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1 Regional Innovation Ecosystems 2 Fostering Sustainable Development

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6 ABSTRACT

7 This paper examines experiences of the creation and implementation of Smart Specialization Strategies at 10 regions across Baltic Sea Region and then takes a deeper look
8 into Häme portfolio creation at Häme Region in Finland. European Commission has recommended European regions to conduct regional development activities based on
9 Smart Specialization Strategies to support regional innovation ecosystems and sustainable transformation. Smart Specialization work has shown that innovation and development policies in the Baltic Sea Region have led to higher performance and brought
10 prosperity on varying grounds, either through science, knowledge and economy, or digitalization. Smart Specialization has contributed in a positive way to the focus and
11 prioritization of innovation strategies and impacted to the innovation performance of the regions. However, the study concludes that neither inter-regional collaboration,
12 Sustainable Development Goal implementation, nor economic transformation are yet a norm in the Baltic Sea Region.

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20 **Keywords:** Smart specialization, Innovation ecosystem, Regional development, Innovation camps, Portfolio management, Sustainability, Participation
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22 INTRODUCTION

23 Since 2014, European Union has recommended European regions to conduct development activities based on Smart Specialization Strategies (S3).
24 These strategies aim to enhance prosperity of European regions by creating enabling conditions, accelerating research, development and innovation activities as well as supporting active stakeholder involvement for enhancing
25 new entrepreneurial activities. Smart specialization approach embraces open innovation ecosystems supported by collaborative activities. (Asheim et al.
26 2019, EU 2021)

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31 New concepts Smart Specialization Strategy for Sustainability or Sustainable Smart Specialization Strategy (S4) were introduced by European Commission for the new program period 2021–2027. Smart Specialization Strategies
32 are ex-ante conditionality for EU regional funding programs. Smart Specialization is defined currently as “a place-based approach characterized by
33 the identification of strategic areas for intervention based both on the analysis of the strengths and potential of the economy and on an Entrepreneurial
34 Discovery Process (EDP) with wide stakeholder involvement. It is outward-looking and embraces a broad view of innovation including but certainly not
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40 *limited to technology-driven approaches, supported by effective monitoring*
41 *mechanisms.” (EU 2021)*

42 A recent study about “Prioritisation in Smart Specialisation in the EU”
43 (EU 2021) systematically screened and assessed all available European S3
44 strategies to analyse if priorities set within the strategies correspond to regi-
45 onal innovation capabilities. Over 180 S3 strategies were evaluated. In most
46 S3 strategies, a linkage between EU-funded projects in the field of research,
47 development, and innovation and associated S3 priority areas exists. The
48 study recommended that a better, more holistic delineation and specification
49 of S3 priority areas is necessary to increase the effectiveness of smart spe-
50 cialisation. The study suggested also that adequate economic, scientific, and
51 technological resources are required for implementation of successful S3 stra-
52 tegies. Concrete projects are elementary important for inducing the desired
53 economic, environmental, and societal changes. Good governance structures
54 and efficient monitoring practices are essential for successful implementa-
55 tion. Study also recommended more effective and participatory governance
56 structures for the implementation of S3 strategies.

57 The European Commission’s Joint Research Centre (JRC) has been sup-
58 porting smart specialization strategy activities across the Europe. Recently
59 themes related to sustainability, climate change and circular economy have
60 been increasingly emphasized. The guidelines, accompanied with a self-
61 assessment tool for regions, have been proposed to support of regions’ effort
62 in designing and implementing Smart Specialization strategies for sustainable
63 transformation. JRC have worked together with the United Nations to share
64 the EU experiences to achieve also Sustainable Development Goals 2030
65 agenda with localized place-based approach in Europe (Stancova, 2021).

66 **SMART SPECIALIZATION – ENABLING REGIONAL ECOSYSTEMS** 67 **AND SUSTAINABLE TRANSFORMATION**

68 The SmartUp BSR study builds on ten cases in nine countries of the Baltic Sea
69 Region. Large number of regional stakeholders involved in regional smart
70 specialization strategy processes participated in project events to share their
71 experiences and best practices. The aim was also to encourage participants to
72 include Sustainable Development Goals 2030 into regional development activ-
73 ities. Activities included innovation camps and pilots, which endorsed and
74 accelerated activities related to strategy content and chosen spearheads. This
75 enhanced stakeholder participation and international collaboration widening
76 the scope of the innovation ecosystem (Tukiainen and Hongisto 2020).

77 SmartUp study used a strategy framework from management science to
78 examine the Smart Specialization strategy processes in each region. Based on
79 the strategy diamond (Burgelman, 2008), the study introduced a model ada-
80 pting the strategy diamond to serve as illustration for the process of regional
81 strategy creation and revision: the Regional Strategy Diamond for Economic
82 Transformation. The model as illustrated in Figure 1 was used to guide the
83 analysis of the ten regional strategies.

84 The strategy diamond consists of five dimensions: strategy, competences,
85 competitiveness, actions, and culture & leadership. These five dimensions are



Figure 1: Regional strategy diamond for economic transformation (Tukiainen and Hongisto, 2020).

86 interlinked. Each dimension drives the implementation process in significant
87 way. The center of the diamond culture & leadership links other dimensi-
88 ons to each other. In this model strategy creation is one of the dimensions
89 and is only partly responsible for the success needed to reach desired trans-
90 formation. Actions (what region does) implement the strategy and induce
91 real impact. The other two dimensions are equally important: competences
92 including regional resources – economic, scientific, and technological. Com-
93 petitiveness addresses how the region competes, but also how it collaborates.
94 In ecosystems enhancing innovation and sustainability capability for collabo-
95 ration is becoming increasingly important for meaningful change across the
96 regions (Tukiainen and Hongisto 2020, Lappalainen et al 2015, Stancova
97 2021).

98 The emphasis on the process description of a specific implementing organi-
99 zation included the reality of how collaboration is steered in practice. In many
100 cases collaborative strategic action is not necessarily led through strategy,
101 but largely by balancing common and divergent elements between organi-
102 zations. By collecting local evidence with the explicit procedural features as
103 described in the model, the process of strategic creation and revision attem-
104 pted to respond to the commonalities and divergencies among regions. The
105 aim of the analysis was to provide a lens to make the Smart Specialization
106 strategy process sufficiently easy to recognize, point to, and align with. The
107 implementation plans are only relevant regarding to what an organization is
108 realistically mandated to do within the innovation ecosystem.

109 **Innovation Camps as Tools for Sustainable Change**

110 The project organized six Innovation Camps in various locations across
111 the Baltic Sea Region. The SmartUp Innovation Camps focused on chosen

112 “innovation challenges” based on regions’ smart specialization themes. The
113 camps included several participatory workshops using creative facilitation
114 methods and visualizations strengthening active stakeholder involvement.
115 Camps of 1-3 days fostered bottom-up and needs driven innovation processes
116 in regions providing an opportunity for ideation, experimenting and co-
117 creation. Events also enhanced cross regional collaboration and gave insights
118 for more efficient smart specialization strategy implementation.

119 Pilots related to innovation challenges addressed four themes relevant to all
120 regions: healthy ageing, climate change, circular economy, and smart cities.
121 The participants also were advised by experts from the Committee of Euro-
122 pean Regions and Joint Research Centre. Based on experiences during the
123 project the SmartUp team created a Pilot Planning Methodology to encour-
124 age participation and to support the future S3 strategy implementation and
125 practical work.

126 The findings of the study with respect to economic transformation and
127 SDG implementation show a lot of future potential, which will help regions
128 in the transition to a more sustainable regional innovation ecosystem. Based
129 on place-based regional view, Smart Specialization Strategies could be a step
130 towards a sustainable economic transformation across the regions.

131 **OPEN PORTFOLIO MANAGEMENT PRACTICES FOSTERING** 132 **COLLABORATIVE CHANGE**

133 At Häme Region portfolio management tools were created, piloted, and
134 taken in use to support implementation of regional smart specialization stra-
135 tegy SmartTavastia 2018–2021. The aim was to support collaboration among
136 regional stakeholders, provide flexible monitoring and reporting practices
137 over longer periods of time. The intent was also to enhance open innova-
138 tion approach and provide better overview of on-going development activities
139 across the region as well as enable collection of new development ideas for
140 the future.

141 Development and funding programs are monitored via various IT-tools.
142 However, these IT-tools typically focus on one development program or one
143 funding instrument only. This has made monitoring regional development
144 activities and assessing their long-term impact at a specific region difficult.
145 Data about development projects was scattered in many different databases.

146 There are multiple funding sources for research, development, and inno-
147 vation projects across Finland. The Finnish RD roadmap aims to increase
148 RDI expenditure to 4% of GDP by 2030. The potential RDI funding sou-
149 rces include EU funding and national funding. For regional development
150 projects the main funding sources are - EU structural funds European Regional
151 Development Fund (ERDF) and European Social Fund (ESF), European
152 Agricultural Fund for Rural Development (EAFRD); the national Sustainable
153 Growth Programme for Finland boosting reforms and investments; Inter-
154 reg programmes for cross regional development, Horizon Europe for RD
155 programmes, and new Missions programmes by EU. There are also multi-
156 ple sources of development funding by Finnish ministries, Business Finland,
157 Finnish Academy, and many foundations e.g. the Finnish Research Impact

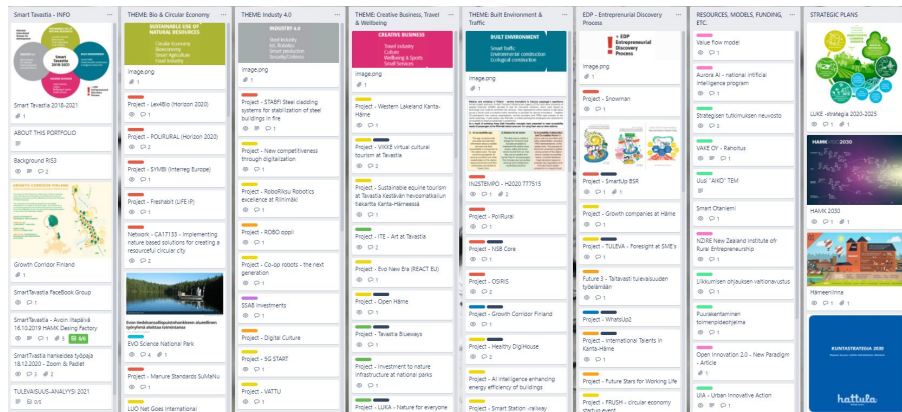


Figure 2: Smart Tavastia 2018-2021 – portfolio management tool with Trello.

158 Foundation. Häme Portfolio aims to collect data of all relevant development
 159 projects linked to regional smart specialization themes.

160 The first of regional development project portfolio was created in 2018 with
 161 an open platform tool Trello to enhance visibility, to identify gaps in funding
 162 allocation and to encourage across project collaboration. The aim was to en-
 163 hance visibility and collaboration among stakeholders and to support open
 164 and systemic development approaches of local authorities, academia, busi-
 165 nesses, and civil society. The first portfolio tool (Figure 2) provided on-line
 166 visibility to covered regional smart specialization themes and related devel-
 167 opment projects, EDP activities, funding sources and stakeholder strategies,
 168 but it had inadequate analysis and reporting capabilities.

169 Prior to development of the second version a benchmarking study was
 170 conducted with 18 Finnish regional councils. Based on responses variety of
 171 portfolio management tools had been used in the other regional councils
 172 before. They were used for mainly for internal reporting and monitoring
 173 purposes, and they covered only the projects funded by regional councils.

174 Häme Portfolio Management Tool Enables Strategic Steering and 175 Supports Collaboration in Regional Ecosystem

176 The second portfolio management tool was designed to enable more efficient
 177 steering and monitoring practices. Participatory workshop was arranged at
 178 HAMK Design Factory and feedback from previous version and suggestions
 179 for the next version were collected from the regional stakeholders. The core
 180 team was assigned to deliver the next generation Häme Portfolio and it con-
 181 sisted of employees from Regional Council of Häme, development experts and
 182 developers from ThinkingPortfolio, the company selected to deliver the solu-
 183 tion. A cloud-based portfolio application was tailored based on requirements,
 184 testing and feedback using agile development approach in three workshops
 185 with demo sessions. Pilot testing was conducted with regional stakeholders to
 186 collect their feedback and recommendations. Häme Portfolio was launched
 187 in March 2020. Data transfer of development project data from previous EU
 188 program period 2014–2020 was conducted during spring and summer 2020.

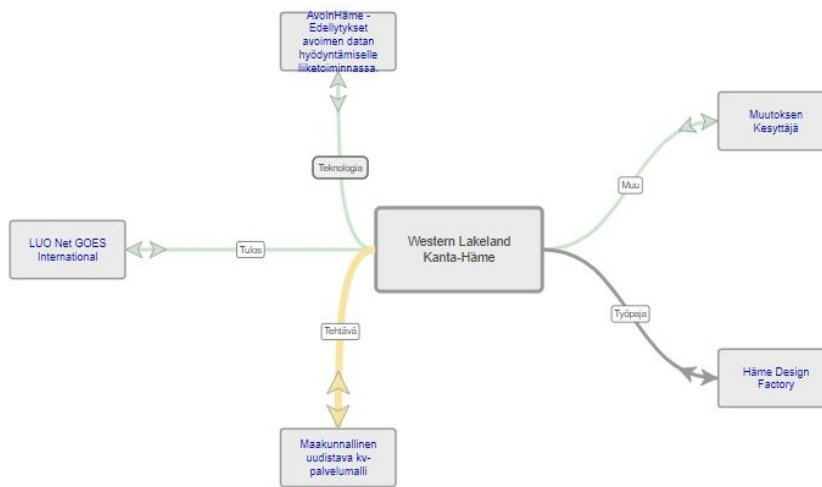


Figure 3: Häme Portfolio tool - visualization of development project connections.

189 Design principles aimed for usability and simplicity. The focus was on
 190 the main functionalities. The intent was to provide support for better regio-
 191 nal development project management practices, encourage collaboration and
 192 knowledge sharing and enable better alignment of projects with strategic
 193 development themes. Also steering, monitoring, and evaluation functiona-
 194 lities were added for individual projects, as well as to strategic development
 195 programs.

196 The Häme Portfolio management tool has good search capabilities of
 197 ongoing and past projects, and versatile analysis and reporting tools. Projects
 198 can be interlinked to form larger entities to contribute sustainable solutions
 199 related wider societal, economic, and environmental challenges. Interaction
 200 and collaboration between projects can be described and visualized (see
 201 Figure 3). Häme Portfolio also has a section for project ideas and suggestions.
 202 This feature can be used prior to official funding calls to support stakeholder
 203 collaboration and formation of larger projects.

204 Häme Portfolio supports strategic development themes of the Finnish
 205 Research, Development, and Innovation (RDI) Roadmap (Ministry of Educa-
 206 tion and Culture 2021). It complements new partnership model encouraging
 207 collaboration among projects and regional stakeholders and it supports
 208 innovation ecosystem development. It is the first cloud-based portfolio man-
 209 agement tool for regional development in Finland. Häme Portfolio enhances
 210 also new ways of working and collaboration thus strengthening innovative
 211 public sector. Based on open innovation principles experiences of new port-
 212 folio management tool has been openly shared with other Finnish regions
 213 in the national network meetings of smart specialization professionals from
 214 regional councils.

215 The future activities include finetuning the practices related to long term
 216 impact evaluation both at project as well as program level. Häme Port-
 217 folio will be used for evaluation of the new regional Smart Specialization

218 Strategy - Smart Häme 2022-2025 and for monitoring long term impact to
219 sustainability, and SDGs.

220 RESULTS AND CONCLUSION

221 The analysis of regional strategies based on the balance of the five dimen-
222 sions of the Regional Strategy Diamond: strategy, actions, competitiveness,
223 competence, and culture & leadership. The Diamond can be used as an active
224 continuous tool for regions to secure positive results from the implementation
225 of the Smart Specialization strategy and avoid imbalances between dimensi-
226 ons. Regions may have well formulated strategies but may be missing the
227 competences to put them into action or vice versa. Regions cannot be succes-
228 sful without competitive and competent strategies and actions. All the Baltic
229 Sea regions were analyzed in the study to help the regions to find out their
230 bottlenecks and achieve the balance between Regional Strategy Diamond
231 dimensions.

232 The results related to Häme Portfolio capability to steer strategic develo-
233 pment and encourage collaboration at regional innovation ecosystem looks
234 promising. Several other Finnish regions are also renewing their portfolio
235 management practices. The work continues with a longitudinal study so that
236 long term impact can be evaluated.

237 Addressing Sustainable Development Goals 2030 challenges all stakehol-
238 ders operate differently. Globalization, digitalization, and climate change
239 demand new approaches from RDI activities linked with regional develo-
240 pment. It is essential to bring businesses, industries, public sector, and
241 academia closer to each other for sustainable development. Open inno-
242 vation practices and regional innovation ecosystems enhance stakeholder
243 participation and accelerate sustainable development. Cross regional colla-
244 boration enables sharing and applying better practices. Digitalization and
245 new interconnected open tools provide possibilities for new ways of working,
246 collaboration with development projects across regions, countries, and con-
247 tinent. Action acceleration combined with sense of responsibility and sense
248 of urgency is needed to induce and support successful concrete projects and
249 concrete results – aiming for true impact.

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