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Restructuring in sparse regional structures – a Swedish case

Abstract: *This paper visualizes and analyses demographic and socio-economic changes in a local labour market perspective. The territorial context is a part of the sparsely populated northern coastal area of Sweden, representing a wide range of differences in conditions and development patterns. The area is divided into two local labour markets with a highway as the main connecting link. The study puts attention on processes of change between 1990 and 2002.*

The analysis is based on georeferenced data with a high spatial resolution and to personal attributes linked to each inhabitant. The paper illustrates spatial structures and processes of change in terms of population, employment, and people with a higher education. In particular, the different development patterns within urban and rural parts of the area, where we find strongly contrasting growing and declining settlements, is discussed in relation to theoretical notions on the role of social capital and creative class. The concluding part is devoted to a discussion of future perspectives for the different parts of the area and appropriate planning approaches.

Key words: *urban-rural linkages, rural restructuring, social capital, creative class, spatial planning.*

Introduction

One consequence of the integration processes in the European Union is that national barriers to flows of people, goods and capital, have been significantly reduced. This means elaborated options for firms to increase their competitiveness through relocations and more efficient organisation of production and logistics. For individuals and households this means a corresponding increased freedom to stay or to move. However, increased flexibility and locational options for firms and households mean increased vulnerability for regions and localities. A positive development is much more than earlier about adapting to national and international tendencies and to develop a competitive strength in both attracting and maintaining production and people.

A specific feature of the northernmost areas of Europe, with several corresponding conditions in mountainous areas further south in Europe, is the sparse settle-

ment structure. A low population density in combination with rather few major agglomerations means weak local market potentials for various types of services and industrial production. This is also a rather weak environment for development of competitive industrial production in a global perspective. A further complication for the northern societies is their remote locations from the main market centres of the world. For individuals and households the sparse settlement structure and accessibility hindrances mean more limited life chances, in terms of educational opportunities, business and job opportunities and provision with commercial, social and cultural services, compared with conditions in more central and denser regions. On the other hand, sparse environments may have more or less compensating attractive qualities in terms of small scale, certain landscape features and high amenity values.

A regional strategy to reduce vulnerability with respect to net-outmigration of people, relocations of existing firms and low attractiveness on new firms and entrepreneurs may be to give priority to measures aiming at an enlarged regional area for jobs and service provision. These measures may range from collaborative efforts in provision of various types of services and marketing activities to investments in a more functional transport and communication infrastructure. This policy approach is in accordance with basic principles launched within the EU initiative ESDP, which is the acronym for European Spatial Development Perspective. Elaboration of more distinct functional regional areas with a polycentric character provide advantages in terms of more efficient use of regional resources in a market perspective. It also opens up for a higher level of coordinated policy and planning measures for promotion of urban and rural development.

The purpose of this paper is to visualize and analyse the demographic and socio-economic development pattern in a Swedish regional context, which is going through a significant structural change towards a combination of urban-suburban concentration and decline in traditional industrial and rural areas.

Theoretical perspectives

Places and regions all around the world have during the last decades gone through substantial changes. Not least many rural areas and sparsely populated regions have been exposed to what may be termed *rural restructuring* (see for instance Marsden *et al.* 1990, Ilbery 1998, Marsden 1998, Phillips 1998, Hoggart & Paniagua 2001). Restructuring is usually the outcome of several inter-related processes, some dramatic, other rather slow but, nevertheless, far-reaching when accumulated over long time periods. Many of these processes may be grouped into broad categories such as socio-demographic, economic, political and cultural changes (Pettersson 2002). The processes involved are frequently more or less universal but the combination, timing and outcome in places and regions are usually more specific. In order to understand local and regional development, there are several theoretical approaches trying to explain

what generates development and why places and regions develop in different directions. In this section we briefly summarize some of these theoretical perspectives.

One very influential approach, initially put forward by Perroux (1955), concerns theories about the importance of so-called growth-poles. The main assumption is that governments and companies through large and geographically concentrated investments, mainly in export-led industries, are able to speed up regional economic development and thereby also to generate positive spread-effects in surrounding areas. These ideas have also been implemented in regional policy and development programs all around the globe, not least as a tool to promote economic growth in underdeveloped or stagnating regions. The general idea that spatially concentrated heavy investments lead to regional growth has also been applied to public spending on physical infrastructure, social welfare services, higher education and R&D-facilities such as universities and technopoles.

During the 1990s ideas regarding the importance of social capital became widely acknowledged. The social capital theory is often associated with Putnam (1992, 2000). From this point of view active engagement in civic, social and political organisations stimulates mutual trust between individuals and in the long run also forms the basis for well functioning institutions. The level of social capital is believed to be positively correlated with development and predicts that societies characterized by lots of social capital are both more democratic and have stronger capacity to maintain long-term economic growth. However, a strong social capital is no guarantee for success. In times of strong pressure for restructuring, due to changed conditions in terms of relative competitive strength, it may act as a conservative factor rather than an offensive asset. Although from a high level of aggregation in Sweden the commitment to civic associations has in recent years generally declined (SCB 2003). Never the less the number of local action groups and membership in these organisations, especially in rural and sparsely populated areas, has increased dramatically (Herlitz 2000).

In a major work Schumpeter (1934) highlighted innovative managers as a main economic development factor. In recent years the importance of creativity as a main factor behind regional development has been advocated by Florida (2002). The basic idea is that economic growth, at least in the developed parts of the world, increasingly is generated by a creative class:

“The driving force is the rise of human creativity as the key factor in our economy and society. Both at work and in other spheres of our lives, we value creativity more highly than ever, and cultivate it more intensely.”
(Florida 2002, p. 4)

The creative class includes people doing various types of creative work, for instance engineers, architects, researchers, teachers, writers, musicians, managers, lawyers, consultants and technicians. In contrast to other classes, such as the working class and the service class, people belonging to the creative class have,

in general, longer education and higher incomes. According to Florida, the proportion of creative people and the ability to make use of their creativity explain differences in economic development in US regions. In this way, US regions with a high share of creative people already outperform many traditional industrial centers and metropolitan areas in terms of economic growth.

Florida (2002) claims that creative people do not necessarily migrate to regions offering many jobs, rather they choose places that are perceived as attractive to them. In this way, career opportunities are just one aspect among others. Places attracting creative people are characterized by tolerance, diversity and flexibility. Creative people prefer places that offer a wide range of recreational activities and personal freedom to choose life-style and identity, and that permits self-expression. In many cases these places are big cities and metropolitan areas, but there are also examples of smaller places and less densely populated areas attracting the creative class, not least because of these places high amenity values and authenticity. In contrast, creative people tend to avoid places and regions that are perceived as traditional, hierarchical and not open to newcomers, alternative lifestyles or new ideas. In particular, the kinds of communities with lots of (traditional) social capital put forward by Putnam are, according to Florida, more or less doomed to fade away. Small communities, often industrial or rural ones, characterized by strong social ties and conservative values are especially at risk of being abandoned by the creative class, whereas societies that offer both openness and social capital are those that are likely to become winners in terms of in-migration and economic growth. Both creative people and firms tend to cluster in these attractive places. From a company perspective the decision to locate or invest in such a place is of interest in order to find qualified personnel, whereas from an individual's or household's perspective it is advantageous to live in a place with many possible employers to be able to change jobs frequently. Perhaps this can also be interpreted as a risk-minimizing strategy for individuals, especially young people, trying to make a living in a period with dramatic labour market changes and a society characterized by increasing uncertainties regarding for instance job-security (see also Persson & Wiberg 1995).

Florida's ideas and findings partly correspond with observations done by researchers in Sweden and elsewhere in Europe. Already during the 1980s Andersson and Strömquist (1988) argued that Sweden had entered a post-industrial knowledge society where local and regional growth was based on factors such as knowledge, competence, creativity, communications and culture. They thus also included the importance of good communications for people, products and information, whereas Florida (2002) tends to play down this aspect as a key factor for regional development.

The creative class that Florida (2002) describes may also be seen as a mix of Höjrup's (1989) two life-modes emphasizing independency/autonomy respectively career. Creative people thus value both independence and to make career

though at the same time avoiding the traditional professional progress achieved by being loyal to one firm for a long time. Creative people, argues Florida (2002), make career by being active on a horizontal labour market and change jobs frequently not only between firms but also between branches, sectors and even professions.

According to a study by Garvill *et al.* (2000) an already substantial and increasing share of Swedish migrants claim that the main reason for moving is social or environmental. In fact, this category clearly outnumbers the group emphasizing work-related motives. Also motives related to education are frequent. Although the study was not limited to the creative class, it indicates that there have been important changes regarding the motives for migrating during the last few decades. There are also several Swedish studies indicating that migration to the countryside or sparsely populated areas is to a substantial degree driven by social, environmental and life-style motives (see Borgegård *et al.* 1993, Kåks & Westholm 1994, Stenbacka 2001). Nevertheless, most migrants to rural areas settle close to towns and cities and few move to rural areas outside the commuter zones of major towns and cities (Amcoff 2000, Pettersson 2001, Hjort 2005). It seems, however, that also some peripheral rural areas in Sweden are attractive and this might be explained by these areas having certain landscape qualities, often combined with high amenity or heritage values, or offering recreational opportunities such as winter sports (see for instance Pettersson & Westholm 1998, Glesbygdsverket 2001, Pettersson 2001). Studies of migration and counterurbanisation within the local labour market of Umeå show a preference among outmigrants from the city to choose small towns and villages within a convenient distance for commuting to the city of Umeå (Pettersson 2001, Bergström and Wiberg 2003). Other attracting factors are proximity to water (lakes, rivers and the sea), villages characterized by agricultural landscape and accessibility to main roads. The most favourable rural options thus have both accessibility and amenity qualities.

Data and methodological approach

The data used in this study is derived from a database collected by Statistics Sweden and stored in the comprehensive database ASTRID covering the whole of Sweden. The database is part of a project, developing a geographical micro simulation model regarding population, at the Department of Social and Economic Geography at Umeå University and the Spatial Modelling Centre (SMC) in Kiruna. The analysis presented here is contributing to the development of the model as a planning tool for more sustainable socio-economic development in sparse regional structures. The database contains a number of attributes linked to each individual. A further specific feature of the database is that the data is georeferenced, meaning that to every individual a set of coordinates, accurate on 100 x 100 meters, is attached.

An advantage with the georeferenced database on an individual level is that descriptions and analyses may be performed independently of administrative borders and traditional forms for aggregation of data on individuals. In this case this enables a vast array of opportunities for analysing variations of development processes in sub zones of the chosen study area.

However, all the linked georeferenced attributes to each individual calls for a careful handling of how results are presented from an ethical perspective. This is of special importance in sparsely populated areas. The method chosen to handle this is to calculate the number of people with a certain attribute within a radius of 5 kilometers from each square of 100 x 100 meters. Hereby, the maps show absolute or relative values generalized for neighbourhood areas. Although this procedure creates more generalized surfaces, some of the values in extremely sparsely populated and interior areas become rather distorted mainly due to the fact that even small changes in absolute values may lead to substantial changes in percentage or average values. The moving in or moving out of a small number of households may give a dramatic impression for example in terms of relative change of the highly educated or average age.

Spatial structures and processes of change

The geographical context studied here is located along the coast of the Bothnian Gulf in the northern part of Sweden. Umeå and Örnsköldsvik are the dominating municipalities, with the biggest urban centres. The character of these vary significantly. Umeå is a university city with a service oriented labour market, while Örnsköldsvik is characterised more by goods producing companies with machinery and pulp and paper as leading branches. The built environment in the surrounding countryside has a wide range of characteristics. The traditional types of settlements are the small service towns and the more outstretched villages, which in most cases have been formed by opportunities to cultivate land and nearness to rivers and lakes, which provided opportunities for transports. A rather new type of settlement for permanent living is locations close to lakes and, in particular, the sea, which initially were settled to be used as second homes.

The delimited area has approximately 170 000 inhabitants and had an increase of population of 5.4% between 1990 and 2002. This growth has continued even after 2002 and is in contrast to the decline in population figures across all areas in Sweden with a corresponding sparse nodal structure and low population figures. During the period studied here the most dynamic change took place between 1990 and 1997. After that followed a stagnation up to 2002, when the rate once again came back to the 1997 level. Approximately 75 000 inhabitants are at present living in the city of Umeå and 35 000 in Örnsköldsvik. The distance between the city cores is approximately 105 kilometers. The study area may be characterised as a distinct two-centric area with a main road as the linking transportation infrastructure. A weakness of the study area from a functional

perspective is that it is divided between a handful of municipalities and especially between two counties and thereby two rather separate organisational frameworks for regional development above the municipal level. In a labour market perspective the area is divided into two local labour markets. This is also clearly shown in a recent study of commuting patterns within the area (Sandow & Westin 2005). A further feature of the area is a relatively persistent long term growth pattern in one of these local labour markets and a stagnated development in the other. However, a realistic option for the area is to increase internal accessibility conditions and thereby provisions of enlarged demand volumes, variety and flexibility within both the labour market and the service market. This option is under way of being significantly backed up by investments in a new railway with capacity for high speed trains. The traffic is planned to be in operation around the year 2010.

The data base provides the possibilities of studying the processes of change between 1990 and 2002 in terms of population, migration flows, employment

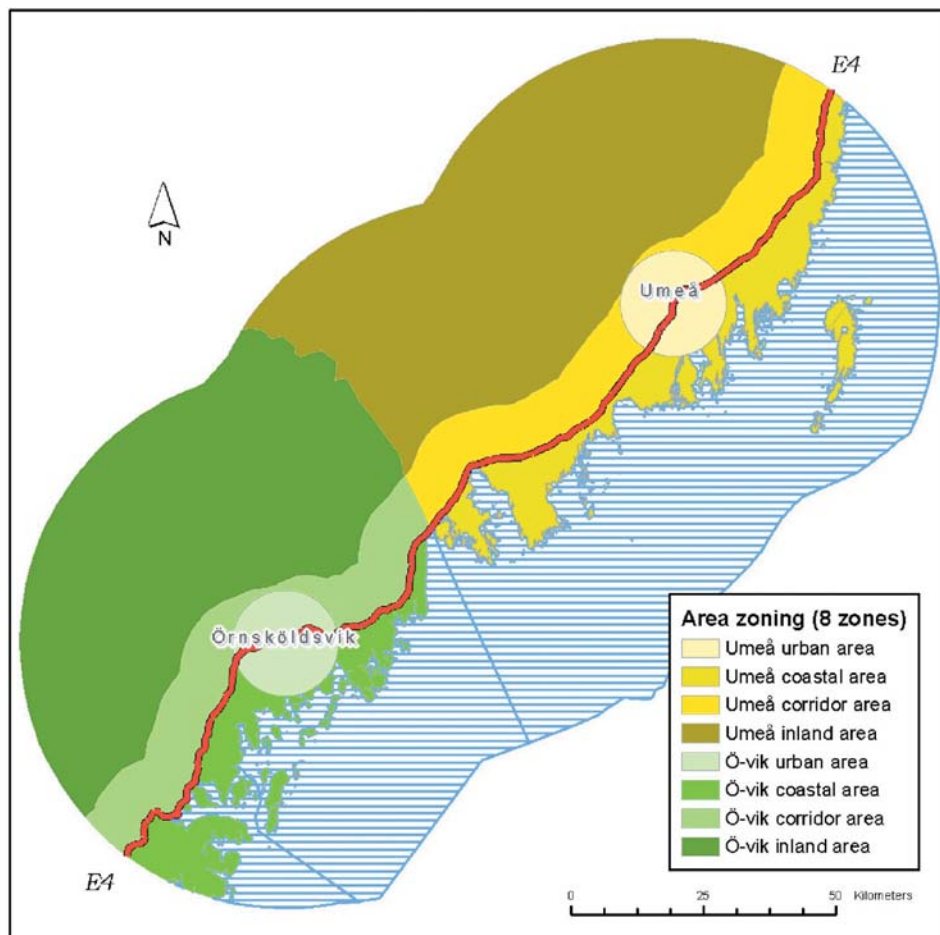


Figure 1. The study area divided into sub zones.

and formal qualifications among the inhabitants. In the analysis some data have been calculated for eight types of sub zones (Figure 1), which have been delimited in relation to distance to the two city cores, the main connecting road E4 and the Bothnian Gulf. Ten kilometres from the cores, respectively the main road, are estimated as outer limits for a strong impact of these different prerequisites. This division is made in order to describe how different levels of accessibility to city cores, the coast of the Bothnian Gulf and the main transportation link is reflected in the development patterns.

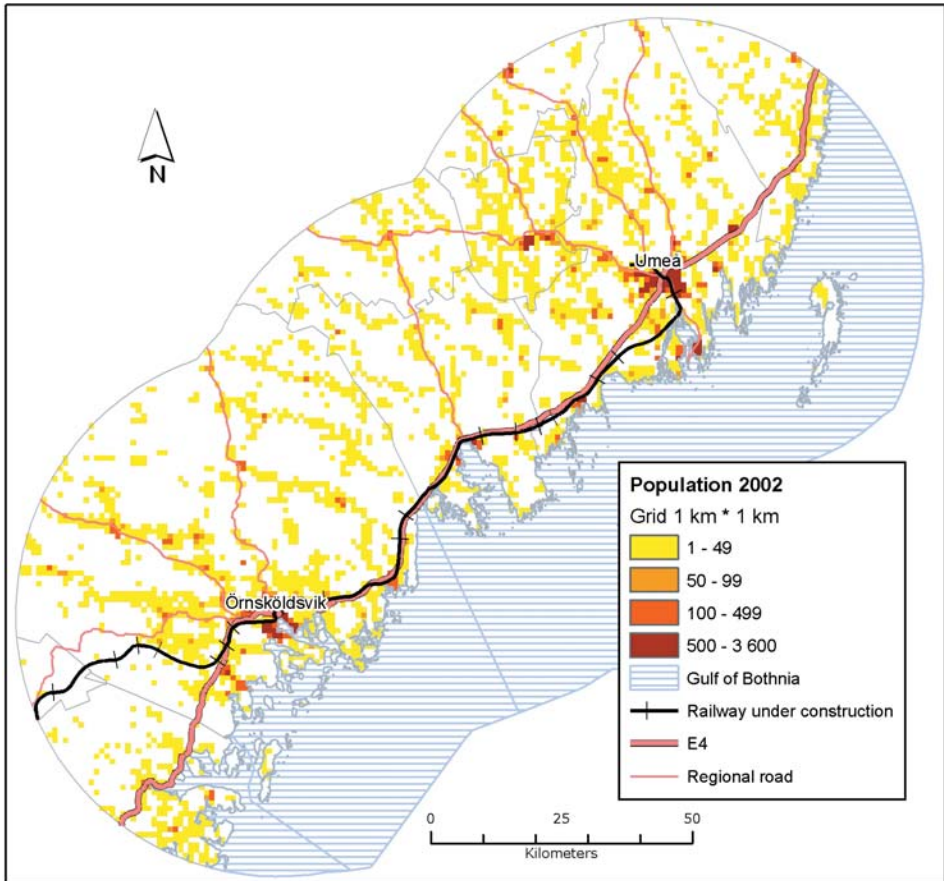


Figure 2a. Settlement structure – population in grid cells.

The settlement structure of the area is presented in Figure 2, which compares a traditional form of presentation on kilometre squares with the methodological alternative used in this study. The traditional map in Figure 2a illustrates the sparse settlement structure in the territory. The condensations on the micro level often have a corridor form along roads and rivers/lake systems. From this it may be stated that a corridor structure appears both on the macro and the micro level in the study area, with a stronger character of this type in the micro perspective. The map in Figure 2b illustrates how the local population potential shows

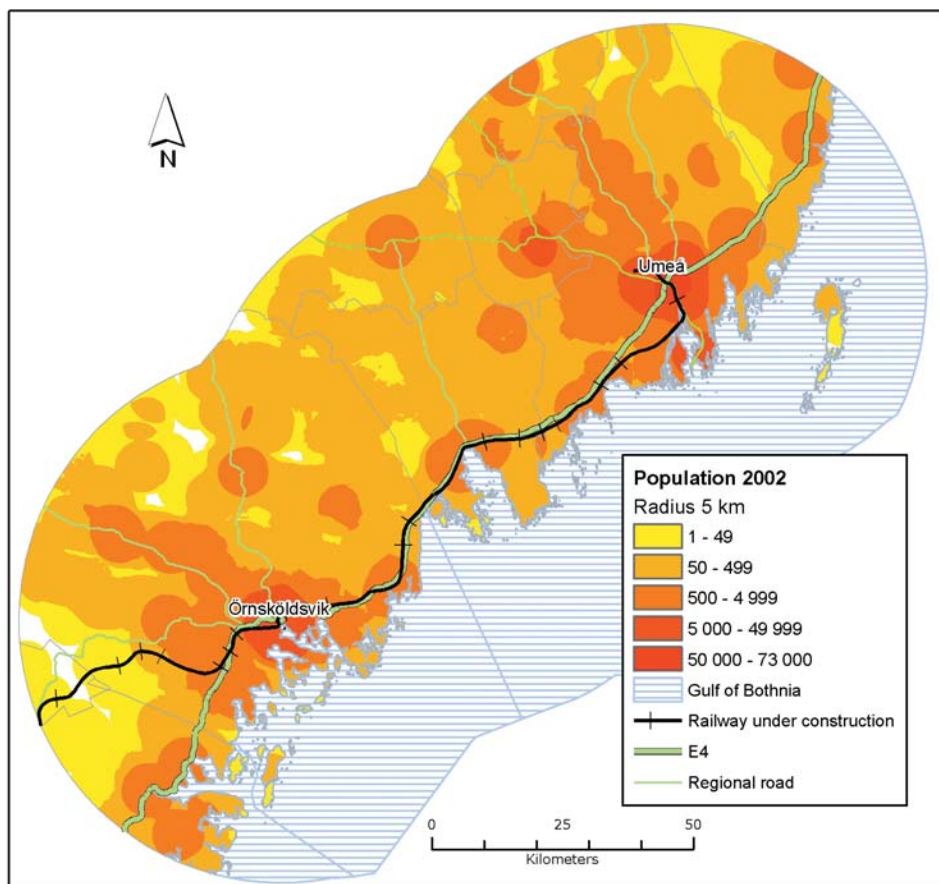


Figure 2b. Settlement structure – population within 5 km from each grid cell 100 x 100 m.

a great range across the area. This method also clearly illustrates the strong two-nodal orientation of settlements and how each main node has a few rather distinct urban-rural corridors in surroundings up to 30–40 kilometres of road distance.

A general tendency in Sweden is ageing of population. Between 2000 and 2004 the national average increased from 40.3 to 40.8 with a higher value for women compared with men. The study area is no exception from this. However, here we find both average age levels significantly below and above the national average, which in 2002 was 40.6 years of age. The youngest profile is among inhabitants in the university city of Umeå and in the surrounding rural area (Figure 3). However, the Figure also illustrates that in the most sparsely populated parts, and in peripheral locations from the main nodes, the average age is well above the national level. There is, nevertheless, a few peripheral areas where the average age is going down, although from a high level.

The differentiation of attractiveness between different types of settlements is illustrated in Figure 4. The map shows the relative change of the population

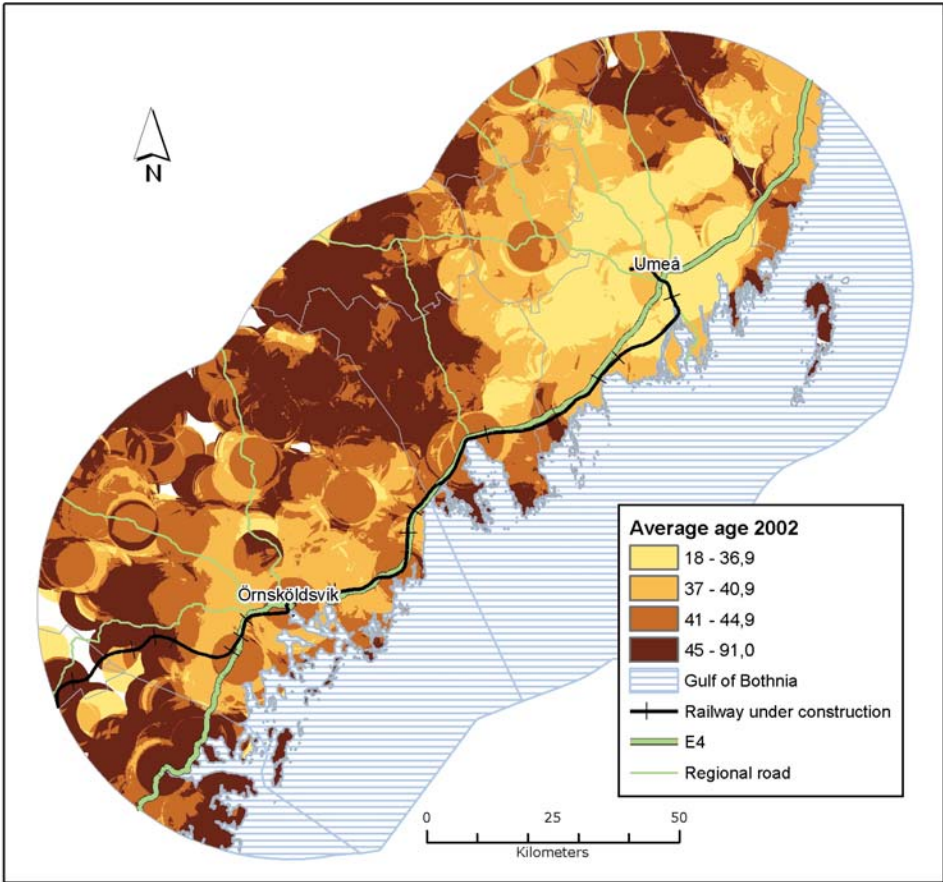


Figure 3. Average age among inhabitants 2002.

between 1990 and 2002 with the highest increase in both absolute and relative numbers mainly appearing in the edge parts of Umeå city and nearby coastal places. When interpreting the spatial pattern it must be considered that it to some extent reflects available housing capacity through new investments. Especially in the Umeå part of the study area this investment process has been rather strong over the studied period in the city, in traditional villages and in coastal locations. In the latter type of locations we find both second homes transformed into permanent dwellings and completely new settlements.

The eight sub zones have gone through quite different processes of population change (Figure 5a and 5b). A population increase has appeared in the city and the mainly rural coastal fringe areas of Umeå. Decrease is recorded for all sub zones of the Örnsköldsvik part of the area with the strongest decline in the two most remote zones from the city.

To further illustrate that these tendencies have appeared across a much longer time period and resulted in a variety of population compositions across the studied area the population pyramids for four of the eight sub zones are presented in

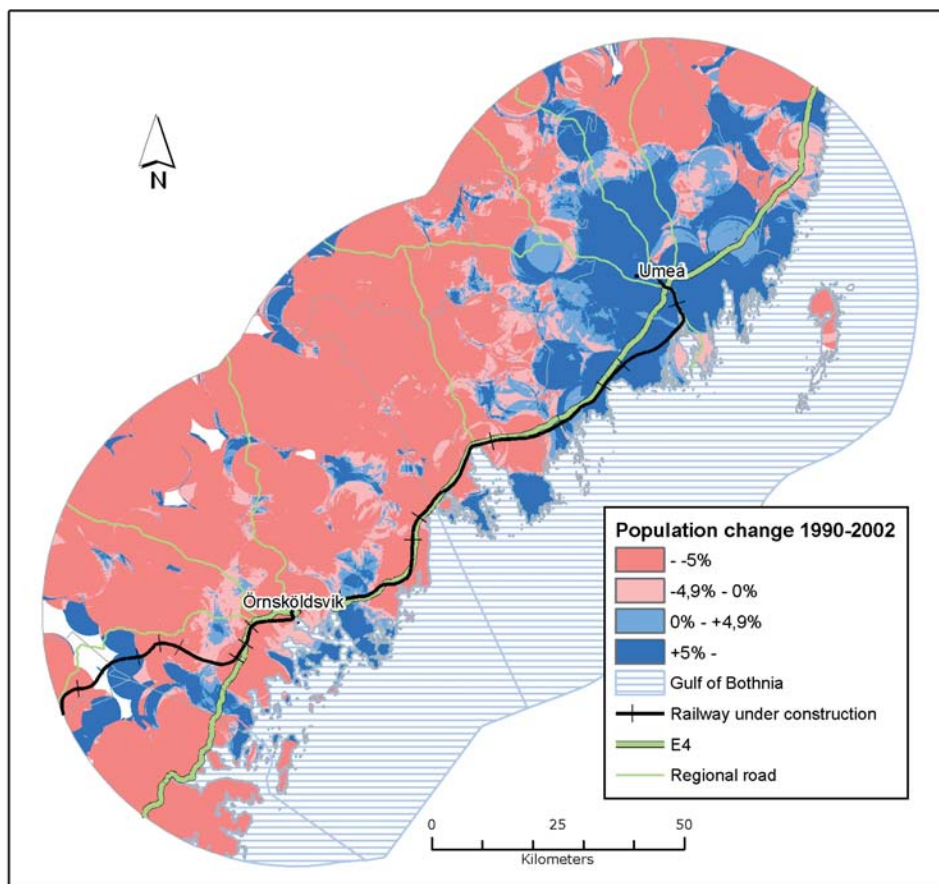


Figure 4. Relative population change 1990–2002.

Figure 6a–d. Clearly, the expanding sub zones have a much lower share of elderly people than the declining zones.

During the early 1990s the employment level in Sweden decreased substantially due to a deep economic recession. This dramatic change is also obvious in the study area where the number of jobs, as well as the share of the employed fell during the first half of the 1990s (Table 1). Since then there has been some recovery, although this is mainly true for Umeå and nearby surrounding areas, whereas in the Örnsköldsvik part of the study area job losses have been more enduring. The increase in the Umeå area is, however, also associated with steady population growth and especially in the urban zone the number of inhabitants of 20–64 years of age has increased much faster than the number of employed, thus creating a situation with increased employment figures but a lower proportion of employed. For Umeå city this can, at least partly, be explained by a rapidly growing number of students.

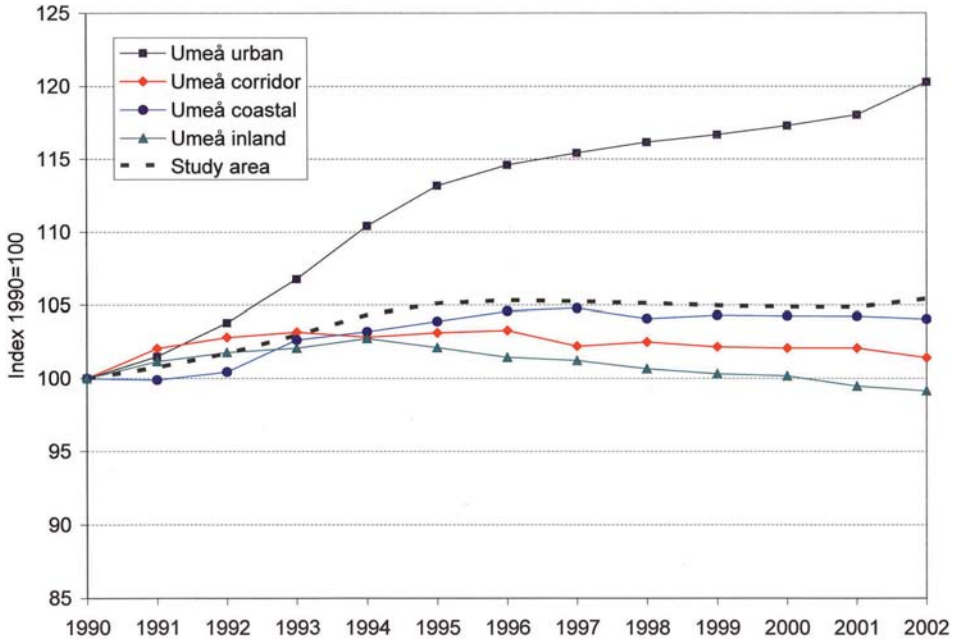


Figure 5a. Population change in the Umeå area 1990–2002. Indexed 1990=100.

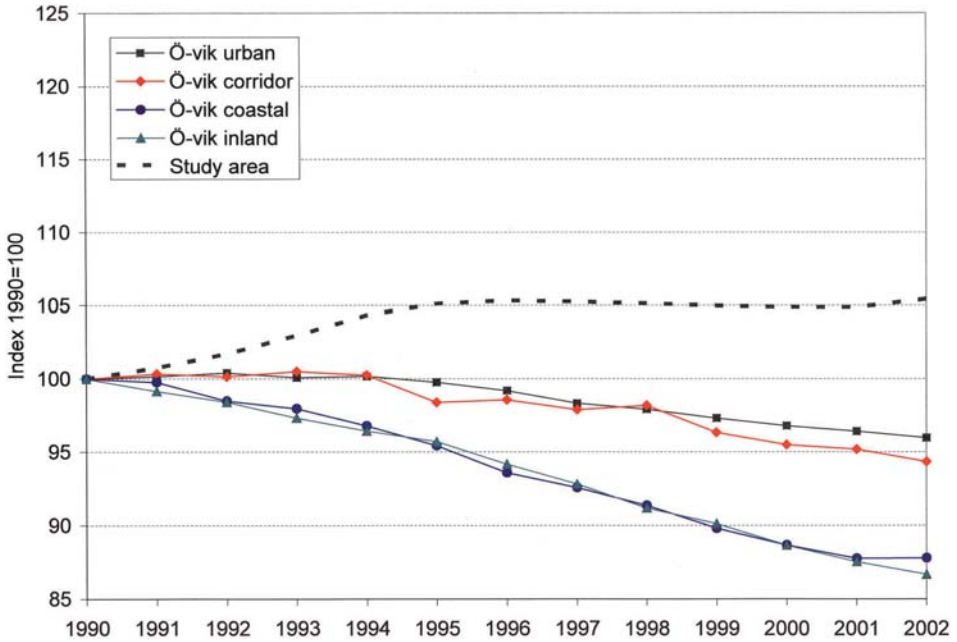


Figure 5b. Population change in the Örnsköldsvik area 1990–2002. Indexed 1990=100.

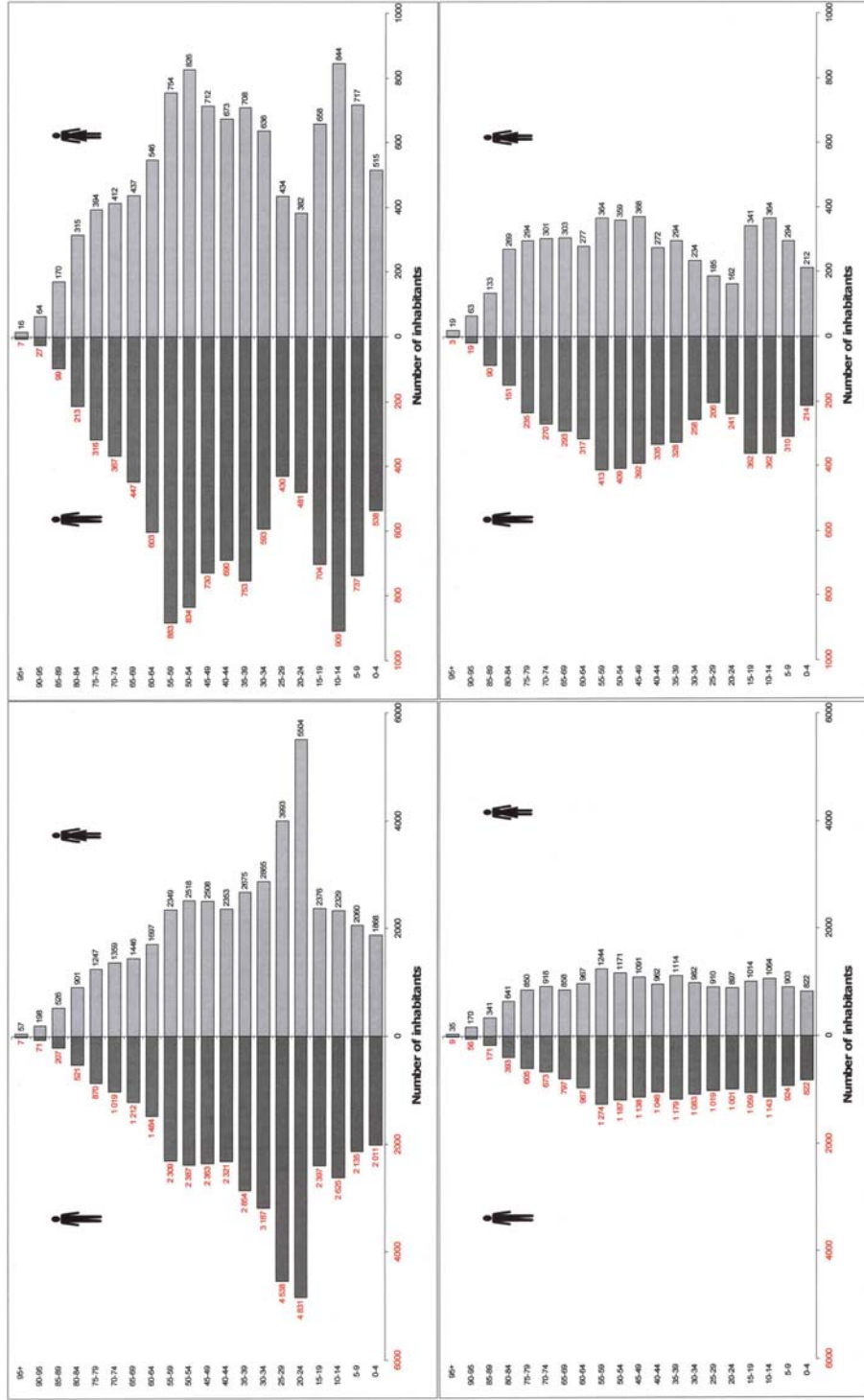
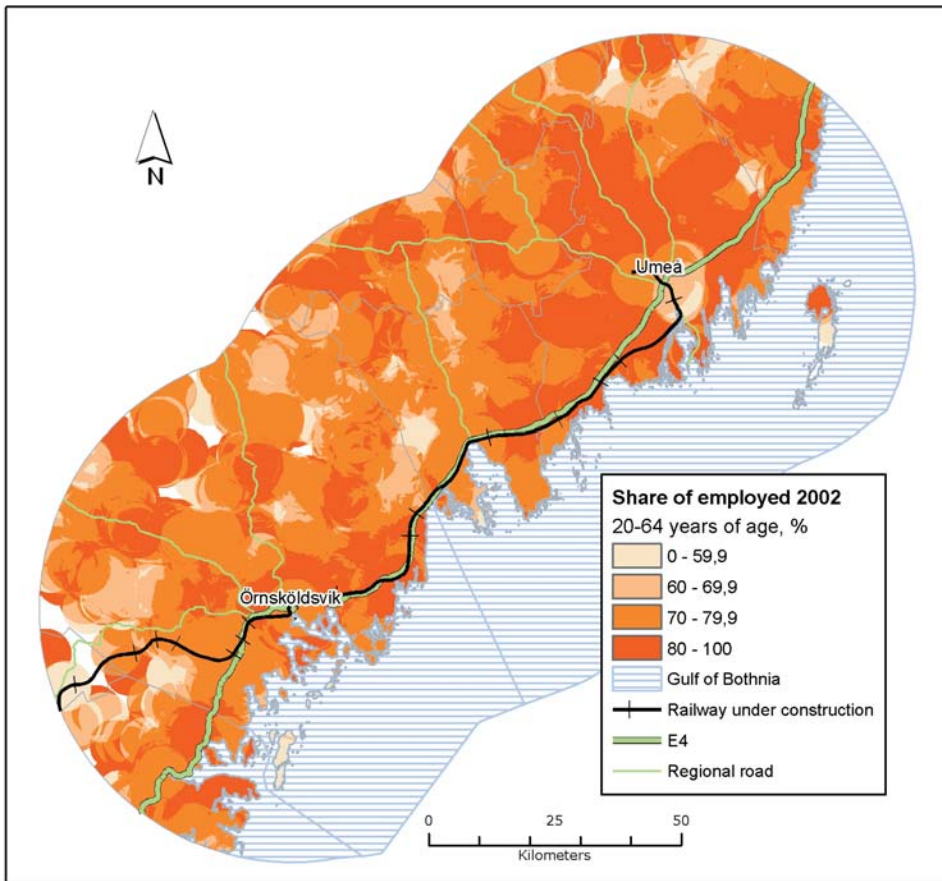


Figure 6a-d. Population pyramids for sub zones. Umeå urban (upper left), Örnsmölköldsvisk coastal (upper right), Örnsmölköldsvisk urban inland (lower left), Örnsmölköldsvisk inland (lower right).

Table 1. Changes in employment for the 20–64 years of age, 1990–2002

Sub zone	Employed			Change 1990–2002		Share of employed, %		
	1990	1994	2002	Absolute	Relative, %	1990	1994	2002
Umeå urban	35555	32864	37156	1601	4.5	84.0	69.3	70.5
Umeå coastal	9399	8818	9469	70	0.7	87.6	78.6	81.1
Umeå corridor	3368	3114	3221	-147	-4.4	88.4	79.5	82.6
Umeå inland	10362	9626	9901	-461	-4.4	85.4	77.2	80.6
Ö-vik urban	17435	14902	15168	-2267	-13.0	86.6	74.3	78.9
Ö-vik coastal	4702	3879	3891	-811	-17.2	82.3	71.4	77.9
Ö-vik corridor	2343	2072	2121	-222	-9.5	85.3	75.3	78.5
Ö-vik inland	5065	4299	4243	-822	-16.2	82.6	74.0	78.2
Total	88275	79628	85250	-3025	-3.4	85.1	73.0	75.4

Regarding the geographical variations within the study area Figure 7 shows that the employment level is higher outside the urban centres and with a relatively outstretched spatial pattern. This is especially pronounced in the Umeå part of

**Figure 7.** Share of employed people 20–64 years of age, 2002.

the area. Major explanations behind this is that a fairly big number of students are concentrated to the city of Umeå and that there are manifested preferences among a significant number of employed in the city for settling down in the nearby small towns and rural areas and commute to jobs.

An indicator for socio-economic strength to grasp future challenges is the competence level among the population. Figure 8 presents the share of population aged 20–64 with at least 3 years of higher education. The map reflects the strong impact of geographical proximity to a university. It also reflects that some higher educational programmes are decentralised to Örnsköldsvik from Umeå university and another university located just south of the studied area. The differences between these two cities and their nearby areas do not only depend on supply character of educational options with high accessibility but also on elaborated demand among public administrations and private companies for highly educated people. As Figure 9 illustrates, the share of highly educated has increased significantly across all sub zones between 1990 and 2002, which reflects a general tendency of restructuring towards knowledge oriented indus-

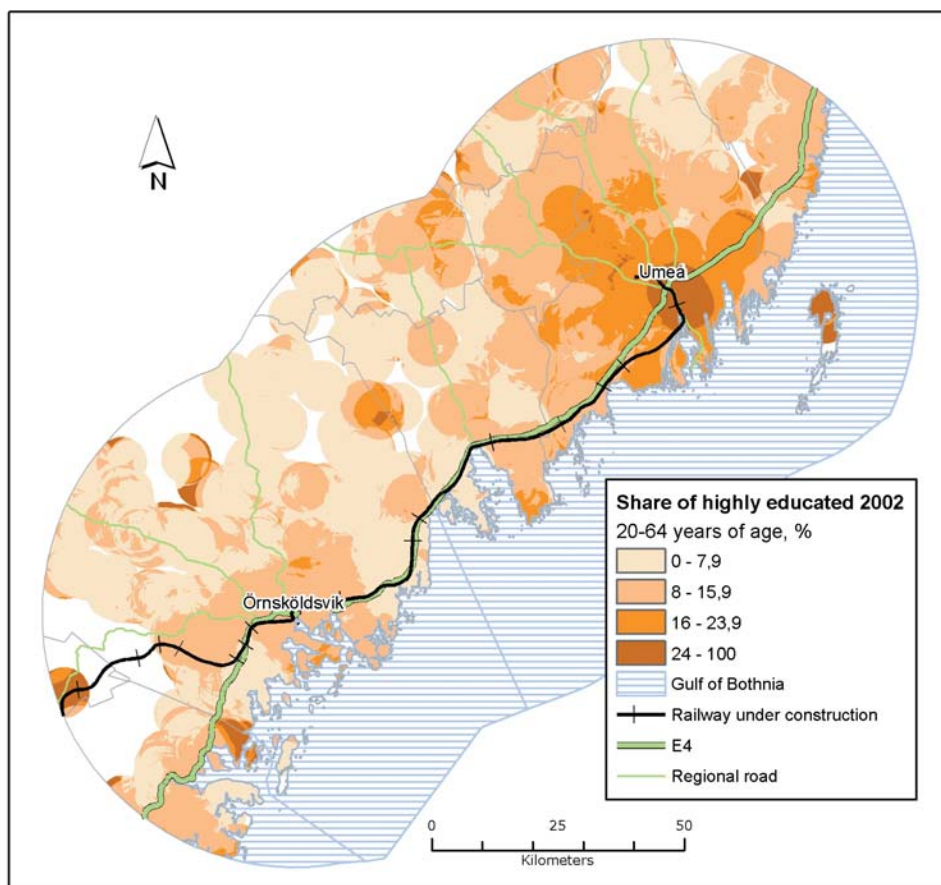


Figure 8. Share of highly educated people of 20–64 years of age, 2002.

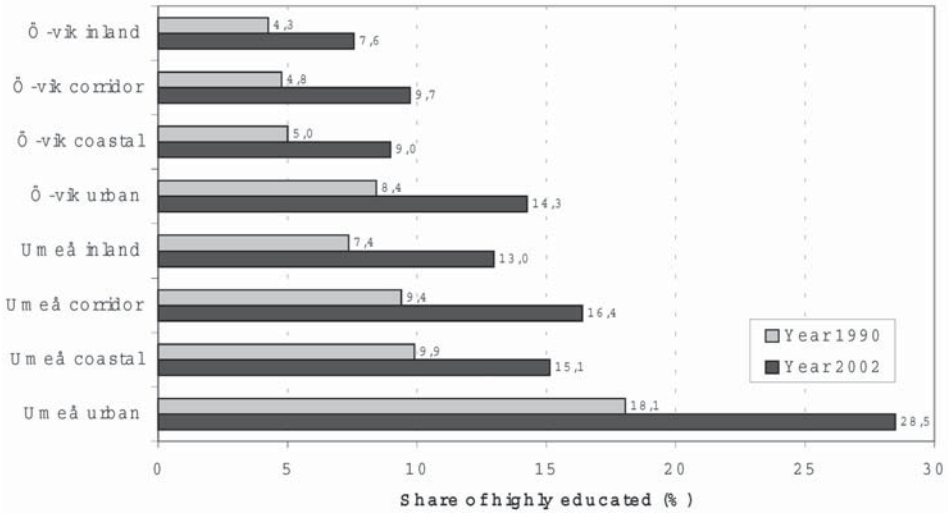


Figure 9. Changes in share of highly educated people in sub zones between 1990 and 2002.

tries. However, the gap between the Umeå related sub zones and the other has increased over the period.

Conclusions and future perspectives

The regional context studied here illustrates how urban and rural development may be a plus-sum process for both types of spatial settings under certain pre-conditions. We have found a strong correlation between city development and rural development in adjacent areas. It is obvious that the strong rural development in close surroundings to the city of Umeå can be explained by growth processes in the city leading to population growth also in places within convenient commuting distances. The growth includes both more employed people and a heavy expansion of students at the university. The general pattern of stagnation in the Örnsköldsvik part of the area seems primarily related to a heavy restructuring of the relatively big traditional industry sector due to increased global competition. This has initiated cumulative processes of decline in other sectors. There are examples of compensating new industries but their relative share is of a minor role.

The growth pattern in the Umeå part of the studied territory is well in accordance with the ideas about the role of the creative class launched by Florida (2002). The role of social capital behind the different development patterns across the studied area is more diffuse. Positive impacts on population figures are not only about quantity of social networking. There may be both positive and negative elements embedded – some leading to pull other to push impacts on people and economic activities.

A question mark for the future is how the new railway under construction will affect the strong growth tendency in both the city and the adjacent rural areas in

the Umeå part of the area and the decline in other parts. One may argue that as a railway with rapid trains will only have a few stops this will favour urban growth with a pearl band character across the studied area. A possible consequence is an accelerated decline in the rural areas with accessibility problems to these transport centres. The other extreme is that Umeå city will expand even more and develop into the main centre for the whole area. This alternative may have reinforced positive impacts also on rural areas close to Umeå.

Both these extreme alternatives may have a rather similar general character in terms of mixes of concentration and deconcentration. However, as discussed, the spatial outcomes on a micro level will differ significantly. This means that policy-making and its character may play an important role (Wiberg 1995, 2002). Key actors in this process are the political leadership in the municipalities and how they interact with each other, with private firms and with other public institutions. Strategic integrative planning across the local labour market divide and between urban and rural parts of the area will have limited practical value if the key actors do not accept and endorse the aims and goals that are launched. The great challenge in such an inclusive strategy is to combine an identification of resources and potentials within the area with a development of shared views on aims and opportunities. In a report from the Swedish Agency for Economic and Regional Growth (NUTEK, 2004) a broad set of measures is suggested to be taken in order to strengthen functional regions in general across Sweden. Elaboration of a stronger regional leadership, stimulation of entrepreneurship, a more highlighted role of cities as key nodes for a sustainable economic development, partnership across administrative levels and borders, integration of municipal physical planning and governmental planning for regional development are forwarded as major components. The policy-making dimension in such a capacity building process has a rather natural internal and external side (Hellström, et. al, 2001, Antikainen, Jurczek, Vartiainen, Wiberg, 2001). The internal part is about defining a shared view on objectives for the development and the role of a partnership in terms of legitimate power to make formal agreements and competence in strategic process guidance. The main issue is about exploring collaborative options across the area, which may strengthen and broaden the internal service capacity within various infrastructural fields with social, economic or cultural dimensions. The external part is about the relationship between the political governing and the democratic control. Politicians must delegate some decision-making to the partnership in exchange for capacity to carry through cross-border strategies. In other words, a new type of political governing must be launched to handle joint responsibilities across administrative borders. The external part is also about the relationship to sectoral interests of individual partners, which have to adjust to partnership strategies in order to achieve common objectives in an efficient way. The main issue is to identify various types of competitive conditions and options across the area for firms as well as for private persons and to market them.

Policy may matter, but the uncertainty about the future is very much about how policy-making meets preferences among various types of actors. Of critical importance is thus how different actors perceive a mix of the existing conditions and the character of policy making as an attractive and competitive milieu in terms of sustainable economic, social and cultural values and options.

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