



Rural development

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(Rural Regional Research) R3 Brief is a publication series providing a quick insight into some selected recent research addressing rural and regional development in Sweden.

Territorial innovation – bringing resources and actors together

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Since the late 1990s, the literature on regional innovation systems in Sweden has been one of the more abundant and lively on the international scene, especially due to the work undertaken at the CIRCLE laboratory at Lund University (Asheim & Isaksen 2002, Asheim *et al.* 2011). Although most of these studies

tend to focus on high-tech industrial clusters in larger city-regions. Focus on rural innovation has been rarer. In this Research Brief, we review some of the more recent studies that propose a fresh outlook on the innovation processes that take place in varied rural and regional setting

INNOVATION FOR THE BIOECONOMY

In their qualitative study, Karlsson *et al.* (2017) investigate four Swedish farms producing biogas from organic waste. Despite their potential, biogas plants in Sweden have not been profitable ventures yet. Karlsson *et al.* (2017) propose to use business model innovation (BMI) in strategies for arranging, producing, and marketing farm-produced biogas. BMI appears to be especially beneficial for creating public-private networks with the aim to invest in farm-based biogas production. These investments stimulate rural development and provide new business opportunities and market outlets for SMEs in the agricultural sector. The study found that the network of public and private actors in farm-produced biogas production places a high value on environmental sustainability as well as on other social benefits because of the reduction on fossil fuels for energy.

Biorefineries have been in the spotlight as a possible regional development strategy for the implementation of smart specialisation in rural, biomass-rich regions. Looking at the case of Processum in Örnsköldsvik, Dubois and Kristensen (2018) show the increasing integration of scientific knowledge production capabilities on the site of the cluster, whereas earlier stages focused essentially on industrial applications of knowledge developed elsewhere. The biorefinery in Örnsköldsvik has had a long-ranging effect on local development and dynamic synergy creation, based on biorefinery outputs such as heat.

A main takeaway from the Processum case is the progressive transformation of the cluster into a more integrated complex spanning from bulk commodity production, to industrial and manufacturing process design to scientific and operational knowledge co-production and diffusion.

Ten years of cluster cooperation within the framework “The Biorefinery of the Future” has resulted in: 61 new products, services, or processes; 58 prototypes; more than 100 approved patents; 10 new companies and about 30 business expansion investments or establishments.

SOCIAL INNOVATIONS AND MULTI-ACTOR PROCESSES

Another important theme in Swedish rural and regional innovation research is social innovation. Lindberg (2017) emphasizes that addressing the urgent societal challenges linked to rural decline necessitates initiatives aiming, for instance, to engage vulnerable groups in social service design and delivery, to support multi-stakeholder involvement and participatory workshops and to test these solutions in micro-projects. The concept of social innovation, which has gained momentum in all tiers of governance, from the EU to the regional level, frames these inclusive processes combining the development of new economic activities and addressing long-standing societal challenges, such as poverty, unemployment, ill-health and migration.

The implementation of smart specialisation has become a test-bed for new governance models for regional innovation. Looking at Nordic peripheral regions, Dubois *et al.* (2017) showcase the example of Västerbotten which has applied a Quadruple Helix approach including firms, universities and public authorities, as well as the regional civil society. These multi-actor processes are sustained through multiple meeting places such as an Innovation Forum. Local initiatives have emerged, too, such as Meetpoint Lycksele that promotes interactions among the municipality's economic and societal actors in the municipality of Lycksele by arranging events and activities attracting a broad range of local stakeholders. The region Västerbotten builds its strategy on the importance of four COs: CO-design, CO-creative development, CO-constructive development and CO-innovation.

Taking the example of the MAX IV facility near Lund, Rekers (2016) discusses how large-scale research facilities, which are multinationally financed and governed, fit within the regional

socio-economic fabric. She stresses that the issue of responsibility is a balancing act between ensuring coordinated actions to develop these mega-projects and connecting them to existing research organisations of the region, which necessitates harnessing new types of skills and competences.

KNOWLEDGE-BASED INDUSTRIAL TRAJECTORIES

Using data at firm level for the period 2005–11, Grillitsch and Nilsson (2017) show that, even though firms with low knowledge intensity tend to grow faster in knowledge-intensive regions, this effect tends to disappear or even be reversed when it comes to knowledge-intensive firms. The authors suggest that knowledge-intensive firms that are located in less dense knowledge regions may be better off because they are less dependent on local knowledge exchanges, have more established routines of sourcing knowledge from elsewhere and are less likely to suffer from negative externalities due to a cognitive 'lock-in' engendered by tight relations with local competitors. The study results challenge established understandings in economic geography that the performance of knowledge-intensive firms is exacerbated by agglomeration economies. This implies that peripheral regions may actually be appropriate environments for hosting such firms.

James *et al.* (2016) propounds that a challenge to contemporary territorial innovation models is that innovative firms often mobilize knowledge across regional boundaries. The territorial knowledge dynamics perspective stresses the necessary imbrication between regional and extra-regional relations. Using the case study of the automotive sector in the Västra Götaland, the authors show how such knowledge interactions develop over time. The case study especially stresses the critical role of VINNOVA, and its collaboration-oriented approach to innovation project management, in anchoring knowledge within a region.

Looking at the development of the chemical industry in the same region, Martin (2020) examines the evolution of this sociotechnical landscape following technologies, infrastructures, regulatory frameworks and other societal dimensions, both within and beyond the regional context. She points out to the increasing connection between industries and actors along the value chain, i.e. new linkages between seemingly unrelated industries. The study brings new perspectives on the importance of knowledge and competence diversification in learning processes.

Using data matching employers and employees in Swedish regions, Neffke *et al.* (2018) show that structural change, measured as a combination of diversification and specialization processes, is slow and is affected differently by different agents. Established agents reinforce the current regional economic fabric, whereas entrepreneurs expand it. The authors also find that most structural change is induced by newly settled firms and entrepreneurs originating from outside the region. The study thus emphasizes the importance of openness in regional development processes.

MIGRATION AND INNOVATION AT THE PERIPHERY

The northern periphery of Sweden has been a popular destination for lifestyle migrants from European countries such as the Netherlands, Switzerland or Germany. Carson and Carson (2018) examine how international lifestyle immigrants contribute to new tourism development and learning and innovation spill-over through networks of interaction and collaboration in Arjeplog, Arvidsjaur and Sorsele. Their social network analysis reveals that immigrants are less involved in collaboration activities with local

tourism stakeholders, thus limiting the extent of learning processes and innovation spill-over. The socio-cultural distance between immigrants and locals, limited levels of trust and reciprocity, and diverging views on development and lifestyle priorities, and issues around exclusive immigrant networking are the main explanations for this limited integration.

Carson *et al.* (2016) explore local development processes in remote rural communities which are often considered at a disadvantage in their capacity to innovate as small populations, dispersed settlement structure, lack of critical mass of firms and organisations are considered as limiting factors. The authors thus emphasize the importance, for these communities, of harnessing the opportunities coming from temporary mobilities, i.e. being able to make the best of the knowledge, skills and competences that are visiting the communities for more or less long stays. They stress the role of younger lifestyle migrants in revitalizing communities by bringing new entrepreneurial skills and pursuing new market opportunities that locals had been unable to fill.

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