to improve the local growth of the value added of the rural raw materials in order to maintain an increasing amount of capital with the owners of raw materials.

When we manage to put an end to the fleeing of capital and turning the trend to the opposite direction, the benefits will multiply within the area. The new entrepreneurship generated in the area will help in generating economic growth and capital will remain in the area. As capital remains in the region, new jobs are created, which in turn generates well-being for the people. Due to the employment opportuni-ties and rich nature, rural Lapland is seen as an attractive place to live in, which, for one, attracts especi-ally young returning migrants and new residents to Lapland. We need young, innovative entrepreneurs to vitalise the local business life, among other things, in the form of new kinds of businesses.

This will generate a positive cycle with a huge impact on the future of all of rural Lapland. Join us in generating a positive cycle by doing things together! The Arctic Smart Rural Community Cluster i.e. Rural Cluster, is constantly working with might and main for the vitality of rural Lapland. We all carry responsibility for the future Lapland, so all hands are needed on deck in the activities of the Rural Cluster – let’s do it together.

---

**Further information**

Cluster Manager Tanja Häyrynen
Johanna.johannes@lapinliitto.fi
050 40 704 33

---

**Procurement impacts on regional economy**

Big visions of rural Lapland – still down to Earth

The current state of rural areas might seem depressing when viewed from Lapland, but in Europe it is considered a treasure trove. The preconditions of rural life are dependent on the developing business activities. We live in the midst of nature’s own treasure trove.

**Procurement impacts on regional economy**

Example: procurement impact on regional economy in one region

In a tender for energy wood a Russian vendor was chosen.

**“Savings” were estimated 9 000 € per year.**

Lessons: 6-9 jobs, 312 000 € in taxes and 210 000 € in harvest subsidies.

**Overall losses to the regional economy approximately 648 000 € per year**

---

**Cluster in a nutshell**

**Arctic smart rural community cluster, i.e. rural cluster**

- The objective is to prevent capital fleeing rural areas and to demonstrate to other people that rural areas offer good possibilities for profitable business operations.
- The focus is on further processing of food and the development of decentralised renewable energy.
- Contains multiple supportive sub-entities: the entrepreneurship, knowledge and regional development entities.
- A network of 100 entrepreneurs and 200 developers of municipalities, financiers, politicians, projects, research and educational institutes and business advisors.
- Centralised and industry specific knowledge on food processing and multipolar energy production.
- Coordinates international development and project activities.
Arctic development environments produce services for the region’s businesses

The significance of development environments and experts working there to the area’s RDI activities has been traditionally valued in Lapland, which is why much investment have been made in them. The development environments are physical and virtual environments meant for use in learning and innovation, such as laboratories, studios, workshops or simulation environments where products, services and expertise can be further developed.

The new operating model will be used to develop an innovation ecosystem based on the research activities of Lapland with a focus on RDI-based innovation cycle management and the identification of technology readiness levels (TRL).

The ideas and concepts created with the help of pilots, and concrete results will be served to businesses and for utilisation in the laboratory by employees and subcontractors. pLAB has created in cooperation with research centre CERN, located in Switzerland, a virtual reality platform of the planned research buildings. It can be used, for example, to contemplate the impact of the buildings on the area’s residents and train the employees of the institute already in advance.

In VR Logging game the player can try the principles of logging in virtual reality. The game was created in a project called Alola, which aims to raise the players’ awareness about the forest sector. Alola is a EU-funded project carried out together with Lapland UAS and Finnish VR organization.

Anyone can download an application called Hello3D from the app store of his/her smart phone. The development of the laboratory started as early as 2001 with funding from the European Regional Development Fund and, today, pLAB is an international actor that creates high quality game environments for use by different industrial sectors. The laboratory runs with project funding (90%) and employs approximately 20 people ranging from IT and game field experts to graphic designers.

In addition, students have the opportunity to develop their professional skills in the laboratory by participating in different projects.

Learn more about pLAB’s virtual learning environments online:

• Arctic research, development and innovation services in Lapland
• 50 modern development environments
• More than 750 experts and specialists
• Multidisciplinary research communities from University of Lapland, Lapland University of Applied Sciences, Natural Resources Institute Finland, Geological Survey of Finland, Natural College Lapua and Lapland Vocational College
• Arctic Power – Cold climate testing
• Arctic Steel and Mining – Ultra strong steel and bulk steel research and testing
• ENVIR – Welfare business virtual centre
• Natural Resource Institute Finland – laboratory, environment, food and primary research
• SINCO – Service design facilities
• SKY – social and healthcare simulation environment
• Audiospatial production research and testing studio

Objectives of the Arctic Development Environments Cluster

• Producing added value to the business life of Lapland, improving the businesses’ competitiveness and creating new businesses
• Generating added value to the other organisations operating in the network
• Strengthening the RDI activities of Lapland
• Identifying core competence and managing those areas of competence
• Developing shared service models
• Strengthening the cooperation between the Arctic Clusters
• Increasing international funding and competence

FURTHER INFORMATION

Cluster Manager Ramo Pyyny
raimo.pyyny@lapinamk.fi
+358 40 550 8065

Approximately ten RDI organisations operate in Lapland and they manage approximately fifty different development environments. The Lapland-based RDI organisations operate as separate actors according to their own organisations’ objectives and strategic goals. The Arctic Development Environments Cluster started its operations in autumn 2015 by mapping the RDI field of Lapland and the development environments situated there. The objective of the Arctic Development Environments Cluster is to bring together the RDI environments and experts operating separately in Lapland to form a uniform body to serve the region’s business life and to enable the development of business life and business investments in product development and internationalisation.

Freely starting and small businesses, for example, often do not have contacts to the research world and they often have business related development needs but lack the required resources. The task of the cluster is to bring together the RDI services of Lapland by establishing Lapland’s regional research, development and innovation activity expertise entity where research activities are allocated across organisational limits with a business life need orientation. A joint research strategy will be formed for the expertise centre to strengthen the region’s Arctic research and research strategy and to enable the mandates and roles of separate research institutes to join forces.

The new operating model will be used to develop an innovation ecosystem based on the research activities of Lapland with a focus on RDI-based innovation cycle management and the identification of technology readiness levels (TRL).

The new operating model will be used to develop an innovation ecosystem based on the research activities of Lapland with a focus on RDI-based innovation cycle management and the identification of technology readiness levels (TRL).
The main purpose of the Arctic Design Cluster is to make local businesses, products and services nationally and internationally competitive. The cluster brings together expertise on arctic conditions, culture and knowledge on materials and assets to solve the challenges of sparsely populated areas. At the heart of the cluster is Arctic Design Centre where the businesses, science and art meet.

The Arctic Design Centre of Expertise, created by the faculty of art and design of University of Lapland, promotes cooperation between the local businesses, educational institutions, the city of Rovaniemi and regional development organisations. At the centre of expertise small design enterprises can create and test their prototypes with the new technologies developed by the university and get access to the exhibition spaces. The Arctic Design Centre can boost the innovation of new products and regions of mature ones. The Arctic Design Cluster has a vision to become a world leader in Arctic Design.

PRODUCT DESIGN innovates international cutting-edge products that are individualised and ready for production. Product design utilises 3D models and physical prototypes of high quality conveying the design vision and expertise. Product design prototypes enable the testing and development of new product ideas, evaluation of the products by consumers and communicating the innovations to larger audiences.

INTERACTION DESIGN creates practical and innovative interfaces for physical and digital products, product concepts and services. It combines international cutting edge research, participatory methods and design expertise from different fields.

APPLIED VISUAL ARTS combines participatory design, art in public spaces and applied visual art to service design in ways that are culturally sensitive, attractive for tourists and easy to take into account expertise in Arctic conditions.

ARCTIC DESIGN CLUSTER STRATEGY 2017 – 2020

- Linking the Arctic design cluster internationally
- European cluster co elaboration
- Accelerating design driven entrepreneurs in the region
- Support innovative start ups
- Create new prototypes and development environments
- Contribute to the Academic arena by publishing research papers based on Arctic Design

ARCTIC DESIGN CLUSTER MARKET SEGMENTS AND POTENTIAL
- Now 150 members, 10 SMEs, 9 large companies, 64 research organisations and 25 ecosystem actors.
- Strengthen the key areas and find new fields in Arctic Design
- Move away barriers to SMEs
- Stimulating cold climate
- Accelerating entrepreneurs for new innovations
- IPR support to innovative firms

SINCO LABORATORY as a tool of the Design Cluster

Sino is Service Innovation Corner, the first ever service design laboratory, which started its operations at the university of lapland’s Faculty of Art and Design in 2009, with the support of the EU’s structural funds. The idea of Sinco started from a so-called mock-up model used in industrial design. Mock-up model is the first prototype of the product to be manufactured and used for product development.

Sinco is reminiscent of a small theatre brought to life with new technologies. The service design that is being developed is photographed and videoed and brought into the laboratory where it is turned into an experience prototype to be developed together with the service producer and customers. At Sinco, entrepreneurs get to try their service from the consumer’s perspective, which is not an easy task. The design ideas have been tested both globally, most recently to Volkswagen in Germany. There is also a mobile version of the laboratory, which has enabled the export of service design from Lapland to e.g. Nagoya and Nambia.

Interactive Surfaces

The EU has granted EUR 6.7 million in Horizon 2020 funding to the DesoOmn project that will begin in 2018. The purpose of the world-leading project is to develop technology that will enable printed display elements to be embedded into different surfaces using low-energy electronics technology. The project is led by the University of Lapland and conducted by professor Anna Hakkilä from the Faculty of Art and Design. The project involves 15 partners, both businesses and research institutes, from 10 different countries.

As explained by professor Arto Kekäläinen, the main idea is that all kinds of stimulus can be embedded in surfaces, which can be used as an interface to display certain information.

Sinco Laboratory is an environment created in collaboration with Sinco’s service design and business development specialists. The main idea is to test innovative service ideas in a laboratory environment. As the service is being developed, it is constantly tested and improved.

The research and development of the laboratory, which has expanded the export of service design from Lapland to Nagoya and Nambia.
Tourism safety cluster on international arenas

An essential part of the Arctic Smartness programme is to strengthen business opportunities through networking, international operations and internationalisation of the region, clusters, businesses and other actors.

Neither objective is to use research, development and innovation in Arctic clusters to strengthen the region’s and its actors’ role and status in the international networks, i.e. to serve as a kind of pioneer to other actors.

The “Digitalisation and Safety for Tourism” theme network has been approved for the European Smart Specialisation Platform for Industrial Modernisation thematic network, which is led by Lapland/Multidimensional Tourism Institute together with Andalusia. The other regions of the initiative are Lazio and Tuscany in Italy, Catalonia, Valencia and Castile and León in Spain and Slovenia. The objective of the network is to support tourism businesses especially in matters relating to digitalisation and safety. The network strengthens innovation activities, based on open innovation, cluster-like operations and new technology. Via the thematic networks, the regions can impact the funding of the EU being prepared and, therefore, improve their chances of receiving direct EU funding. In addition, the development of the theme is supported by NECSSTour, which is the Network of European Regions for Competitive and Sustainable Tourism. The Lapland Safety Network has prepared two new courses to improve the Arctic experience and cooperation of actors. Arctic Guide is an online course in English that instructs new guides to operate safely in the Arctic operating environment. Arctic Rescue Guide is a certification course for experienced guides and it instructs them on how to assist the authorities in search and rescue assignments.

In the UArctic network, a Safety, Security and Sustainability (NECSTour) network, which is the Network of European Regions for Competitive and Sustainable Tourism, has also been established and it includes a sub-theme called Tourism Safety, which is coordinated by Lapland Safety. Safety is a precondition for the growth and well-being of the Arctic communities and the region’s visible and durable commercial operations. Arctic’s thematic network Arctic Safety and Security targets the risks and operating methods of the Arctic area that can be used, especially in matters relating to digitalisation and safety. The network strengthens innovation activities, based on open innovation, cluster-like operations and new technology. Via the thematic networks, the regions can impact the funding of the EU being prepared and, therefore, improve their chances of receiving direct EU funding. In addition, the development of the theme is supported by NECSSTour, which is the Network of European Regions for Competitive and Sustainable Tourism. The Lapland Safety Network has prepared two new courses to improve the Arctic experience and cooperation of actors. Arctic Guide is an online course in English that instructs new guides to operate safely in the Arctic operating environment. Arctic Rescue Guide is a certification course for experienced guides and it instructs them on how to assist the authorities in search and rescue assignments.

In the UArctic network, a Safety, Security and Sustainability (NECSTour) network, which is the Network of European Regions for Competitive and Sustainable Tourism, has also been established and it includes a sub-theme called Tourism Safety, which is coordinated by Lapland Safety. Safety is a precondition for the growth and well-being of the Arctic communities and the region’s visible and durable commercial operations. Arctic’s thematic network Arctic Safety and Security targets the risks and operating methods of the Arctic area that can be used, especially in matters relating to digitalisation and safety. The network strengthens innovation activities, based on open innovation, cluster-like operations and new technology. Via the thematic networks, the regions can impact the funding of the EU being prepared and, therefore, improve their chances of receiving direct EU funding. In addition, the development of the theme is supported by NECSSTour, which is the Network of European Regions for Competitive and Sustainable Tourism. The Lapland Safety Network has prepared two new courses to improve the Arctic experience and cooperation of actors. Arctic Guide is an online course in English that instructs new guides to operate safely in the Arctic operating environment. Arctic Rescue Guide is a certification course for experienced guides and it instructs them on how to assist the authorities in search and rescue assignments.

In the UArctic network, a Safety, Security and Sustainability (NECSTour) network, which is the Network of European Regions for Competitive and Sustainable Tourism, has also been established and it includes a sub-theme called Tourism Safety, which is coordinated by Lapland Safety. Safety is a precondition for the growth and well-being of the Arctic communities and the region’s visible and durable commercial operations. Arctic’s thematic network Arctic Safety and Security targets the risks and operating methods of the Arctic area that can be used, especially in matters relating to digitalisation and safety. The network strengthens innovation activities, based on open innovation, cluster-like operations and new technology. Via the thematic networks, the regions can impact the funding of the EU being prepared and, therefore, improve their chances of receiving direct EU funding. In addition, the development of the theme is supported by NECSSTour, which is the Network of European Regions for Competitive and Sustainable Tourism. The Lapland Safety Network has prepared two new courses to improve the Arctic experience and cooperation of actors. Arctic Guide is an online course in English that instructs new guides to operate safely in the Arctic operating environment. Arctic Rescue Guide is a certification course for experienced guides and it instructs them on how to assist the authorities in search and rescue assignments.

In the UArctic network, a Safety, Security and Sustainability (NECSTour) network, which is the Network of European Regions for Competitive and Sustainable Tourism, has also been established and it includes a sub-theme called Tourism Safety, which is coordinated by Lapland Safety. Safety is a precondition for the growth and well-being of the Arctic communities and the region’s visible and durable commercial operations. Arctic’s thematic network Arctic Safety and Security targets the risks and operating methods of the Arctic area that can be used, especially in matters relating to digitalisation and safety. The network strengthens innovation activities, based on open innovation, cluster-like operations and new technology. Via the thematic networks, the regions can impact the funding of the EU being prepared and, therefore, improve their chances of receiving direct EU funding. In addition, the development of the theme is supported by NECSSTour, which is the Network of European Regions for Competitive and Sustainable Tourism. The Lapland Safety Network has prepared two new courses to improve the Arctic experience and cooperation of actors. Arctic Guide is an online course in English that instructs new guides to operate safely in the Arctic operating environment. Arctic Rescue Guide is a certification course for experienced guides and it instructs them on how to assist the authorities in search and rescue assignments.

In the UArctic network, a Safety, Security and Sustainability (NECSTour) network, which is the Network of European Regions for Competitive and Sustainable Tourism, has also been established and it includes a sub-theme called Tourism Safety, which is coordinated by Lapland Safety. Safety is a precondition for the growth and well-being of the Arctic communities and the region’s visible and durable commercial operations. Arctic’s thematic network Arctic Safety and Security targets the risks and operating methods of the Arctic area that can be used, especially in matters relating to digitalisation and safety. The network strengthens innovation activities, based on open innovation, cluster-like operations and new technology. Via the thematic networks, the regions can impact the funding of the EU being prepared and, therefore, improve their chances of receiving direct EU funding. In addition, the development of the theme is supported by NECSSTour, which is the Network of European Regions for Competitive and Sustainable Tourism. The Lapland Safety Network has prepared two new courses to improve the Arctic experience and cooperation of actors. Arctic Guide is an online course in English that instructs new guides to operate safely in the Arctic operating environment. Arctic Rescue Guide is a certification course for experienced guides and it instructs them on how to assist the authorities in search and rescue assignments.
Lapland is a unique arctic region that strives to be the most innovative and business-driven sparsely populated area in the EU and Circumpolar Arctic by 2022. Future aims are high, but the actions taken to reach this goal are concrete and remain close to the actors.

The future looks smart and excellent.

Lapland’s Arctic Smartness concept gives a shining example of how regions may successfully enhance their development activities and utilisation of EU resources. Dedication, cooperation across different sectors and strong common vision are the key ingredients,” says Kari Aalto, the director of East and North Finland EU Office.

The vision of Arctic Smartness approach in Lapland is to become an acknowledged and valuable partner in EU in smart specialisation spearhead industries, such as mining and metal industry, bioeconomy, as well as tourism and its sub-industries. This vision is pursued by means of effective cluster activities.

Several subcluster functions under Lapland’s five Arctic Smartness clusters. The clusters represent a new way of cooperating across organisational boundaries and developing new regional value chains. The core of cluster activities is to create growth and innovation opportunities for SMEs in Lapland. The clusters functioning in Lapland have established a firm foothold in regional development work and discovered their own networks in international arenas as well. The clusters are being continuously developed further in line with recommendations of SMEs and cluster organisations. All clusters in Lapland have already been awarded the Bronze Label in cluster evaluation, and furthermore, the Rural cluster and the Industry and Circular economy cluster have already achieved Silver Label.

The clusters are strongly leaning towards the future. Arctic Industry and Circular Economy Cluster will continue its work in creating industrial symbiosis and putting circular and bioeconomy in practice in Lapland together with industrial and service businesses. Arctic Smart Rural Community Cluster will concentrate on developing micro-enterprises’ business and gathering new entrepreneurs into the cluster. Both clusters aim towards the Golden Cluster Label. Arctic Development Environments Cluster will mainly focus on creating a centre of excellence, which offers businesses in Lapland help and support in refining preliminary business ideas into market-ready products and services. Arctic Design Cluster’s vision is to become a global leader in arctic design research by 2020 and to use this expertise to support the international competitiveness of local businesses, products and services. Arctic Safety Cluster will make continuous efforts in order to strengthen business interface operations and internationalisation including stronger tourism approach in the future.

Active international networking aims to ensure channeling international funding into the region. The primary aim of all activities is to establish permanent action that will outline the projects. Arctic Smartness activities provide stakeholders in Lapland continuous opportunities to participate different networks, both nationally and internationally. This will open up possibilities for new innovation, skills and funding, and furthermore, increase local know-how in regional development. At the same time, the actors must ensure that smart specialisation is put into practice to raise awareness about Lapland’s economy by producing feasible material and information about the statistics in the region.

The future of Lapland looks smartly excellent. “Via Arctic Smartness activities, we offer SMEs in Lapland a healthy and stable breeding ground for growth and development. With tightened cooperation between regional actors and entrepreneurs, we will become even more powerful in international networks and markets as well,” says Kristina Jokela-Jokela, Director of international relations in the Regional Council of Lapland.

Lapland is being recognised as a most innovative sparsely populated region in the EU and Circumpolar Arctic by 2022.