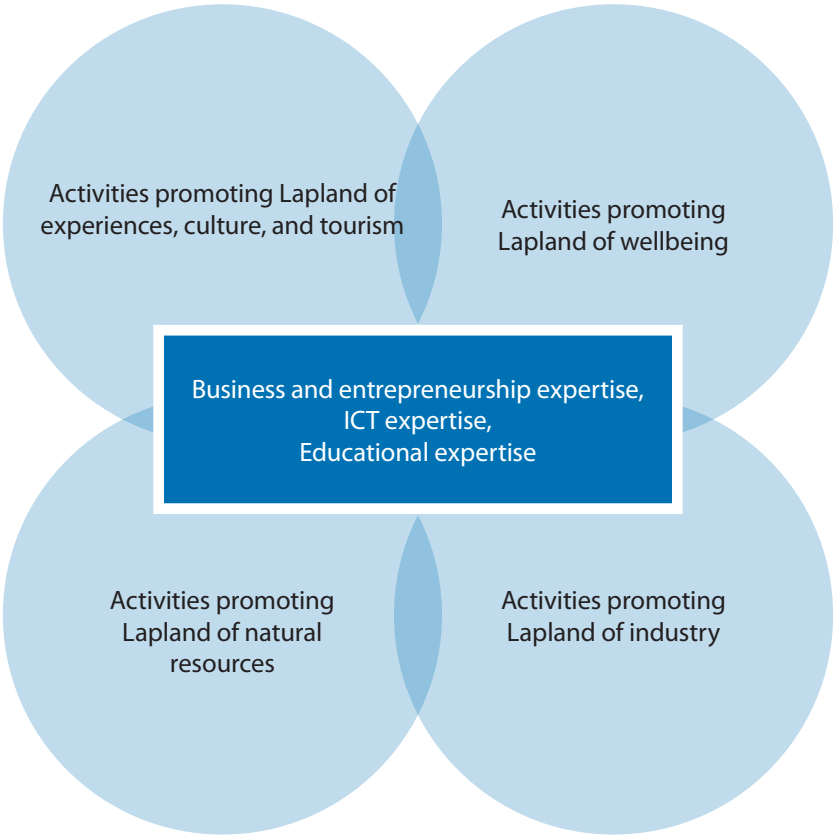
Innovation Programme of the Universities of Lapland 2009 – 2012



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Photos: City of Kemi (page 8), Mika Vettainen (page 13), RAMK (page 19)

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1 Introduction

The development and wellbeing of a strongly evolving province and its actors require a continuous lookout for competitive advantages and constant development of service processes. This extensive development work can be described, studied, and conducted through innovation systems of actors, expertise, and resources. By forming these systems and by enhancing cooperation between their constituents it is possible to combine development resources in a customer-oriented and effective way. The role and tasks of universities are important within innovation systems, but in practice they have proven to be quite challenging in many areas.

The Lapland University Consortium is the result of the structural development of the University of Lapland as well as Rovaniemi and Kemi-Tornio Universities of Applied Sciences. Reinforcing and focusing its research and development activities provide a good opportunity to strengthen cooperation between the universities and other development actors and between the universities and businesses engaged in innovation processes. The innovation programme, designed to implement the strategic objectives of the Lapland University Consortium, is the universities' joint statement of the targets and practices through which the universities increasingly support the readiness of the provincial private and public sectors for reform and change. The innovation programme is aimed to develop expertise, entrepreneurship, and business in the region, which in turn helps especially the region's small and medium-sized enterprises to evolve.

The innovation programme of the universities of Lapland covers the research, development, and service activities that promote the development of the chosen focal areas. This will support the creation of technological, commercial, and social innovations. The programme is implemented through the projects and basic operations of both the consortium and its parties. However, the selection of innovation targets and focal points does not exclude the possibilities for free research and development at the universities of Lapland.

Implementing the innovation programme generates new research, education, and project activities in the interests of the region, which then yields competitive advantages and better service practices for companies and other organizations. The programme enhances cooperation between innovation actors and decreases overlaps in research and development by improving the coordination of service-oriented R&D. In addition to regional development, the programme outlines the operation of the university units, strengthens the use of scientific knowledge in development work, and increases the personnel's service and development skills. It is also used to confront the challenges of national and international innovation politics. Further, the programme encourages the university personnel to engage in long-term R&D work and to interact with their operating environment.

The programme has been drawn up by a team consisting of representatives of the universities of Lapland, the Regional Council of Lapland, and the technology department of the Employment and Economic Development Office. The team's composition and participative working methods ensured that the targets, practices, and focal areas of the programme correspond to the views of the universities, regional development officials, and other regional actors on the future of Lapland and to the needs of R&D activities. The work was based on and supported by background material related to

2 Lapland as an environment for innovation

innovation activities.
The universities of Lapland are part of Lapland's innovation environment that is based on the economic conditions, practices, culture, and shared history of the region. Lapland's innovation environment is also shaped by the networks and social relations of actors and, above all, by the region's resources – especially those related to development[1].

Regional conditions of innovation activities

Lapland is the northernmost and largest province of Finland. Its area covers roughly 99,000 km^2 and in 2007 it had a population of 184,390. The province's population is declining; according to Statistics Finland, the prognosis for 2012 is 181,525. The region's unemployment situation is clearly worse compared to the country as a whole. The same applies to Lapland's GNP.

From the viewpoint of employment, Lapland's economic structure depends largely on the public sector, especially on public services. Other important sources of employment are industry and construction. Lapland is further divided into six regions with their own business structures, economic conditions, and resources of expertise. The strong regional business areas include process industry, tourism, primary production, and mining as an emerging area. The regions of Kemi-Tornio and Rovaniemi are developing fast, whereas Eastern Lapland is faced with great economic changes as significant employers are closing their operations in the region.

However, the location of Lapland by the Barents region boosts the province's international activities and cooperation with other countries. Its position at the intersection of Europe, Russia, and the Nordic and Arctic countries provides a good opportunity to make new economic initiatives. Lapland's location makes it possible for it to benefit from the large industrial investments made in the Barents region. The location and especially the geographical characteristics of the province are among the strengths of Lapland. The region's conditions and magnificent nature enable it to reinforce the existing business areas and to develop new economic activity.

Actors of the innovation system and development activities

Lapland has approximately 9,000 companies, of which 99% employ fewer than 50 persons and 93% fewer than 10 persons. There are many lines of business but the number of growth-oriented companies is small. In spite of this, the R&D expenditure of the companies has been rising and the significance of companies as innovation actors has increased. In the coming years, extensive investments are expected in various fields, and this leads to new opportunities and development needs especially in companies within industry, tourism, mining, and cold and winter technologies. Service development within the private and public sectors also has a strong future in Lapland.

The universities of Lapland have a visible role in the region's innovation activities. Education forms a strong basis for the universities' innovation activities. The expertise stemming from education is built further by versatile research and development activities. This forms a platform for the regional mission of the universities. The universities' regional mission encompasses various societal service functions, such as acting as an influencer in regional

[1]Lapland's innovation environment and system have been subject to an extensive study within the TeRIS project of the EU's sixth framework programme. This section has been written using project reports D3.2a Regional Innovation System of Lapland and D3.3 Analysis Report.

development, in expertise development, and in securing economic wellbeing. The universities are an integral part of Lapland's networks of actors, and they support the region's business activities and service development. The strength of their development activities lies in the practical application of research knowledge. Expertise on the utilization of knowledge is also increased further. Another strength of the universities lies in strong cooperation and in a shared vision of regional development. The universities of Lapland also have advanced information society expertise on the development of teaching methods supporting regional equality and educational accessibility.

Vocational secondary schools educate experts of various fields. The schools cooperate with the region's universities of applied sciences and its businesses. The vocational schools are an essential part of the Lapland University Consortium for example in terms of the tourism and culture institutes. With the universities they form a well-functioning whole to further innovation activities in Lapland.

The state research institutes of the province conduct high-quality basic research and cooperate with the experts, companies, and other actors of their fields. These research institutes have extensive and well-established multinational networks, and their researchers are renowned experts of their fields. The research institutes advance the region's innovation activities often indirectly and on a long-term basis. It is a future challenge to utilize the research results of Lapland's universities and research institutes in regional development. This requires the support of regional actors (region, municipality).

Agent organizations are a good link between companies and the other actors of the innovation system. There are several types of agent organizations in Lapland operating in a particular sector of business or in regional development. The agent organizations of the region have varied roles. They assist companies in reaching their development goals and search for appropriate partners for development projects.

There are many financing channels, and R&D funding is readily available to support innovation in Lapland's companies and research and educational organizations. There are both national and regional services in Lapland to support companies' research and development work. From the viewpoint of innovation policy, many regional R&D programmes and strategies utilize a transparent and participatory design process. The actors of the innovation system, such as universities, agent organizations, officials, financers, and the business sector, cooperate to outline regional objectives. Also the actors of various other sectors have good possibilities to influence programme contents and thereby financing.

An innovation- and expertise-oriented economy increases further the significance of R&D in the promotion of regional competitiveness. Global changes in the economy highlight the importance of expertise as a salient regional attraction[2]. Expertise is created through interaction between successful

[2] Lemola 2006, 11

regional companies, universities and other research institutes, production and service companies, and financers. The actors of Lapland's innovation system share a clear vision of the way in which the region is developed. In general, the development atmosphere is good in Lapland, and the actors of the innovation system know one another. The networks of innovation are small and often based on face-to-face interaction. The small unit size also enables continuous change and flexible practices.

In a global environment, successful education and research units are sufficiently large and specialized. They are also engaged in national and international networks of other centres of expertise. Through research and education that meet the needs of society and business and through prioritization and profiling the universities and thereby the entire region are headed toward the international top[3]. High-level centres of expertise bring weight to large development concepts, and participating in these concepts is a great challenge for actors.

In the new innovation policy situation the universities of Lapland and regional actors must engage in stronger cooperation and direct their development resources at regional and diverse development targets that unite the regional actors and produce customer- and region-oriented innovations.

The universities of Lapland therefore challenge other innovation actors to jointly construct strong regional expertise by choosing the focal areas and development targets of innovation.

[3] Lemola 2006, 12

3 Innovation Programme of the Universities of Lapland

3.1 Vision and objectives

Vision

" The universities of Lapland are well-known and attractive innovation actors."

Implementing the innovation programme of the universities of Lapland makes the university system a strong and renowned developer within the programme's target areas.

Target of development

" Increased vitality and ability to regenerate"

The diverse expertise of Lapland's university system is a development force and provides a competitive edge for the province and its actors.

Objectives of the innovation programme of the universities of Lapland

" To strengthen the role of the Lapland University Consortium in developing the province and its actors"

- to increase the extent and temporal scope of research and development activities serving the region
- to direct the activities at the focus areas and development targets of the province
- to ensure consortium-oriented cooperation in focusing, preparing, and implementing the activities

3.2 Core principles of innovation activities

University cooperation

- highest expertise through cooperation between the universities
- supplementary strengths

Customer-orientation

- emphasized attention to customer needs
- trust
- effectiveness

Regional effectiveness

- activities serving the entire province
- cooperation network

Diverse and new forms of R&D activities

- supplementary concept (innovation push + innovation pull)
- integration of education and R&D activities = new and innovative learning and work practices
- increasing the development of small service enterprises
- leading products

Internationalization

- nearby internationalization
- customer-oriented/customer-driven internationalization
- networking with top international experts

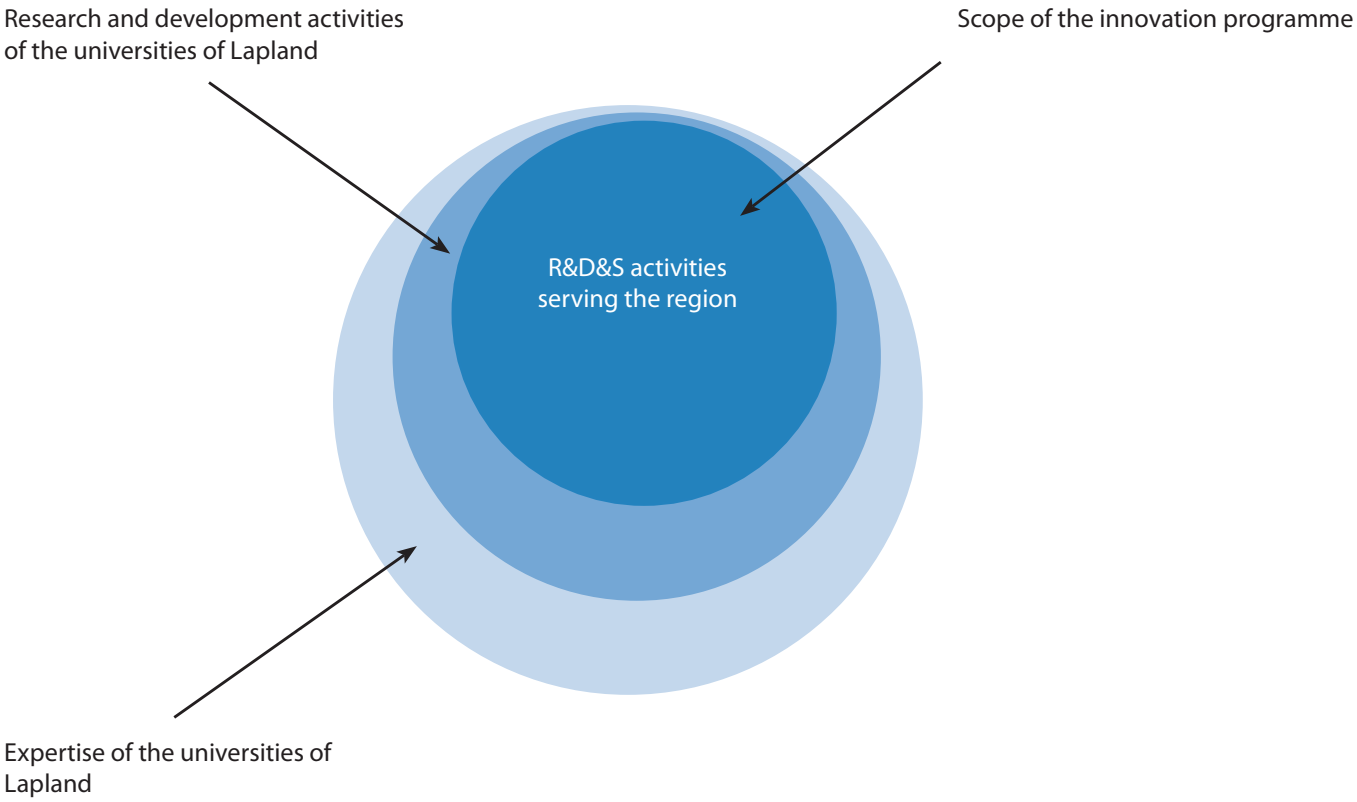


Figure 1. *Scope of the innovation programme*

3.3 Placement of the innovation programme

The innovation programme of the universities of Lapland is used in the future to coordinate the research, development, and service activities that support the operational scope and actors of the universities of Lapland (Figure 1.). Research pursuing other goals and education leading to a degree are not included in the scope of the programme.

3.4 Operating modes of the universities' innovation activities

The universities of Lapland are part of international, national, and regional innovation environments. They function in these environments at various levels and in many roles. In networks based on differing models, innovation builds on universities' own reserve of expertise. From the viewpoint of universities, it is thus important to define how they relay knowledge, how a university's research and development activities and their results can be utilized to support business and regional development, and how a university's own expertise can be utilized in general for the benefit of its region.

Universities have different methods and models through which they influence the development of a region and the businesses and other organizations therein. The innovation activities of the universities of Lapland are based on high-quality national and international R&D work. Expertise acquired through comprehensive and active R&D work acts as a strong tool to influence Lapland's innovation policy and the region's development orientation. Innovation serving the region is based on development area-specific education, research, and project activities, which are strengthened by innovation services meeting the needs of regional actors. The innovation practices conducted at the universities of Lapland are shown in Figure 2.

Diverse and active research and development

As a precondition for innovation, the universities must conduct high-quality and comprehensive research, and the region's knowledge producers must network with national and international knowledge producers and with the regional business sector[4].

[4] Hautamäki 2008, 56-77.

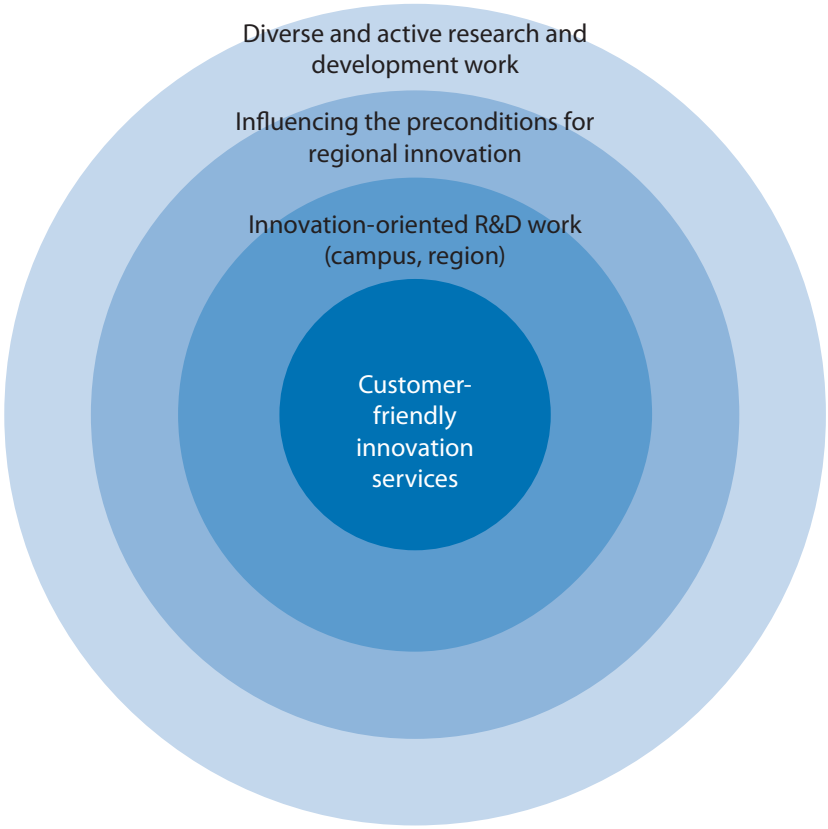


Figure 2. *Innovation practices conducted at the universities of Lapland*

The universities of Lapland represent national and international expertise on Northern dimensions. They participate in national research and development programmes and are continuously in contact with the national innovation strategy and policy. Regionally, the universities form partnerships with educational and research institutes, companies, development organizations, and officials.

Engaged in international cooperation, the universities of Lapland introduce multidisciplinary expertise on Northern and Arctic issues. They engage in international innovation through participation in the joint ventures of the EU, the Barents region, and the Bothnian Arc and, more extensively, through intercontinental cooperation. The objective of the universities of Lapland is to increase their participation in international research programmes and to advance international recognition of their own research and development work.

Influencing the preconditions for regional innovation

One of the cornerstones of regional development and the related innovation policy is the region's institutional and organizational capacity[5].

The universities of Lapland are provincial, specialized developers supporting political decision making by bringing in knowledge and expertise gained through research and development work. The universities *supplement the provincial innovation policy with specialized and comprehensive knowledge* that includes national and international partnerships and cooperation networks in various fields. They also produce *contents to regional programmes by presenting problem-solving methods on the basis of their own expertise*. As salient knowledge producers in the region, the universities shape the future orientation of the regional fields of development by producing and sharing beforehand *knowledge about the prospects and development possibilities*

[5] Sotarauta & Kosonen 2003, 1.

of various areas. In addition, the universities make interventions in existing views and policy definitions and analyze various possibilities from the global, national, and regional viewpoints.

Innovation-oriented R&D work (campus, region)

Innovation is no longer an internal process implemented by an individual actor, sector, or company. Today, it is conducted through networks of experts by utilizing regional research and development[6].

The universities of Lapland participate in the development of urban areas by looking for new ideas to increase business. The universities *produce new, user-friendly products in cooperation with regional companies. They also participate in regional efforts to increase productivity and to strengthen the branches and centers of expertise.* For user-friendly development work the universities provide *new knowledge, applications, and operating models* generated in the fields of education and in development projects. Especially the universities' own product development labs provide *a development and testing platform* for ideas. Cooperation will also be increased through joint projects between the region's universities, companies, end-users, and other actors in accordance with the research and service strategies of the product development labs. The universities bring order, control, and ideological critique to cooperation and ideating. This promotes dialogue between actors and development of new ideas.

At the subregional level, the universities of Lapland construct *development concepts* that promote subregional and municipal development. For subregion-based development concepts the universities of Lapland provide *education* (open education, vocational further education, and targeted education), *research* (applied research, theses, and commissioned research), *project expertise* (project planning, administration, and management), application support for funding, and international partners of project cooperation. Regional development is supported through strong service cooperation and coordination (Provincial University of Lapland).

Customer-friendly innovation services

Small and medium-sized companies innovate through interaction with research institutes and other companies.[7]

The universities of Lapland build up regional expertise and entrepreneurship by reacting to the development needs of companies in the region. The universities provide *user-friendly innovation services* that can be ordered by regional actors for individual development needs. The universities also provide services designed for business cooperation. These include *targeted education, research services, product development support, product testing, marketing and business support, and project planning and management services.* The supply of services and their delivery to the companies of the region require close cooperation between the delivery and entrepreneur organizations of the region. Cooperation with the Enterprise Finland service will also be increased, and it will be maintained through active exchange of information.

[6] Kostiainen 2007, 1.

[7] Asheim, Coenen, Svensson-Henning 2003, 6.

4 Targeting of innovation activities

The universities of Lapland build the contents of their innovation by directing their joint and individual research, development, and service activities at targets which are salient for the attractiveness and development of the province and which require extra research and development investments. Defining the targets of innovation creates a basis for innovation services and for the necessary partnerships to produce them. It also improves the manageability and effect of development projects, promotes interaction between actors, and provides contents to provincial and national discussions on the direction and choices of innovation.

Targeting the innovation activities makes it possible to increase regional influence and to form strong leading areas of research at the universities. Strong and recognized expertise creates both national and international prestige, which indirectly also reinforces the research expertise that functions as a basis for innovation-oriented R&D work.

The universities' innovation activities cover the needs and key development areas of the province. They also strengthen the present and future know-how of the universities. The programme is closely connected to provincial development work. This has been ensured by deriving the needs and targets from development documents concerning the province and the key sectors of business.

The development targets of the universities of Lapland are divided into the following four focus areas:

Lapland of experiences, culture, and tourism
Lapland of wellbeing
Lapland of natural resources
Lapland of industry

Developing the focus areas is supported by the universities' cross-cutting areas of expertise:

b***usiness and entrepreneurship expertise***
ICT expertise
educational expertise

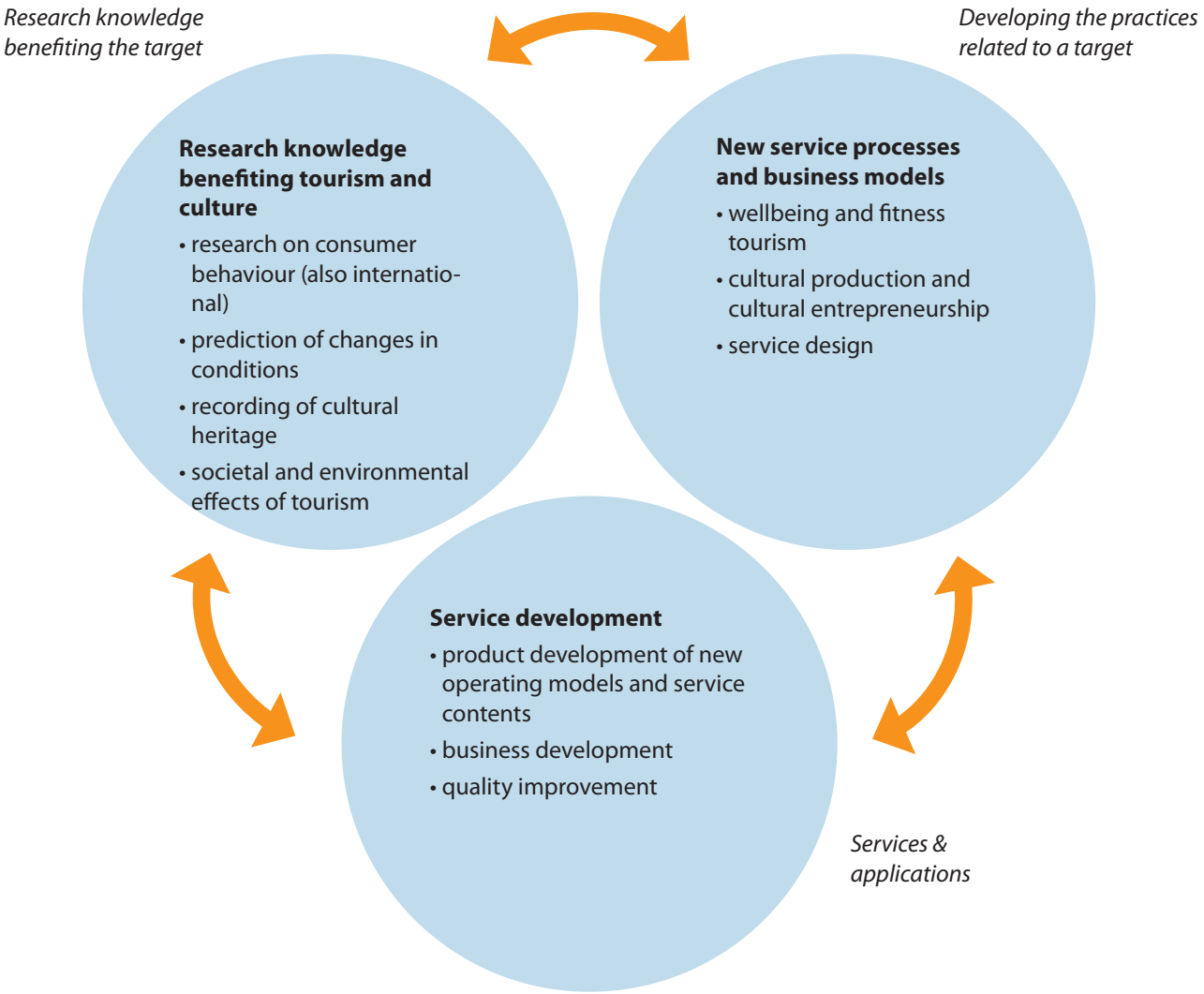
The innovation programme's focus areas are outlined as individual sections, but the possibilities offered by the focus area interfaces and the cross-cutting areas of expertise will be observed in the implementation phase.

The universities of Lapland support innovation by targeting their research and development activities as follows:

1) Lapland of experiences, culture, and tourism

Tourism develops fast in Lapland, and the prospects for growth are good. The goal is to increase the number of tourists, to promote international business, to enhance profitability, and to increase the demand for year-round tourism. Development work focusing on high-quality services, new partnerships, and profitable business follows the principles of ethically sustainable tourism. The creative sectors strengthen their foothold in Lapland and look for new markets in the fields of tourism, communications, and media. Access to our cultural heritage must therefore be secured for the future. The aim is that Lapland will increase the number of enterprises in the creative sectors and that it will have well-functioning cooperation networks for developing new lines of business. The development work focuses increasingly on ideas, and it supports sustainable target development within tourism.

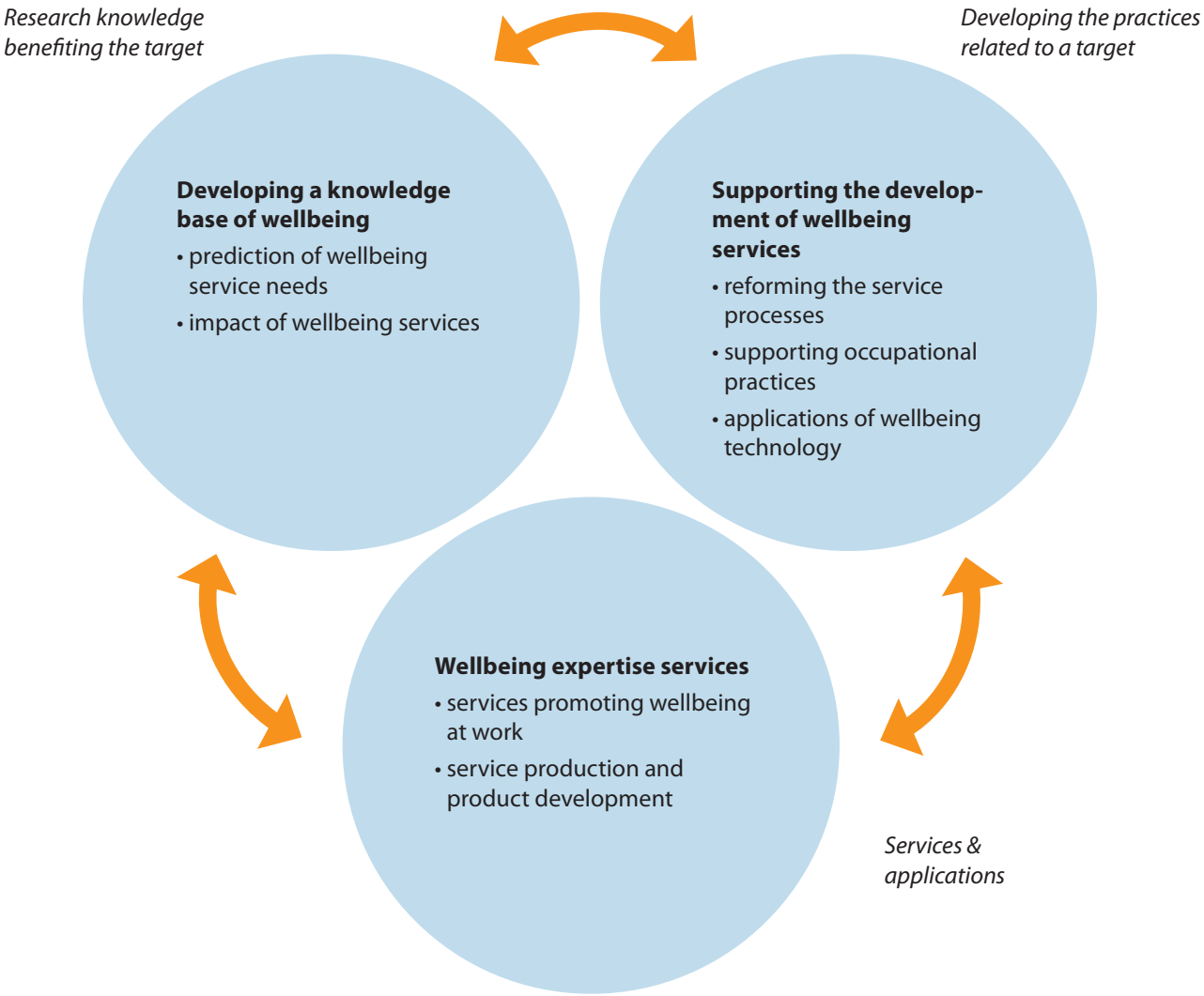
Lapland of experiences, culture, and tourism



2) Lapland of wellbeing

The service needs and welfare services of residents and tourists in Lapland are changing radically as the population gets older. The changing service needs call for actors to increase their cooperation and to reform their service structures and processes. New services and products are produced to maintain the capacity and wellbeing of people both inside and outside working life. Entrepreneurship in the wellbeing and fitness sector and the utilization of wellbeing technology are rapidly increasing.

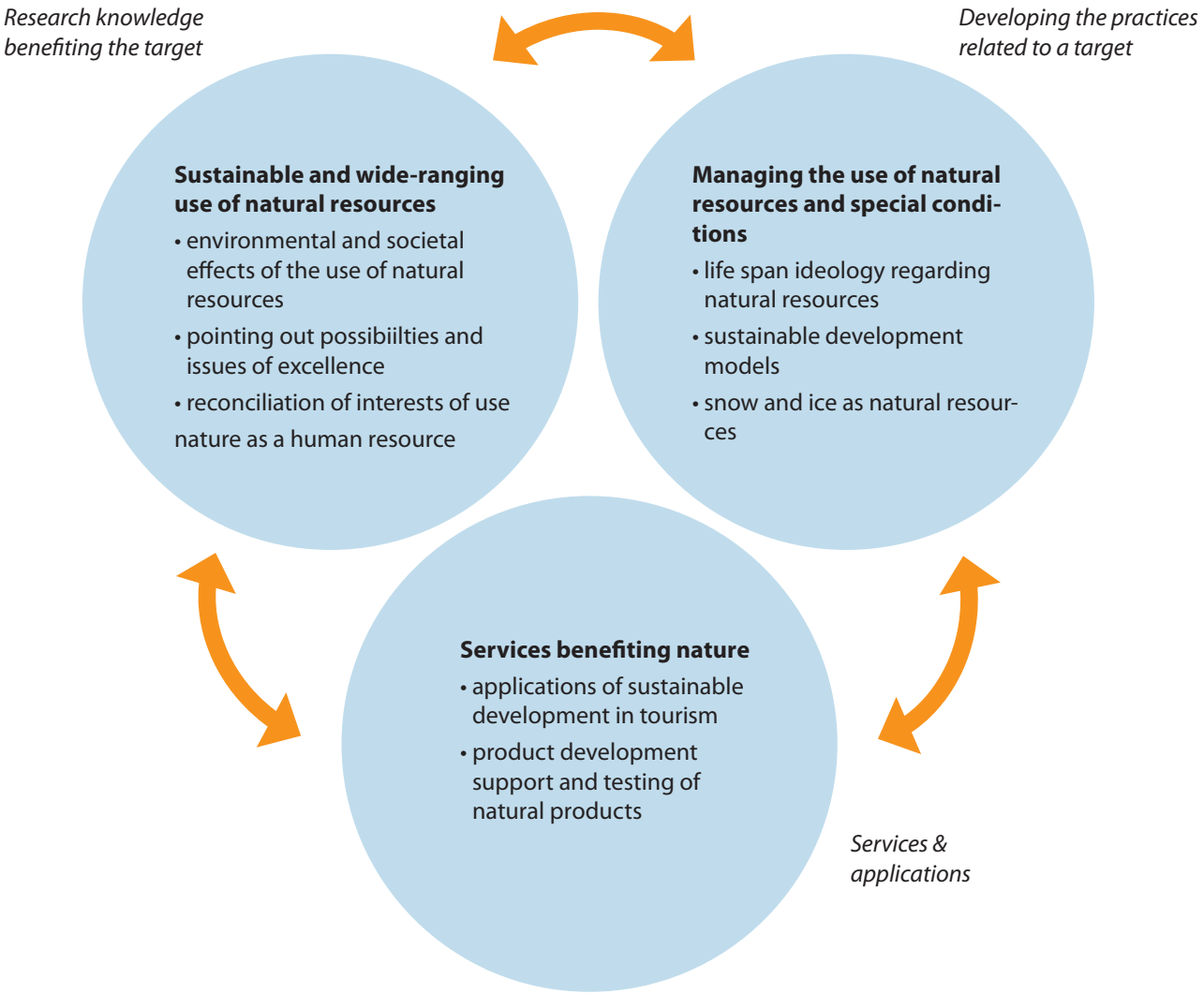
Lapland of Wellbeing



3) Lapland of natural resources

Lapland of the future will be known for its pure nature, forests, and natural products. To this end, natural resources must be used in a sustainable manner, and biodiversity must be secured. Nature's wellbeing is a precondition for good life and evolving tourism. The quality and image of the food industry also depend on the wellbeing of nature. Lapland's status as a designer and refiner of safe and tasty products will be emphasized further in the years to come. The aim is to keep product development and production in Lapland and to enter new enterprises and centres of expertise into the business.

Lapland of natural resources
(special features of nature, natural resources, natural products)



4) Lapland of Industry

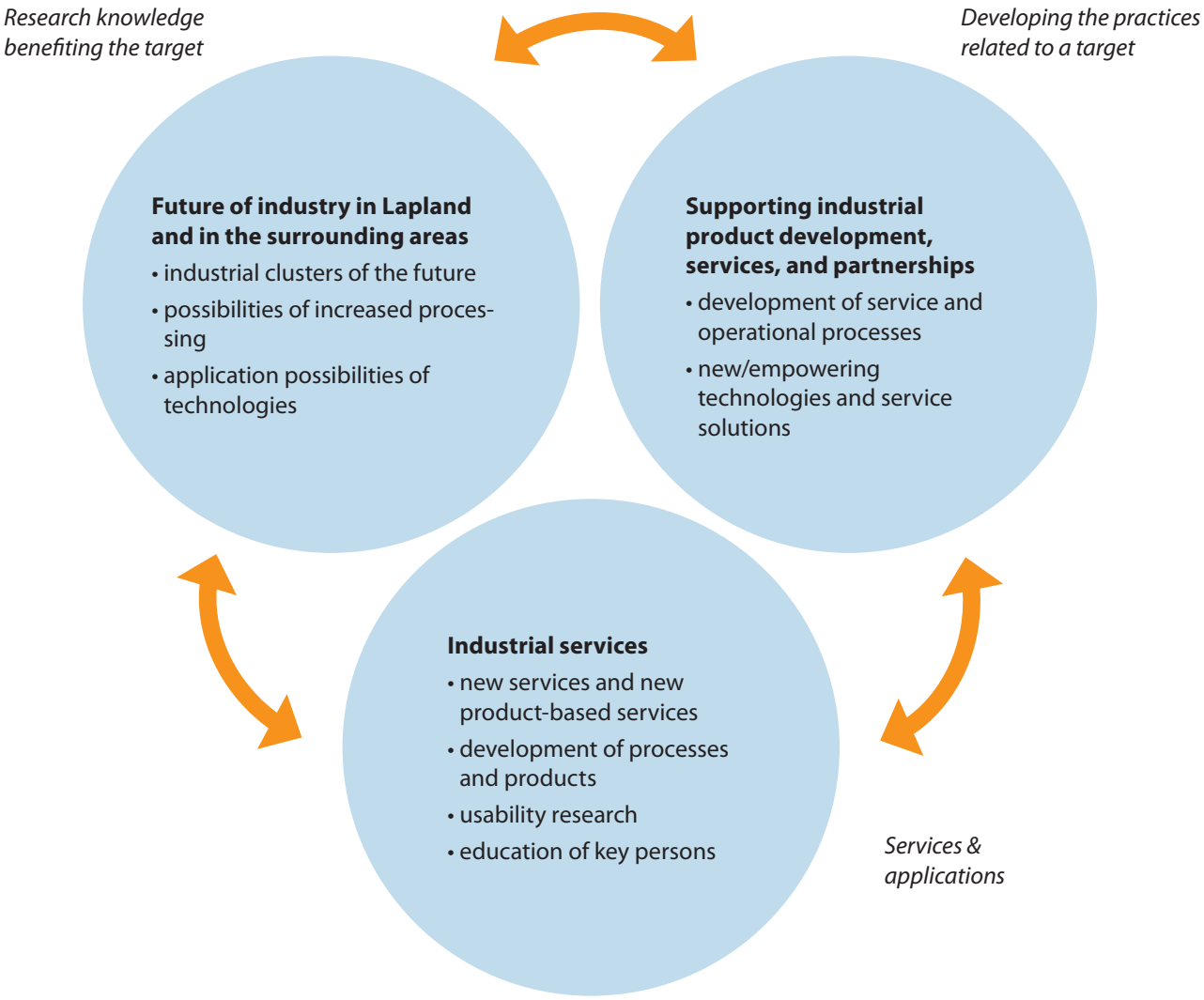
Industry is one of the cornerstones of Lapland's economy. To consolidate its industry, Lapland promotes production expertise and product development especially in medium-sized companies. Lapland has good possibilities to develop technology compatible with Northern conditions, to improve the utilization of natural resources, and to increase industrial subcontracting, services, and further processing.

5) Cross-cutting areas of expertise

To support substance expertise in developing their focus areas the universities of Lapland make use of the following strengths: *business and entrepreneurship expertise, ICT expertise, and educational expertise*. The strong presence of the cross-cutting areas of expertise in development is directed especially at medium-sized enterprises.

In developing the focal areas, these cross-cutting areas of expertise promote entrepreneurship, support business networking and development, increase business expertise, and create better environments and practices for companies in the region.

Lapland of Industry



5 Implementation of the programme

The implementation of the innovation programme of the universities of Lapland is ensured by taking the following measures:

5.1 Observing the programme in the steering systems of the universities

The universities include the principles of the programme in their strategies. The implementation is ensured by the strategy implementation plans of the universities and by internal target and profit management.

5.2 Implementation plan for the focus areas – creation and execution

The universities set up working groups to coordinate the creation and execution of an implementation plan regarding the focal areas as follows:

- Lapland of tourism, experiences, and culture (coordination by the Tourism Institute for the time being)
- Lapland of industry (coordination by Kemi-Tornio UAS)
- Lapland of natural resources (coordination by Rovaniemi UAS)
- Lapland of wellbeing (coordination by the University of Lapland)

The implementation plans must define the universities' joint project concepts that contain research, development, and service activities and the new creative solutions that ensure the implementation of the universities' joint innovation programme. The working groups must pay attention to the cross-cutting areas of expertise. The groups deliver their plans and report the progress of the implementation to the Executive Group of the consortium according to a schedule that will be defined later. Based on the implementation plans, the Executive Group outlines the university consortium's joint proposal to be included in the provincial core development plans (implementation plan of the regional strategic programme, regional cooperation document).

The working groups are appointed for the time being. The groups update the implementation plans annually.

The work is supported by the resources of the Lapland University Consortium project.

5.3 Research to advance knowledge transfer

To support the implementation of the programme, an assessment and research project on expertise and knowledge transfer models will be established. The project looks for operating models to promote the transferability of research knowledge to the region's companies and to public sector development. The project is in charge of documenting and analyzing the knowledge transfer models created by projects executing the innovation programme.

5.4 Innovation regulations

To support the usability of the research and development results, the universities of Lapland have drawn up invention regulations that ensure appropriate application of the act on university inventions in R&D work. The invention regulations concern the announcement system designed for the patent-protected results of inventive R&D activity.

The universities of Lapland will supplement their innovation programme and their R&D regulations by outlining the economic principles of incorporeal rights, expertise-based business, and utilizing the results of R&D work. Detailed policy principles are part of the process of utilizing the results of R&D work. They also belong to the personnel policies and public relations of the universities.

6 Programme assessment

The innovation programme is assessed from the viewpoints of process and effects. The functions of the programme are examined and assessed throughout the process, and attention is paid to the selection and accuracy of the programme's starting points, to the validity of the operating modes, and to the regional impact of the chosen contents. The assessment is a continuous service process. Throughout the programme, it focuses on how the chosen practices have succeeded and what functions will be developed further in order to realize the objectives of the programme.

The effects of the innovation programme are assessed on short and long timescales. The functions of the programme are examined and their effects assessed. The programme's products, such as projects, trainings, and research work, are assessed. The assessment also concerns achieved results, such as new products, publications, and operating models. At the general level, the assessment concerns the programme's effects on regional development, R&D activities, and regional expertise. These are examined for example through various statistics. To support the assessment of project effects there will be a common assessment frame that utilizes the joint project management system of the universities of Lapland.

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