



The Regional Strategy of Southwest Finland 2040+

Southwest Finland of Sustainable Partnerships



Regional Council of
Southwest Finland

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Introduction

Here in Southwest Finland, we are building a region of sustainable partnerships. We are an international region with a diverse economic structure, a fertile, rural landscape, and a unique environment, located by the Archipelago Sea. Our strengths lie in the technological competence, the broad and high-quality education, the exceptionally beautiful nature, the diverse population, and the long history.

Southwest Finland has approximately 485 000 inhabitants. The largest city in the region is Turku with 187 000 inhabitants. Our focus areas are the blue economy, especially the maritime industry, along with the food chains and the Life Science and health technology. Other important sectors for us are automotive industry, tourism, and culture, among others.

Southwest Finland:

- is located by the world's largest archipelago in terms of the number of islands,
- has reduced climate emissions faster than the rest of Finland,
- is at the forefront of bioimaging in Europe,
- is the home region of Finland's most automated and largest factory in terms of the number of employees (Valmet Automotive Oy),
- builds the most energy effective cruise ships in the world (Meyer Turku Oy),
- produces the majority of agricultural and fishery products in Finland and is the number one region of food production,
- produces the largest proportion of Finland's wheat and has the strongest expertise in open field production,
- has the second largest concentration of artists and culture professionals in Finland, and
- is the number one choice of summer cottage owners with the largest number of summer cottages in Finland.

This document contains a short summary of the Regional Strategy of Southwest Finland 2040+ and the Regional Programme 2022–2025, along with the Smart Specialisation Strategy of Southwest Finland 2021–2027 in its entirety. On our website, you can take a closer look at the Regional Strategy in Finnish and in Swedish.

[The Regional Strategy of Southwest Finland 2040+ in Finnish](#)

[The Regional Strategy of Southwest Finland 2040+ in Swedish](#)



The Southwest Finland of Tomorrow is a Prosperous, Growth-Oriented Producer of Knowledge-Based Clean Solutions

In accordance with the Regional Strategy of Southwest Finland 2040+ we work to be a region that is prosperous, growth-oriented producer of knowledge-based clean solutions.

Our vision is that in the year 2040 Southwest Finland is **carbon neutral and leads the way in clean solutions, innovations, and sustainable growth**. We offer solutions that support the European and global green transition. Our reliable and high-quality cooperation networks are good platforms for the creation of innovations. We develop our food chain continuously towards the most environmentally sustainable and climate-resilient solutions in the Baltic Sea region. The mobility in Southwest Finland is sustainable and effortless, and our everyday life is multilocal according to our own choices.

We are **a collective region that offers opportunities for wellbeing for everyone**. We are committed to reducing social exclusion and loneliness. Our open atmosphere in our society strengthens the security. The foundation of well-being in our multicultural society with strong community spirit is inclusion, art, culture, and environment, and the well-being is the foundation of vitality. In Southwest Finland, everyone can participate in education and working life according to their abilities, equally. These factors attract people and companies to our region and encourage them to stay here permanently.

We are **a region of cooperation and knowledge-based decisions**. We recognise the importance of cooperation, and, in the longer term, we create interactively equal opportunities for everyone to participate in the different entities and phases in the development of the region. In addition to extensive cooperation, the preparation is based on knowledge which is well-researched and well-founded: peer-reviewed research data, expert knowledge, or experiential knowledge complementary to the former.

In the year 2040, Southwest Finland will be **a foreseeing and growth-oriented digital region**: an internationally known community of actors in science, culture, and entrepreneurship, where a coherent and multisectoral network encourages to invest and create a sustainable and innovative society. Southwest Finland is at the forefront of equal digitalisation and competence along with labour immigration, which is sustainably growing faster than average. The growth in the region is primarily based on competence, diverse economic structure, innovations, and successful utilisation of digitalisation. In this way we attract new investments and activities.

In the year 2040, Southwest Finland is a balanced combination of urban city culture, a traditional rural village milieu, a unique archipelago, and a cherished natural environment. The foundation of the regional structure is ecologic, social, cultural, and economic sustainability: combining equality, high quality of life, and being in touch with nature.

Partnership work realises visions

In Southwest Finland, partnerships are a characteristic feature of the way we work. Our work is driven by the following values: responsibility, accessibility, reliability, and curiosity. In a broad sense, a partnership is a way of thinking and a mindset, but also a structure in the regional development, which supports our cooperation in a concrete way.

The Partnership Forum of Southwest Finland is a combination of several thematic networks which support the experts of the region in achieving common goals, as well as in creating and learning. The task of the networks is to secure the implementation of the measures set out in the Regional Programme of Southwest Finland 2022–2025, which deepens the visions of the Regional Strategy.

The measures of the programme period that support the environmental and sustainability objectives strengthen the competitive potential and innovation capability of the region, develop the most sustainable and climate resilient agriculture in the Baltic Sea region, equally develop the cities and the countryside, and build smooth solutions for mobility.

As the measures supporting well-being and inclusion in the coming years, we recognise and implement the potential in all population groups, maintain an accessible service network, maintain advanced and diverse expertise and educational opportunities, as well as reinforce our understanding about the significance of nature, culture, and active lifestyle in the well-being of inhabitants.

The measures of collaboration focus on the expertise in network management, in the ability of the public sector to produce accessible and comprehensible information, and distribution and utilisation of open data.

During the years 2022–2025, the goal of the measures that strengthen the business objectives is to formulate a regional RDI road map, to build test platforms for new ideas, to reinforce the entrepreneur-friendly attitude in the region, to invest on international cooperation and visibility, to promote sustainable tourism, and introduce a location-independent culture of recruitment. We ensure that the economic growth takes the biodiversity into account, is in touch with the nature and acknowledges its values.

Through our work with the Regional Programme and our partnership networks it is easy for the national and international actors within and outside the region to reach our experts regarding information transfer, peer learning and project cooperation! [You can find more information on our website.](#)



We create new – The Smart Specialisation Strategy of Southwest Finland

The Smart Specialisation Strategy deepens and complements the objectives and the measures defined in the Regional Strategy and the Regional Programme. The strategy focuses specifically on the strong businesses and industries of the region, which have diverse innovation activities and significant potential to be growth paths in the future.

The Smart Specialisation Strategy of Southwest Finland 2021–2027 is connected to the visions of the Regional Strategy. These visions aim at clean solutions and innovations along with growth and digitalisation. In terms of values, the strategy work emphasises curiosity and responsibility, with which we build an atmosphere that has room for creativity, but also obliges to secure a better future. The tasks concerning the priorities recognised in the Smart Specialisation Strategy deepen the measures of the Regional Programme.

The Regional Strategy for Research and Innovation

Smart Specialisation Strategy S3 is a tool which is based on the politics model and the cohesion politics of European Union. The purpose of the tool is to help the regions to recognise the strong sectors of the future and build cooperation on multiple levels, along with continuous discussion which includes the public and private sectors, and the research and civil societies. The starting point of the cooperation is economic growth, inventions, and innovations, and also efforts towards interregional cooperation which creates European value chains. The development of the strategy is governed by the law on regional development and implementation of the regional and structural policy in European Union.

The strategies for the smart specialisation assess 1) the challenges in the research, development, and innovation activity (RDI) (for example the challenges in converting research and competence into innovations, along with the challenges that are connected with the different actors and the utilisation of digitalisation), 2) the industries in the region that are challenged by the technological change, globalisation, and the shift towards a low-carbon economy, 3) the possibilities in the cooperation between research and innovation actors and companies, and 4) the promotion of low-carbon approaches, gender equality and digitalisation.

During the preparation process of the Regional Strategy of Southwest Finland, there were indications that the European S3 is about to develop into S4, Smart Specialisation Strategies for Sustainability. This change is connected to the post-pandemic economic recovery, the European green transition, and to the need to take action and build even more sustainable solutions in close cooperation also with the civil society.

The strong sectors, i.e. the priorities, recognised in the Smart Specialisation Strategy of Southwest Finland are blue economy and renewable industry, innovative food chains, and Life Science and health technology. The priorities have been defined in cooperation with the experts of the region, and the related collaboration continues on several fronts, also in specific partnership groups for smart specialisation. The preparation and execution are open for the participation of business sector, research and educational organisations, the public sector, and the civil society. In the implementation, a specific EDP-model (Entrepreneurial Discovery Process) will be utilised, which is developed for this purpose and will encourage the dialog between participants.

The realisation of all the priorities of the smart specialisation is guided by EU's programme for green transition and the European Data Strategy, and, depending on the priority, for example:

- EU communication on promoting sustainable blue economy
- EU's Common Agricultural Policy CAP27 and its national and regional programmes
- EU's Farm to Fork Strategy
- The European Health Data Space (one of the political priorities of the European Commission)
- EU theme of Personalised Health
- The national growth strategy for research and innovation in the health sector.

In addition, the priorities of the Smart Specialisation Strategy of Southwest Finland are in line with the innovation ecosystem agreement between the region of Turku and the State, drafted for the years 2021–2027. The strategy also supports the realisation of the goals of the national RDI Road Map: boosting the cooperation between companies and research organisations and creating a new start. To support the internationalisation of the sectors, Team Finland services will also be used.

In the same way as the whole Regional Strategy, also the sector choices and the measures of the smart specialisation affect the emphasis of the financing decisions made by the officials. The period 2021–2027, which deviates from the Regional Programme, is based on the EU financing period.

Smart specialisation supports, in particular, the development of the identified focus areas but also, more broadly, the research and innovation abilities in Southwest Finland. For example, a versatile implementation of advanced technologies and digitalisation, and improvement of growth and competitiveness of the small and medium-sized enterprises. Additionally, Finland's goals of carbon neutrality will be furthered, especially from the perspectives of energy efficiency, climate change adaptation, and transition towards a circular economy. The planned progress of these also support the success of the focus areas of the region.

The effectiveness of the implementation of the Smart Specialisation Strategy will be monitored as part of the follow-up of the Regional Strategy, for example by following the development of RDI-activities and livelihoods, and the effectiveness of project activities.

Blue Economy and Renewable Industry

In May 2021, the European Commission published a communication on promoting sustainable blue economy in the European Union. In the communication, a detailed action programme for the blue economy is presented. The sustainable blue economy is part of a wider programme of green development in EU, essential for the future of Europe. A prerequisite for the sustainable blue economy is that the state of the oceans and seas is good. In the Commission's communication, the central sectors of the blue economy are maritime industry, maritime transport, port operations, fishing, aquaculture, and coastal tourism. Fishing and aquaculture, which are important to Southwest Finland, have been acknowledged as part of innovative food chains at the forefront of smart specialisation.

In Southwest Finland, the economic driver of the blue economy is the maritime industry (shipbuilding), with the help of a subcontracting and education network with extensive connections. A broad knowledge in planning creates a foundation for green concepts for ships and sustainable operating also in the future. The maritime industry in Southwest Finland employs 8000 persons in 400 enterprises, thus covering approximately 27 per cent of all jobs in maritime industry in Finland. 30 per cent of the enterprises operating in the sector are located in Southwest Finland and their share of the total turnover of the sector is 28 per cent. There are currently four higher education institutions and universities operating in Turku that provide education for future professionals in the industry.

The global market challenges in the future demand continuous renewal and new voyages of exploration to research and business. Along with the strong shipbuilding industry there is long-standing knowledge in the areas of offshore and arctic technology, as well as in building of autonomous systems. In a wider perspective, Turku is a leading concentration of technology industry, which combines artificial intelligence, robotics, and automation in an unprecedented way.

Research, Development, and Innovation Activities, and Competence Development

Technology Campus Turku is an ecosystem that collaborates with a wide range of stakeholders. The regional network is founded by the City of Turku, the coordinator Turku Science Park Oy, the University of Turku, Åbo Akademi University, Turku University of Applied Sciences and Novia University of Applied Sciences. The main tasks of the ecosystem are to combine the research and education infrastructures of engineering, to increase the educational cooperation, to create and sustain a shared research strategy in engineering, and to increase the attractiveness of and collaboration in engineering in the region. A critical success factor is building a functional and living cooperation with the companies in the region.



The higher education institutions in Turku produce Doctors of Engineering, Masters of Science in Engineering, Bachelors of Engineering, engineers, and professionals in shipping to fulfil the growing demand in the region. In Turku, the selection of higher education institutions focusing on technology are still lacking some of the major branches in the educations of both Master of Science in Engineering and engineers. There is a need of new education licences in electro- and automation technology, and in structural architecture, among others. One real challenge, and an object of supervision of interests over the next few years, is to further strengthen the coverage of education licences in accordance with the strong areas of the economic structure and the production in the region.

As a part of the Technology Campus Turku, the project STEAM Turku is creating a new approach on education to strengthen the attractiveness of natural sciences and technology. STEAM is building a pathway of science and technology that connects the early childhood education and care, the basic education, and the general upper secondary education, and offers routes to further education and Technology Campus Turku. The STEAM cooperation covers not only the Turku area, but the whole of Southwest Finland.

The development of competence should continue to cover the whole pathway of education. To open and to make the study paths more flexible is important considering the educational entity of technology in the region. Turku and Southwest Finland have all the possibilities to become one of the leading regions in the education and research of technology and engineering in Finland. To reach this, we need to gather and channel various resources to promote this common goal.

Innovations and International Networks of Companies

The maritime industry in Southwest Finland has developed into a versatile and active network. Among the actors there are several enterprises for whom the maritime industry represents only a proportion of the total business. In Southwest Finland, the maritime industry and even the smallest of enterprises must be able to compete globally. The network of the maritime industry reaches several areas in Finland and the states around the Baltic Sea. In the changing global situation, this network needs new initiatives for activities and development of structures that enable new innovation efforts.

In the concept of SmartBlueIndustry, the focus is on developing four streams (data, material, finance, and people) into a more digital and efficient direction. The purpose of the Blue Industry Park, next to Meyer Turku shipyard, is to become an area for the maritime industry which will support the global competitiveness of the subcontracting network connected to cruise ship building. The activities of the companies in the maritime industry will also be supported with different accelerator programmes.

The goal in supporting the companies' innovations is to continuously enhance the national and international competitiveness. Companies are encouraged to use more national and international financing instruments for innovation and thus adding their innovation capacity in a concrete way. In particular, emphasis is given to increasing the turnover from sustainable business in the area.

The cooperation network aims to boost the competitiveness of the European maritime industry and to highlight the role of the maritime industry as a significant strategic sector. The prioritised areas in the contents and direction of the cooperation include, along with production activities, also education, research and development activities, as well as the significance of the maritime industry for the economic structure of the region. A good example of international networking is the Fraunhofer cooperation, in which Turku is the pioneer and paving the way for an innovation system in the whole of Finland. The applied research and product development of the Finnish maritime cluster and the cooperation with the industry will become stronger when the research unit of intelligent shipping starts to operate in Turku.

To develop the competitiveness of technology industry in Southwest Finland it is necessary to also join the regional and national knowledge networks and operate in them more effectively. In Turku, a long-standing cooperation is being built between the city regions, the subregions in the Southwest Finland, and the universities of technology located elsewhere in Finland.

Clean and Resource-Wise Solutions

Creating a carbon neutral maritime cluster that follows the principles of circular economy will boost employment and competitiveness. There is also a global demand for the know-how and technological solutions, and it will grow in the coming years due to stricter regulations.

The circular economy and resource-wise solutions in the region are being developed through regional cooperation. Among the growing trends are the development projects related to the use of hydrogen. The goal of the cooperation between the actors in the region is to create company-driven ecosystems and clusters, where new innovative solutions will be tested and developed by using the cities as experimental platforms. The ecosystems are business-driven entrepreneurial ecosystems. In the region, there is also an innovation platform for bio and circular economy called Smart Chemistry Park, which operates in a close and cross-cutting cooperation with several entrepreneurial ecosystems.

In addition to that, Southwest Finland functions as the driving force for the mobility ecosystem, which is being created in Finland, with electrification in the focus. Within the region, the actors of Salo IoT Campus have a prominent role. This ecosystem supports the traffic and the society in the efforts to diminish the use of fossil raw materials with the help of electrification, simultaneously supporting the goals of climate change mitigation. The aim is to bring together the operators involved in battery technology and support the creation of new battery solutions and innovations in electric mobility. At the same time, the international recognition and the national cooperation of the battery ecosystem will be boosted. The renewal of industry combined with the electric mobility will strengthen the prospects of automotive industry.

Tasks

With regard to the blue economy and the renewable industry, the following measures, among others, are essential in the future. These tasks specify the measures outlined in the Regional Programme.

- Making Technology Campus Turku into a strong and large cluster of technological know-how, which will boost the competitiveness of Southwest Finland and the development of local enterprises.
- Increasing international visibility, partnerships, and project cooperation by joining at least one of the Smart Specialisation Platforms of European Union.
- Collaborating multilaterally in promoting interests in European maritime organisations and associations, as well as bilaterally in European network cooperation between the strong sea areas.
- Supporting the cooperation between the top companies in the blue economy and the small international growth enterprises, and their networking with higher education institutions.
- Utilising the new financing opportunities offered by EU to realise the objectives that emerge from the strengths of the region.
- Strengthening proactive thinking and working practices, for example, by using the environment and methods of the Foresight Academy.

The promotion of the measures is coordinated by Technology Campus Turku, Turku Science Park, an expert group of the maritime sector, and the Regional Council of Southwest Finland.

Innovative Food Chains

In Southwest Finland, the food chain has a significant role in the regional economy. It employs over 16 000 persons. Over 20 per cent of the establishments in the region are part of the economic food chain and make 15 per cent of the turnover in the region. Southwest Finland is at the forefront of sustainable development in food in our country. In the region, there is diverse farming of bread cereals and specialised crops such as spelt, hemp, quinoa, and broad beans. Southwest Finland is therefore in the vanguard of the production and improvement of these domestic protein-rich plants. There is also specialised production of fruits, berries, and early and garden vegetables in the region.

In the development of food chains, the top sectors of Southwest Finland are the food products and the food product know-how in blue and green bio economy; regional and diversified co-creation of food products and experiences, along with making use of digitalisation and technology in development of a sustainable food system.

In regard to innovative food chains, the challenges of the innovation cooperation lie in the thematic contents. To understand the changes in consumer behaviour and to react to them requires continuous information sharing and discussion between the developer organisations. Digitalisation and open data offer many possibilities for the sector, but they also require significant changes in the approaches, in the development of know-how and technologies, not to mention the required investments. Versatile testing of new solutions of sustainable development must be enabled in all parts of the chain.



In practice, the biggest challenge in the coordination and the long-term development of innovation work in Southwest Finland is the lack of basic funding, which often leads to the RDI and innovation activities to happen in projects with the help of external funding. This damages the stability and in every phase there would be different experts. Strengthening the resource allocation is a challenge that needs a joint solution in the region of Southwest Finland.

To support the implementation of the Smart Specialisation Strategy, a Food Developer Forum has been created, which brings together the developers in thematic groups, organised around different food themes. Involved in the Forum are, among others, the Functional Foods Forum and Brahea Centre of the University of Turku, Valonia, Natural Resources Institute Finland, Yrityssalo, the Archipelago Sea Fisheries Action Group, Turku Science Park, MTK Southwest Finland, and Southwest Finland Centre for Economic Development, Transport and the Environment. The work is supported by Turku-Southwest Finland EU-office and the Regional Council of Southwest Finland.

As part of the activities of the Food Developer Forum, the main actors of the food system in Southwest Finland have been recognised, the strengths of the region have been named, and thematic groups have been created accordingly. With the help of the thematic groups, the experts in the field are brought together, new connections are established with the international experts, and cooperation is developed along with new know-how in the area.

The thematic groups are:

- New crops
- Circular economy solutions
- Measurement & exploitation of data
- Short chains, platform economy, and new business models
- Fishing industry
- Food tourism & restaurants

The aim of the work is to enhance the competence of the chain in the chosen main themes with the help of international cooperation. This means new partnerships, new approaches, new cooperation projects, and new funding for the development of the food chain. The purpose is to enhance the competitiveness, profitability, and export capacities of the enterprises that are part of the food chain in Southwest Finland.

Food Products and Food Know-how in the Blue and Green Economy

The food from Southwest Finland is connected to both the blue and the green bioeconomy. The blue bioeconomy covers aquaculture and fisheries, as well as the resource efficient food produced with a closed loop system. The green bioeconomy includes the raw material for the food system, harvested from the fields and the forest in the region, and also the products manufactured from them. A large proportion of Finland's bread cereals, oil plants, protein crops, and early potatoes are farmed in Southwest Finland. The region is also a significant producer of pork and eggs. Many of the fishermen operating at sea and in inland waters and a third of Finland's fish production come from Southwest Finland. There is also diverse fish processing and fish feed industry, along with diverse expertise in the fisheries sector. The raw material produced in Southwest Finland, such as oat, Baltic herring, mushrooms, game, and plant-based protein sources like quinoa, peas, hemp, and broad beans create a chance for the people to take the sustainable development into account at their dinner tables. The natural products harvested from the forests and their utilisation and processing could create new business potential. There has developed an exceptional amount of new business activities around the production of new crops.

Southwest Finland has strong production of specialised crops: for example, production of berries, production in the open and in green houses, and also diverse further processing activities of berries, fruits, and vegetables. By developing these further and exploiting new solutions of circular economy, we will build internationally unique expertise and meet the goals of sustainable agriculture and promotion of healthy, regional food production set out in the European green development programme Green Deal.

Regional and Multisectoral Co-Creation of Food Products and Experiences

The cooperation between business, universities, education institutions, consumers, and the multisectoral group of experts in public administration have a long tradition in Southwest Finland. As a result, superior know-how on food and food chains has cumulated in the area. The Finnish nutraceuticals (xylitol chewing gum and Bene-col-products) approved by the European Food Safety Authority EFSA come from Southwest Finland and are also examples of the collaboration between companies and the University of Turku. The first regional road map for circular economy in the country was created in this region, and also a multidisciplinary research platform Flavoria® that focuses on food and sustainable development was opened here. Southwest Finland has also invested in the development of quality and transparency in food service sector and food tourism (Roadmap for Tourism in Southwest Finland 2.0). It is crucial to engage the consumers and the actors in food service in the planning and implementation of development paths that promote the sustainability of the food chain. Understanding the consumer's needs and choices is the key to a more sustainable food chain and to creation of new business models.

Utilisation of Digitalisation and Technology in the Development of Sustainable Food System

In the same way as other branches, the development of the food chain is strongly guided by digitalisation. It is seen in the production control in the farms, in the processing, the logistics, as well as in the wholesale and retail trade. At the same time, it enables the collection, the analysis, and the distribution of diverse data.

With the help of digitalisation, the consumers can get closer to the producer and see the whole history of the product they have bought, or in the restaurant, they can receive information about the food carbon footprint. Through digitalisation, the consumers can measure their own actions and make conscious choices. It creates new channels for the producers, the processors, and the trade to reach the customers.

Digitalisation also makes it possible to shorten the chains in the food system and to develop new consumer-driven approaches and business models. By distributing data, the enterprises are able to form ecosystems whose purpose is to enhance the strength of the chain through cooperation, to offer and enable more profitable business solutions, and also to improve openness towards the consumers.

The challenges in the full-scale exploitation of digitalisation at the moment are the range of different meters, the various bases of calculation, and communication to consumers. The work for the improvement of the meters must be continued. For the future competitiveness, it is important to be able to promote the cooperation between the research sector and the companies, and to build open innovation ecosystems where also the consumers have a role. The research platform Flavoria® coordinated by the University of Turku is the first example of this kind of ecosystem. It is unique in the way it combines the food service operators, the research, the technology companies, and the consumers.

Tasks

With regard to the innovative food chains, the following tasks, among others, are essential. These tasks specify the measures outlined in the Regional Programme.

- Promoting discussion, transfer of information, and creation of new partnerships between sectors by networking the actors of the food chain. Bringing together the experts of the region under the jointly recognised themes of special competence and improving the know-how in the region, in the fields of both research and business.
- Promoting the construction of new, applicable, and cross-cutting research and development projects.
- Enhancing international visibility, partnerships, and project cooperation through, for example, the ERIAFF network and by following cooperation possibilities in the partnerships of the S3-platforms.
- Recognising existing and potential value chains and compensatory strengths between regions.
- Reinforcing proactive thinking and practices, for example by using the environment and methods of the Foresight Academy.
- Promoting the construction of the operating model of the innovation platform Flavoria® as an agile testing platform that brings together the regional actors.

Life Science and Health Technology

In Finland, Southwest Finland has the strongest concentration of pharmaceutical research, health technology and, more broadly, Life Science, in which long-term cutting-edge research is combined with multi-faceted business operations and knowledge in commercialisation and internationalisation.

Over 75 per cent of Finnish pharmaceutical exports and approximately 50 per cent of diagnostics exports are produced by the companies in the Turku area. The excellence in the region is well illustrated by the fact that out of the 22 medicines developed and brought to market in Finland, 21 have been developed in the drug development companies in Turku. In Southwest Finland, there are over 100 health industry companies which represent circa 20 per cent of the turnover in industry within the region and employ 20 per cent of the region's industrial workforce. The direct employment effect of the industry is approximately 5700 industrial jobs.

The possibilities to develop the competitiveness of the Life Science and health technology sector and the co-operation within are significant in Southwest Finland, and the development work is ongoing. In particular, there is potential in the areas of green and digital development. The region has strong technological expertise, and regarding the green transition, a preparation for the development of circular economy within health care is already underway. In addition to that, a versatile use of infrastructures (including distance use) can intensify the activities and open new possibilities for growth for the region.

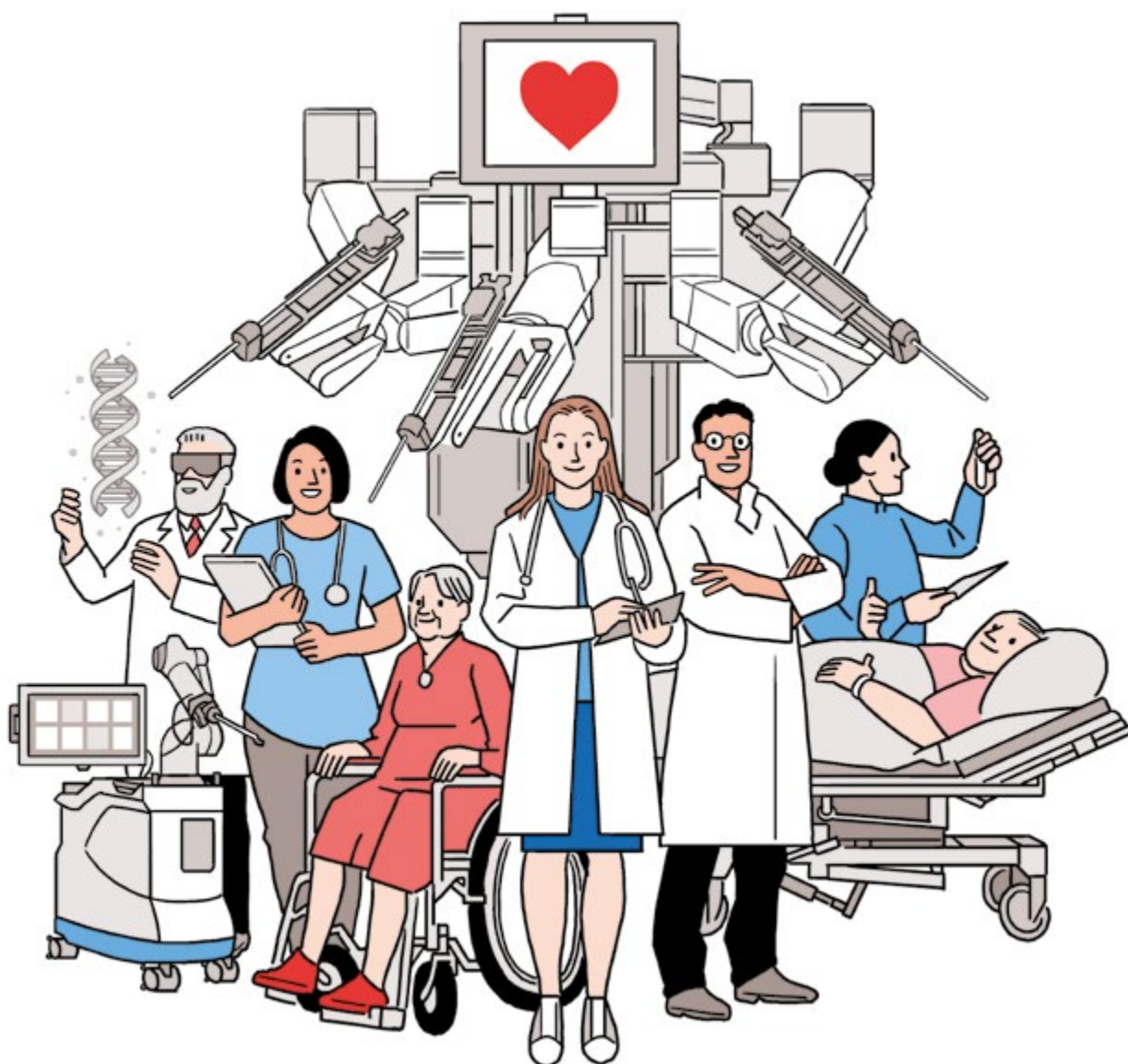
The challenges in the development of the Life Science and health technology sector are mostly connected to insufficient funding. The funding allocated on top research is limited in Finland and often insufficient when it comes to development work. Thus, the cooperation must be increasingly sought from other countries and cooperation projects, which, on the hand, consumes resources and can break the developmental work into projects.

The HealthTurku cluster, which has been created around the strong know-how in research and business operations in the region of Turku, serves extensively the business and development work done for health. The cornerstones of the cluster are diagnostics and drug development, in addition to which there is also strong competence particularly in the sectors of health technology, functional foods and material technology. Typically, the clients and end-users of the industry and research in the area are to be found in strongly regulated environments: in the international research and production industries, along with hospitals and other professional healthcare providers. As to the competence in regulation, the region of Turku is the leading area in Finland.

There are several cooperation groups operating within the region and alongside the HealthTurku cluster. One example of this is the work group established to support the implementation of the Smart Specialisation Strategy. Involved in the group are the higher education institutions of the region (the University of Turku, Åbo Akademi University, Turku University of Applied Sciences), the developer organisations (Turku Science Park, Yrityssalo), the Hospital District of Southwest Finland, and the partner organisations (e.g. Health Campus Turku), along with large projects (such as the InFLAMES Flagship). The work is supported by Turku-Southwest Finland EU-office and the Regional Council of Southwest Finland.

During the strategy period, the preparation for the Wellbeing Services Counties and a good dialog between the Wellbeing Services County and the Regional Strategy could bring added value to the development of the cooperation in Life Science and health technology in the region. The ability of the Wellbeing Services County to implement innovations affects the progress made in the whole region, and through its own RDI-activities it can boost the success of the area.

The focus of the cooperation in Life Science and health technology in Southwest Finland is on drug development and diagnostics, imaging, health technology and health data analytics along with production of company, test, and support services.



Drug Development and Diagnostics

For decades, the region of Turku has systematically invested in the development of versatile knowledge platforms in order to create a chain of various support functions for the growth of the drug development industry. Over a half of Finnish drug development and diagnostics industry is operating in the Turku area.

The excellence in drug development in Turku area is based on the long-term development work, which has been ground-breaking in Finland. The most important export product of Finnish pharmaceutical industry today is the hormone coil developed by Leiras in Turku, and it is also the sixth best-selling product of the global Bayer, which subsequently bought Leiras. Today, Bayer rightly calls Turku the world's contraceptive capital. Wallac Oy, which started as a producer of measuring devices, directed its activities quickly to the production of equipment needed in the hospital world. Wallac is currently part of PerkinElmer and the world leader in newborn screening of genetic diseases.

In addition to the large companies such as Bayer, Orion, and PerkinElmer, there are dozens of smaller drug development and diagnostics enterprises and service producers in the Life Science sector. The diagnostics companies in the area are global market leaders in newborn genetic screening and in the production of cardiac markers.

Drug development and diagnostics are a joint research priority of the University of Turku and Åbo Akademi University.

The cooperation also brings substantial investments to the area. The production expertise is strong, and it has led to significant investments in the development of production. These are currently being prepared by Bayer, Orion, and Radiometer, among others. Also, in the research sector there are large-scale projects being prepared for the development of production.

Through cooperation in smart specialisation, we want to build an environment for co-creation, in which the researchers from the higher education institutions and the companies can together develop new research strategies and technologies and use the unique research infrastructure of the area. These activities are supported by the InFLAMES Flagship (Innovation Ecosystem based on the Immune System) which is a joint effort of the University of Turku and Åbo Akademi University. The flagship aims to form an internationally recognised, top-level immunological research and development cluster that is globally attractive for both the researchers and the business partners. Along with numerous companies, the key actors in drug development and diagnostics in Southwest Finland are Auria Biobank, the research infrastructure for biological and medical imaging Euro-Biolmaging ERIC, Turku Bioscience Centre, Turku Center for Disease Modeling, Turku PET Centre, Western Finland Cancer Centre FICAN West, and the clinical patient studies in Turku University Hospital, among others.

Imaging

Turku is the bioimaging capital of Finland and a significant and recognised actor in the sector also on a European scale. The imaging has a central position, for example, in the modern cancer and virus research.

With the help of bioimaging, the researchers are able to study, inter alia, the details in cells and tissues by using world-leading, advanced optical laser technology. The national PET Centre located in Turku has the largest selection of radioisotopes in Finland, making also the isotope imaging very diverse. In addition to the versatile production of isotopes, the selection of PET-markers maintained by the PET Centre is globally significant and used not only in diagnostics and basic research, but also in international, commercial clinical trials.

The headquarters of the most important European organisation in imaging, Euro-Biolmaging ERIC, is located in Turku, and the Finnish Euro-Biolmaging service network is led from here as well. Six universities and three university hospitals that are among the most prominent in Europe, are involved in the cooperation. Furthermore, the infrastructure and the research and service development of imaging are at the international forefront, and expertise and significance are growing also in the data sector, as well as in the distance use of imaging services.

Health Technology and Health Data Analytics

Health technology and Life Science solutions are crucially linked together. Innovations in both of the sectors save lives and enhance the quality of life for many people. In Southwest Finland, the partnership of these two disciplines has created a remarkably successful branch of medical technology, which mainly focuses on professional solutions. The core of the work is a professional view on health care and healthcare-related services instead of consumer-driven products.

The expertise in health technology in the area is diverse, but there is particular interest in cooperation initiatives that are related to synthetic health data as part of the development of artificial intelligence solutions. Among others, the PRIVASA project led by the University of Turku functions as a tool and "a collector of expertise" within the above-mentioned themes. The project develops artificial intelligence methods for the secure utilisation of sensitive material in health sector. In the project, Turku University of Applied Sciences develops synthesising of imaging data, hence contributing to the strengthening of the competence related to imaging. Several actors from the area are involved in the project, and the aim is to boost the product development of the companies operating in the international market, by producing anonym health data at an individual level for the needs of the companies' development and innovation activities. At the moment, Finnish companies cannot effectively utilise the registered data.

Health data analytics that is based on technology, data storage, and mathematical modelling combines the technological and medicinal understanding and is able to make reliable conclusions about health even when the data are inadequate. Health data analytics is all about joint cooperation of clinical experts or researchers, data engineers, mathematicians and other professionals. Social and healthcare data are the key to the promotion of the individual's health, as well as to the development of the health service system and the health and medical technology.

There is a need for health tech-related development in the introduction of new technologies among the citizens, especially among the elderly. There are many possibilities within this theme, which for their own part support naturally the participation of the civil society and the influencing in innovation politics.

In Southwest Finland, there is particular strength in the development of health technology solutions in the following fields: artificial intelligence, natural language, robotics and the Internet of Things, technologies and applications for diagnostics, along with additive manufacturing and biomaterials.

Production of Company, Test, and Support Services

In the region of Turku, there is a large and multifaceted support network that support innovations, research, medicinal technology, pharmaceutical industry, and global cooperation. The HealthTurku cluster, which has been created around the strong research expertise and business in health, is building an ecosystem that offers diverse services and support to start-ups, local enterprises, and in international cooperation models. Health Campus Turku, on the other hand, is the multi-professional cluster of competence in the fields of medicine, health and social sector, and technology, which offers unique possibilities for research, innovations, and business cooperation.

The product development and innovations in the health sector in Southwest Finland are promoted especially by TERTTU, a research, development, and test service. This service by Health Campus Turku combines the different test platform services of health sector and offers a possibility for co-creation with the health professionals in the branches of health technology, food, diagnostics, drug and equipment development or service development.

Tasks

With regard to the Life Science and health technology cooperation, the following tasks, among others, are essential. These tasks specify the measures outlined in the Regional Programme.

- Reinforcing of the discussion, situational picture, and EDP-process between sectors in the context of HealthTurku cooperation.
- Further strengthening the recognition and the cooperation in the promotion of interests within HealthTurku services, operators in the sector, innovations, and new clusters of actors through improvement of joint visibility. Allocating regional aid to new start-up companies.
- Enhancing operational capabilities, i.e. the maturity of the test platform activities, and maintaining the leadership in the development of synthetic health data.
- Improving data competence and the use of it in the health sector. Participating in projects that create European principles for the utilisation of health and wellbeing data.
- Developing secondary utilisation of social and health information and putting effort into bilateral cooperation in data-intensive research and development in accordance with the national goals.
- Supporting the significant cooperation platforms and networks in the region, for example the headquarters of the ERIC Euro BioImaging network.
- Getting new cooperation platforms to the area, such as the national Drug Development Centre and the European Digital Innovation Hub (EDIH).
- Promoting international visibility, partnerships, and project cooperation on S3-platforms and other relevant networks, as well as recognising existing and potential value chains between regions.
- Reinforcing proactive thinking and practices, for example by using the environment and methods of the Southwest Finland Foresight Academy.

