

General part

1. Introduction

The document is about sharing experiences and recommendations based on the Region Östergötland (RÖ) implementation of smart specialization which was prepared during 2013-2014 and implemented 2015-2016. The recommendations are for different stages of implementation (initial, present, future). The stages are very related to implementation of intraregional, interregional and international collaboration within regional development focus areas and smart specialization topics. The document is a summary as part of EmplInno project activities 2016-2018.

The key focus which is of major importance for all three stages is to create an interaction (also described as creating dialogue) between stakeholders for common view and understanding. In this dialogue there is an activity to distribute and collect information as well as opinions by discussion and exchange. The interactive format presents the smart specialization purpose to stakeholders for the overall goal and context of smart specialization implementation. At the same time there is feedback to Region Östergötland from stakeholders about their existing aims and on-going activities in relation to smart specialization aims and vision.

The experience shows that first importance is mobilization of the regional stakeholders by creating interaction and understanding. The next step regarding implementation is to have intraregional knowledge of own strengths and mapping within smart specialization areas. This is needed before interregional and international collaboration and exchange is relevant. At the time of finalizing this document, the intraregional exchange is active and interregional and international exchange is initiated.

The core of the intraregional interactive form was created by forming an Innovation Empowerment Group (IEG) with relevant regional stakeholders. The Innovation Empowerment Group has three physical half-day update meetings and a two-day (lunch to lunch) strategy meeting per year, as well as other internet tools (online platform, email-list, Facebook group, dropbox for minutes and presentations). This group was were useful for interaction, building capacity and RIS3 implementation exchange.

The implementation of activities was done by having a team of specialists which could work on details. A sharing specialist concept was found to be very efficient for creating opportunities from interactions and further regional exchange.

The interactive format is also valid for interregional and international exchange but is more challenging to formalize than creating a group with planned meetings and establish practicalities (e.g. information sharing and documentation exchange). The physical meeting is an important factor for exchange, and other tools are supportive.

2. Problems defined and recommendations of solutions

2.1. Description of current problems requiring innovative approaches in the region.

The region has a regional innovation strategy. The smart specialization (RIS3) was outlined under this focus.

In the region there exist several innovation processes based on traditional avenues such as business development, loans and funding, SME support, etc. These have more focus on the particular needs of a company. There are in addition supportive networks, like incubators, science parks. The stakeholders from this group were used to form the Innovation Empowerment Group which has the interactive format with RIS3 specialists and Region Östergötland.

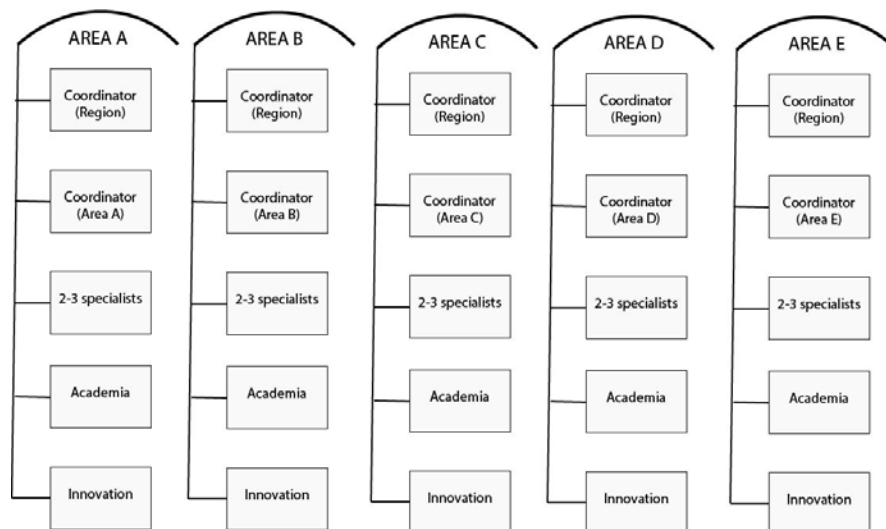
RIS3 operational structure

In order to have clear overview of the structure, a scheme was set in place. The structure also contained contact persons, so it was possible to know who to contact for each area.

Region Östergötland appointed one responsible person for each five RIS3 areas from its organization. This responsibility is not to implement the activities for the RIS3 area, but to make sure that activities are in line with the smart specialization and regional development strategy. The RÖ responsibility also includes to make sure that there is information flow of RIS3 as part of the strategic development of the regional innovation strategy.

A team was assigned to each area of strength. The team members had different skills, so a complementary scheme was possible. One person was appointed as coordinator for each RIS3 area. The coordinator was supported by the other specialists. This team implemented smart specialization topical activities practically.

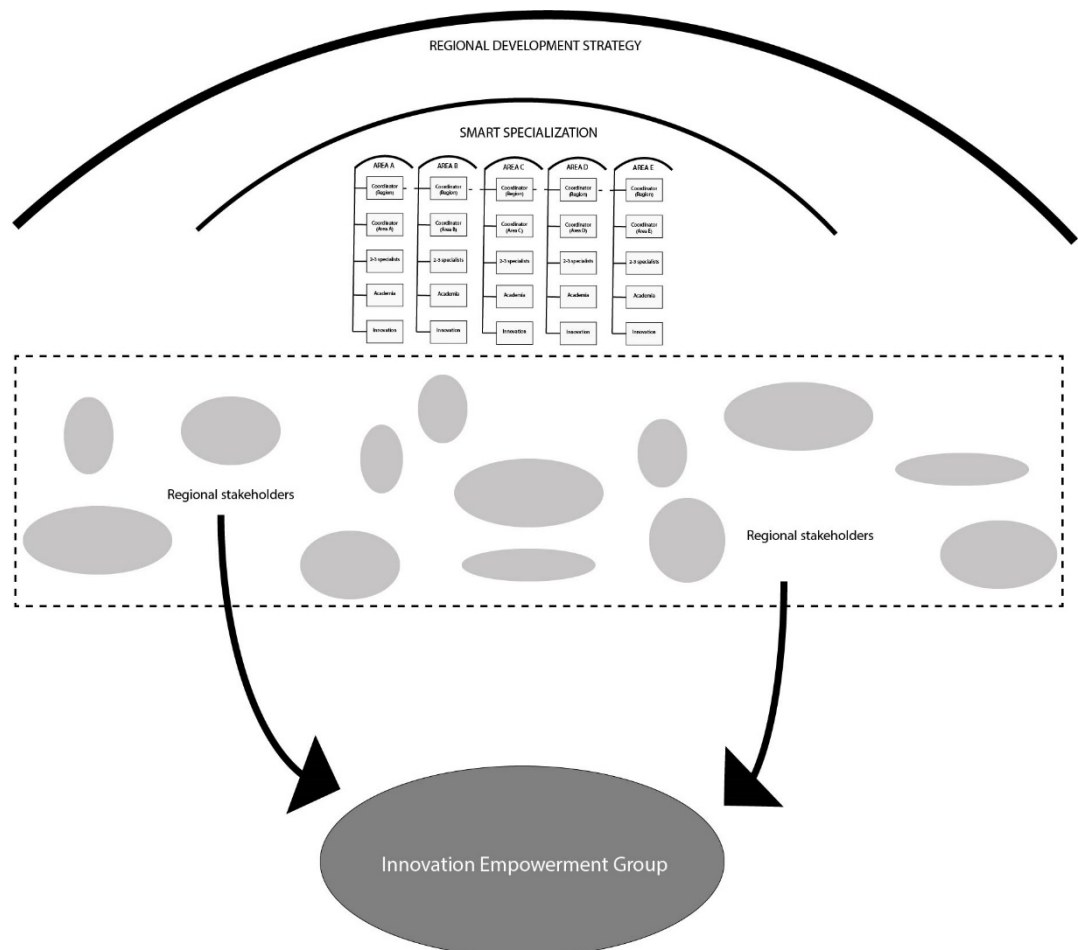
The basic research and innovation aspects are important channels. Therefore, one contact person for each was appointed. The overview of innovation climate and actors (SMEs, researchers etc) is a key factor. In our region, LiU Innovation is an organization that has good overview and are up to date with recent innovation aspects as well as new companies etc. LiU Innovation is an affiliated organization to Linköping University, and has professional business coaches who have contact with students, researchers, innovation actors, SMEs etc. Therefore, one person from LiU Innovation was set as contact point for each RIS3 area. Secondly, for strong research areas, one key researcher from Linköping University was set as contact point. Thereby the smart specialization structure was in place.



Innovation Empowerment Group

In the region there are various stakeholder organizations, some of which are associated organizations to the smart specialization implementation and regional development driven by Region Östergötland. These organizations were invited to form an Innovation Empowerment Group. The group has three physical half-day meetings and a two-day strategic meeting per year, and other internet tools (online platform, email-list, Facebook group, dropbox). The half-day meeting has the aim to update about situations and activities. It is also an opportunity to present new initiatives at stakeholder organizations so these can be considered related to other organization ideas and smart specialization relevance. Information and communication of initiatives and updates of activities important for the region and smart specialization

implementation takes place through this group. The RIS3 specialists are part of this group. Thereby the specialists are updated with planned activities and aims of all relevant regional stakeholders. Given the information using Innovation Empowerment Group structure, the specialists can propose and carry out RIS3 activities.



Problems/challenges

The main challenge related to **creating interaction between stakeholders** is to have a flow of information and opinions to understand the regional economic/industry/business climate and create a common view with all relevant stakeholders. The active participation of stakeholders is a crucial part. Only devoted stakeholders will create progress in smart specialization. Dedication appears from dialogues with common spirit to move towards the overall and agreed goals. The exchange between regional stakeholders drives market trends and technology

advancements. Such interaction is necessary to realize the present situation (which may encounter changes along the way) to maintain as well as steer the RIS3 activities. A successful interaction acts as feedback mechanism in the region, and the active relevant stakeholders are considered as an innovation empowerment.

The IEG provides feedback to Region Östergötland when smart specialization is to be incorporated to the existing regional strategy structure. In this structure, there are aims and strategies for each stakeholder. When smart RIS3 and regional stakeholder interests encounter each other, there will be problems which are revealed by the IEG feedback. At the initial stage of smart specialization start up, a working team within each smart specialization topic was set up. This group prepared information and initial mapping activities. It provided feedback to Region Östergötland so decisions for next practical steps in strategic development of the smart specialization implementation could be made. The working group evolved into a team of specialists in the smart specialization structure.

Problems arise related to identification of areas of strength in smart specialization, which have a broader perspective than the individual actors and their established partnerships, to create common value for a large number of stakeholders. An efficient incorporation of smart specialization is not possible without understanding the interests of stakeholders. They need time to understand the usefulness of smart specialization in order for them to implement RIS3 in their organizations. Without that understanding it will not be possible to allocate common smart specialization or regional development goals for sub-goals related to stakeholders' own interest and view. Such understanding is necessary to modify (but not change) the organizations ways to work in their core business structure in order to facilitate accommodation of the smart specialization strategy.

We have experienced initial, present and arising challenges. The challenges are closely related to intraregional, interregional and international exchange.

The **initial challenge** was that in each smart specialization area there was no comprehensive overview of the areas and responsibilities or contacts points. There was no systematic flow of information and efficient communication/exchange channels. As a result, the intraregional efforts were scattered, and no synergies appeared between smart specialization topics and regional stakeholders.

The **present challenge** is in that there are innovation activities which have been communicated with or within the innovation empowerment grouping, but also other (external) innovation activities which have founded around certain aspects (particular technology, competence centers, etc) and not communicated with the innovation force grouping or Region Östergötland. Both type of activities should move forward to reach their aims, but the interest for supportive funds etc are creating an unintentional competition instead of synergy.

In addition, the present challenge includes the initiation of interregional collaboration. There are several avenues which have common interests in regions, such as additive manufacturing, sustainability, etc. Several regions have same or very similar areas of strength. There is an uncertainty in how to collaborate in same avenue and keep in mind each regions' own interest for its regional growth.

The **arising challenge** is in how the regional innovation activities fit into a national and international context. In Sweden there are governmental strategic innovation programs. For example, one of these is "Connected Industry and New Materials". The topic in Region Östergötland on topic "Advanced materials" is very linked with these. But there is no exchange between the regional and national activities, and as consequence there is no common focus between regional and national aims.

2.2. Lessons learnt or key findings acquired during the project realisation.

Initial challenge

A lesson learnt was related to scattered focus. A leading partner (coordinator) was not identified at the initial stage for each smart specialization area. For example, initially Science Park Mjärdevi was the acting organization related to the smart specialization topical area "Advanced Materials". The Science Park had at the same time several areas of interest, such as internet of things, visualization, etc. These areas were very linked with the interests of the companies in the Science Park and is a core interest for the science park.

The scattered focus was addressed by setting up a regional RIS3 operational structure (described in section 2.1). In this structure, the RIS3 specialist team was important for creating pilot activities. For example, Mjärdevi Science Park initiated a prestudy with Region Gävleborg in 2015 related to "Smart materials". As part of Emplnno activity, the RIS3 specialist could through local workshops connect an SME in the region

Gävleborg to the university research in the region Östergötland. As an outcome, three academia-SME projects were created (described in more detail in Synergy & Empowerment of WP3.6). The cross-over activity of RIS3 specialist raised an organizational coaching tool of sharing specialists as an outcome of the EmplInno activity in WP3.6 (Advanced Materials). This is described in the file “Organizational Coaching Tool” for Region Östergötland.

Another lesson learnt was how to relate specialists with areas of strength for each smart specialization topic. For example, at local workshops there were person invited but no overview of which areas. There was no mapping which could be used to address properly a target group for a specific topic. Due to this, the mobilization of regional players was difficult.

As part of EmplInno activity, a mapping was carried out in the smart specialization area Advanced Materials to create an overview of which type of organization were involved in different areas. The categories were academia, institutes, SME, and large industry. Even though a complete mapping was not possible due to the broad field, it raised a list of relevant stakeholders. The activity raised awareness and interested stakeholders became involved. These stakeholders were invited to local workshops. Each workshop had a focus and was used to set next levels. At each workshop the views from stakeholders were collected. Thus, the mapping led to identification of next step in the smart specialization implementation, and each step there was confirmation from the regional stakeholders to follow the most common view (and adapted in respect to smart specialization). The workshops lead to the creation of a cluster (“Innovative Materials Arena”) that was based on stakeholders who showed interest in cluster networking. The details are presented in the document “Synergy & Empowerment” of WP3.6 (Advanced Materials) that is coordinated by Region Östergötland.

One lesson was related to information and communication flow between stakeholders, as well as clear contact points. Even though there is a structure, the channels of information exchange need to be activated in order for the structure to be functional.

The RIS3 specialists involved in EmplInno provided a channel between RÖ and IEG. The specialists have more time than organization leaders to familiarize themselves with details of both RIS3 and stakeholder aims, and clarify the actual need of the solution to each problem. In addition, the IEG meetings were used to further communicate and understand the overall adaptation of smart specialization. The IEG work flow provided

feedback to RÖ so measures could be initiated to adapt smart specialization. The combination of RIS3 specialists and IEG acted as communication channel and regional implementation scheme.

Present challenge

The present challenge relates to the need of relation with stakeholders (intraregional organizations, potential partnership regions, etc) which are not in the innovation empowerment group but important for capacity building. Here activities like workshops interlinking regions, transnational trips etc become important. A lesson learned was also that there must be a driving person for activities, for example coordinator. At the same time, one person has limited resources and time. Thus, a team is needed in order to move ahead.

The relation with such external stakeholders was established by physical meetings where issues were discussed in detail. In case of regional capacity building, the two local workshops organized in EmplInno project acted to bring stakeholders to common view and creation of a cluster that is expected to give rise to regional growth. The contents of the workshop were set by the specialist team, and the overall scheme was held together since there was a project leader (team coordinator) who was responsible to implement and report to Region Östergötland about the progress.

International collaboration/partnership

The international exchange is based on combination of EmplInno project and Region Östergötlands involvement within East Central Sweden partnership (Östergötland, Örebro, Västmanland, Södermanland). The lesson learnt here is that East Central Sweden partnership has its four focus areas, and these do not perfectly match the regional smart specialization areas. These are on broader level than the smart specialization focus areas. For example, the smart specialization topic “Advanced Materials” falls under the East Central Sweden focus areas “Smart Industry” and “Tomorrows Energy Solutions”. The mapping activity becomes important in order to place activities under proper category of East Central Sweden implementation. This will also be relevant when aligning with other regions in Europe. Feedback from interregional and international exchange (for example from delegation trips, exchange with partnership regions like East Central Sweden), and empowerment using specialists is provided to Region Östergötland. Together with feedback from IEG,

Region Östergötland can initiate suitable activities in line with regional innovation strategy and smart specialization.

The mapping made in EmplInno project provided ideas of areas where there could be exchange with other regions even though the overall partnership focus areas were broader than in the smart specialization area of Region Östergötland. The exchange of regional areas of strength and strategies before delegation trips provided focusing to certain topics. The participating persons in delegation trips were also selected based on their expertise areas which could fit with the identified regional areas of strength. In comparison, an international event organized within the EmplInno project under the umbrella of a scientific conference showed that it would be better to invite interested researchers to a more industrial event. In research there is still strong focus on the academic track, and thereby more industrial events have stronger probability of matchings that can lead to exchange with regional growth.

1.3 Recommended solutions/ideas/good practices, improving RIS3

Present and arising challenges

The activities in the present and arising stages are initial. The aim will be to resolve areas in which focus can be addressed. Further regional growth will occur by partnership and synergies with other European regions. The areas of common interest with other regions should be defined to more concrete level, and pilot projects created. Without such definition, there is a risk that there will be exchange of intentions instead of real values for the regional stakeholders which are the base for the regional growth. Here the challenge is that each region does not have exactly same focus (for example, “Advanced Materials” or “Material Technology and Sustainable Production”) but still being in same general area. This is valid both for interregional and international collaboration.

A tool for such focus is addressed by the concept in EmplInno of sharing specialists who act to identify exchange schemes within smart specialization themes (the full details are presented in the file “Organizational Coaching Tool”). In short, the sharing information using specialists between regions within a smart specialization theme created pilot projects.

For further RIS3 development related to interregional exchange, there is need to identify avenues which contribute to synergies between different smart specialization

themes, and common avenues between regions. Such different themes could for example be advanced materials and digitalization. In longer perspective, such synergies could be helpful to link regional strategies with the national (or European) ones.

The synergies can be realized by a cross-breeding between themes by using specialists and clustering effects. As part of EmplInno project, it was understood that the specialist exchange and clustering activities are basic tools which have potential to build RIS3 capacity (described in Synergy & Empowerment for the initial and present stages) and results in pilot projects which are important to show that there are results with have value for stakeholders in their activities already today. Thereby similar but more advanced tools for RIS3 interregional development are also likely to be accepted by regional stakeholders.

Innovation Empowerment Group

Once a RIS3 structure is set, the interaction and information flow can be realized by the Innovation Empowerment Group which involves various stakeholder organizations, some of which are associated organizations to the smart specialization implementation and regional development. The physical meetings together with other channels create a flow of information both about RIS3 strategy, but also feedback to align RIS3 implementation with ongoing stakeholder aims.

Sharing specialists

The use of team with RIS3 specialists can, in addition to the task to boost within each smart specialization theme, support to identify areas of common interest between regions and create pilot projects when the specialist activity includes exchange with other regions for sharing competence and practices, as explored with demonstrated outcome within the EmplInno project.

Clusters and competence areas

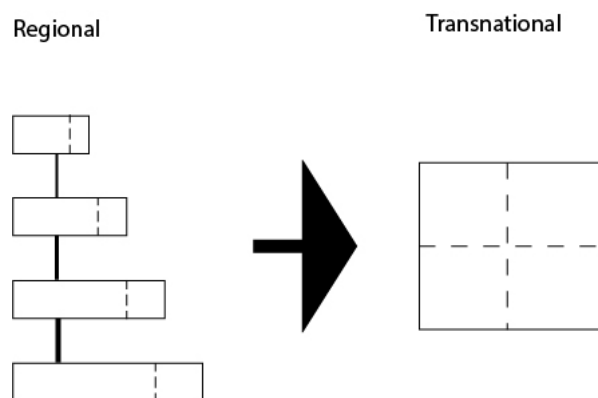
The capacity building results in nodes such as clusters and competence centers. During recent years Region Östergötland has achieved several clusters and competence center type of nodes. These reflect the particular areas of advantage in Region Östergötland and can be used to partnership with regions in smart specialization in the future. Exchange of learnings for cluster formation was done in EmplInno project with Region Gävleborg, and the formation of the cluster “Innovative Materials Arena”,

which resulted from the local workshops organized in Emplnno project, may have strong growth from the cluster learnings.

Crossbreeding by interdisciplinary focus exchange using shared specialists

Meetings between different focus areas create ideas. The term focus can be a topical area (e.g. digitalization), theme (e.g. sustainability) or a branch of industry (e.g. aerospace). In this activity, the specialists spend time in other focus areas, and exchange with other specialists and relevant organizational contact points. There appears a crossbreeding between focus areas that gives birth to novel approaches from different disciplines. This can also be applied to different regions. A necessary resource is to have specialists who are involved or active in another regions' smart specialization implementation.

This model can be relevant for the Smart Specialization 2.0 programme. It would boost interregional activities to transnational cooperation. The understanding of each regions' strengths can create a joint transnational partnership which has a cohesive view.



Specific part

Contact Region Östergötland for further details.