



Water as a smart specialisation priority in Pohjois-Savo

In Pohjois-Savo, seven areas of smart specialisation have been identified where the region has strong international know-how and business activities and, through the advancement of technological solutions and expertise, the vitality and competitive edge of the economy can be ensured. These areas are machine and energy technology, wood processing, the food industry, well-being technology, tourism and, spanning across the others, water and biorefinery.

The concept of smart specialisation was adopted in Pohjois-Savo in 2009–2010 while drafting the regional development plan. Interacting with local businesses and organisations has been a central and efficient method in mapping out places for development and regional core competencies. Focusing R&D on the priority areas of smart specialisation has proved to be a successful practice.

A hub of water expertise at Kuopio Science Park

Facing the global challenges related to water requires broad cooperation and sufficient resources. Water treatment processes, digital technology and risk management are examples of rising industries. Pohjois-Savo wants to strengthen them to promote a more sustainable use of water resources, diversified professional activities and the internationalisation of the Finnish water industry.

There is a diverse and multidisciplinary hub of water expertise in Kuopio that is formed by several companies and public organisations: University of Eastern Finland, Savonia University of Applied Sciences, Geological Survey of Finland, National Institute for Health and Welfare, and Natural Resources Institute Finland. Their strengths are water microbiology, water chemistry, groundwater and mining water expertise, water purification and monitoring technologies as well as expertise in the field of agricultural impacts on water. The water industry in Kuopio has particular expertise related to the mineral industry, including the research of risks to the environment and bodies of water that the mining and refinery of minerals have, as well as to the dissolution of minerals into natural water reservoirs. Product innovation in the water industry focuses on risk management, the development of commercially ready treatment methods, smart water technologies, environmental safety and mitigation of health impacts.

The core areas of application are mining, industrial and agricultural water processes. Production methods are developed for monitoring and optimising of water purification processes. In addition, latest digital services are developed for remote control and monitoring activities as well as for achieving real-time operations. A special strength for the water hub - based on a long-standing expertise - is the ability to carry out challenging test runs on a pilot scale, and testing related to product

development directly in industrial sites specified by the customers. There have also been pilot projects carried out in cooperation with international partners.

Funding by the European Structural Fund has made it possible to develop a long-term ecosystem of water industry R&D in Kuopio Science Park. Investments into the water expertise will allow acquiring an exceptionally diverse selection of state-of-the-art equipment to carry out applied water industry research and product development. The operators in region have profiled themselves within the water sector based on their areas of expertise and, as a whole, Kuopio Science Park is one of Finland's most comprehensive water expertise centres. During the past few years, new startups have started to enter the water industry from the hub. Also, existing companies have moved their operations to Kuopio from other parts of Finland to be close to the hub. Growth and new entrepreneurship are also expected with the new applied purification and analysis methods being developed at the water industry's technology and development hub.

Kuopio Science Park's operators are involved in many schemes, including the Mining Water Excellence Network of Finland, forming its operational core. Water industry operators from Kuopio are also active in international networks. To allow that integration – water hub in Kuopio is joining dynamic, transboundary environment of water innovation clusters in Europe and beyond – inspiring new cooperation possibilities. Corporate and industrial cooperation are a central piece in applied research and carrying out product development assignments. Water industry businesses around Finland have flocked to Kuopio to be the customers of the Kuopio Science Park's water expertise hub, especially concerning product development projects. The service concept will be made more diverse in the future with an industry scale RDI environment and a startup centre to better meet the development needs of water technology and water intensive industries.

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