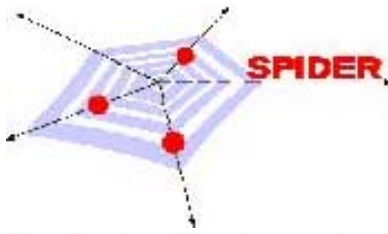


Regional Analysis Regierungsbezirk Düsseldorf

This report follows the evaluation model of regional competition and innovation systems presented by the Ståhle & Sotarauta (2003: "Regional Innovation Activities in Finland – Current Status, Significance and Developmental Challenges", published by the Finnish Parliament, Committee for the Future) which is applied by all regions involved in the project (some more information on this model is available on the SPIDER-Project Website <http://www.spider-project.net>, see the Basic Project Info in the section "Project Results"). The main aim of this report is to line out main features of the region, collect data which are important with reference to a developments towards regions of knowledge, and to show main trends and problems in the region. Thereby, the report should form the basis of the discussion of future perspectives and key challenges for the region as well as for finding new ways of meeting these challenges.

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The Region "Regierungsbezirk Düsseldorf", situated at the banks of Rhine and Ruhr rivers and enclosing the federal state capital Düsseldorf, is characterized by diversity and contrasts: from large cities to more rural areas, from new high-tech centres to remnants of the old industrial heartland "Ruhrgebiet". During the last decades, the region has undergone fundamental transformation, in the form of large scale structural change, away from the old industrial sectors (cp. Knapp/Schmidt 2002). In addition to this economic transformation process, the region has become a new centre for science and education as well as culture. Formally, the region is a governmental district ("Regierungsbezirk"), made up of several towns/cities and counties. It is part of the German federal state (Bundesland) NRW (North Rhine-Westphalia). In the German governmental system, a governmental district is an intermediary institution and supervisory authority, which exists to connect the smaller scale level of cities and counties to the larger scale affairs of the federal state. In addition, it is important to be aware that the region partly belongs to and is intensively connected with larger regional / metropolitan areas such as the Ruhrgebiet as well as with cross-border regions, for example with the Netherlands.

Human capital

Demographics

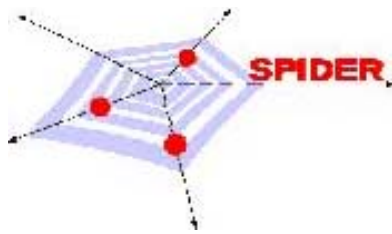
The Region is marked by a rapid demographic change, which is caused by the natural demographic factors (number of births, number of deaths) and now also supported by a tendency of the population to move into sub-urban and rural areas, some of which are outside of the region's borders. In the last years, the number of the total population has already begun to shrink (by 0.6% between 1995 and 2001), although the region has a quite strong incoming inflow of immigrants (12.5% of the population do not have German citizenship) (BBR 2003a: 314 pp). This also leads to a rise in the percentage of foreign population: their number rose by 46.6 % from 1987 to 1999 (Bezirksregierung Düsseldorf 2001).

What is problematic for the region is the age structure of the population. This, quite generally, mirrors the German development with a shrinking percentage of the younger and a rapidly growing number of the elder population parts, while the younger parts of the population make up a slightly smaller part in the region than in Germany as whole. But there are some striking exceptions hinting at a quicker demographic change: the number of children up to 5 years of age has diminished by 9.6% between 1995 and 2000 (in Germany only by 5.8%), as well as the number of those aged 25 to 30 years has diminished by 27.7% and now only makes up 6.1% of the overall population (BBR 2003a).

Labour force rate and Labour force

The number of people in the active labour force has risen by 3.9% from 1995 to 2001, and now amounts to 2230,300, meaning an activity rate of 53.9%, which is considerably lower than the German average of 57.5% (Eurostat 2003, CD-ROM data). In addition, the women's activity rate is quite low as well with 44.1% (49.3 is German average), and doesn't even remotely come close to the Lisbon and Stockholm goals of 57% for 2005 and 60% for 2010.

Though the unemployment rate has decreased in the last years, by 0.4% between 1998 and 2001, it has done so only very slightly and as slowly as the German average, but considerably slower than the European average. With 7.6% of the workforce unemployed, this is roughly the German average, but compared to the other western German regions, this is one of the highest rates and has been for a long time. A large part of the unemployed are long-time unemployed (51.8%, which is slightly higher than the German average and



considerably higher than the European average of 41.9%; BBR 2003a: pp 349). This is caused by and at the same time mirrors the long-time structural change the region is facing. The percentage of women in the group of the unemployed amounts to 42.1% and is lower than German and European average, as well as the percentage of those unemployed under 25 years of age is lower than German and European average (43.8 unemployed per 1000 inhabitants; 10% of all unemployed) and has diminished by 16.1% between 1998 and 2001 (BBR 2003a; Bezirksregierung Düsseldorf 2001). The labour market can, speaking quite generally, be characterised by a "mismatch of supply and demand concerning highly skilled employees", in spite of the high unemployment (Knapp/Schmitt 2002: 71).

Number of students

The number of students in the region has increased with some up and down swings from 98,156 in 1995 to 101,362 in 2003, the largest part of which study at Universities (76,293 in 2003; LDS 2004a). The number of students in North Rhine-Westphalia (including the region Regierungsbezirk Düsseldorf¹) is higher than German average, it amounts to 28.7 students per 1000 inhabitants (German average is 22.7), caused by the high density of higher education units and universities in the region. The percentage of women students is slightly lower than German average (amounting to 45.3%), while the percentage of students with a nationality other than German is very slightly higher (amounting to 11.1%) (BBR 2003a: 194 pp).

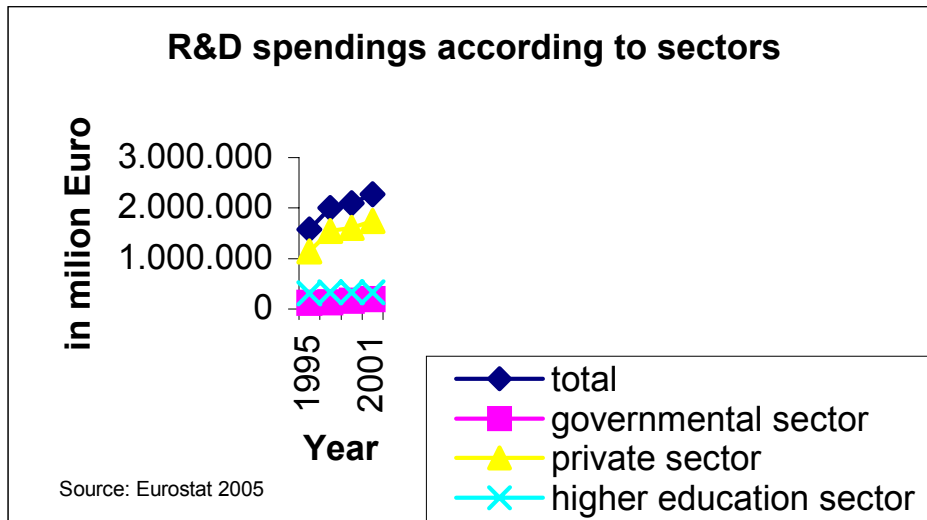
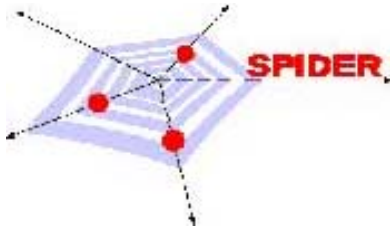
A large part of students in North Rhine-Westphalia is enrolled in technical subjects, such as mechanical engineering or electrical engineering (mechanical engineering counts the second largest number of (male) students, 23,827), after economics and business administration, with computer science and electrical engineering following on rank 4 and 5 (LDS 2004a). The number of (successful) tertiary education examinations had been rising steadily since the 1980s (32,884), and came to its peak in 1997 with 55,760 passed examinations. From then on, the number has been falling, to 44,539 in 2002 (LDS 2004a), following the trend in Germany which shows the same curve. Another lowering of this number can be expected for the statistics of 2004, as a new financing scheme for the tertiary education sector was enforced in spring, which puts more responsibility and financial stress on the individual student.

Innovativeness

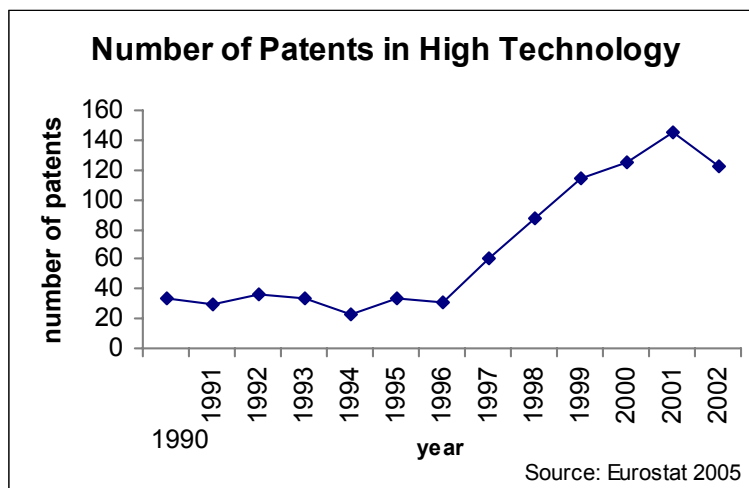
There has been a remarkable recent increase in *R&D spendings*: From 1995 to 1999 spendings increased by approximately 30% (1995: 1574,969 million Euro, 1999: 2098,81 Million Euro). This increase has largely been due to investments from the private sector, but governmental sector and higher education also contributed (Eurostat New Cronos 2004). However, the region is still underperforming with respect to research and development. In proportion to the GDP, which has been 142,196 million (LDS 2004a), R&D expenditures still amounted to only 1.5% in 1999, the German average being 2.4%.

Total *employment figures in R&D* have remained approximately the same over the period 1992 to 2002 (Eurostat 2005). There seems to be a slight downwards tendency in R&D employment in higher education and government institutions, and at the same time a slight upwards tendency in R&D development in the industrial sector. Figures are hard to evaluate, however, as they are based on estimates.

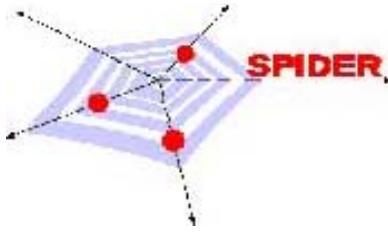
¹ When data for the Region Regierungsbezirk Düsseldorf is not available, we refer to the next level of data instead. This is mostly the federal state "Nordrhein-Westfalen" (North Rhine-Westphalia, or NRW, which includes the region Regierungsbezirk Düsseldorf).



Furthermore, *human resources in science and technology* have been increasing in the period from 1995 to 2001. Significant upwards developments are visible in top technology processing industries, chemistry, and services requiring in-depth knowledge (Eurostat 2005). The number of *patents* annually applied for has been increasing steadily in the past decade (1992: 1084; 2002: 1662, Eurostat 2005). The number of *patents in high technology* has approximately quadrupled in the same period (1992: 33; 2002: 122, Eurostat 2005), a disproportionate increase indicating a shift towards high technology research.



To sum up, there are indicators for positive recent developments, but weaknesses in the region's innovativeness remain. The available figures suggest that research and development carried out in the region is cutting edge in an increasing number of cases, supporting the view that overall progress in the transition towards a more knowledge-based region is being made. Still, the region's R&D expenses do not amount to a percentage of the GDP in line with, e.g., the Lisbon objectives, and they are considerably lower than the German average.



Concentration

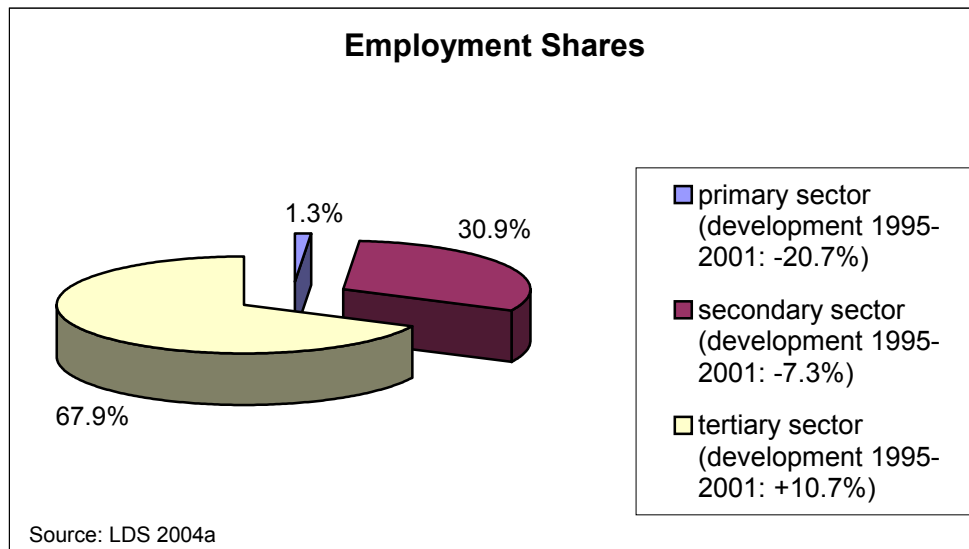
Concentration of population

The population density in this region is exceptionally high, due to the large cities of the region. The population density is more than four times higher than German average and more than 7 times higher than European average; it amounts to 993,2 inhabitants per square kilometre (BBR 2003a: 320 pp).

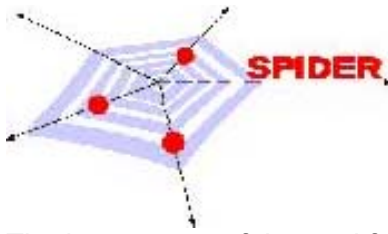
Furthermore, the workforce density is exceptionally high (421.6 employees per square kilometre, compared to 51.2 European average and 102.3 German average), and 21% of the workforce work part-time (BBR 2003a: 340). However, it has to be kept in mind that density levels vary within the region, as of course population density is much higher within the cities. In relation to these figures, it also should be noted that the trend of suburbanisation (the population moving out of the cities and into more sparsely populated suburban areas) is continuing and leads to severe problems, as some districts within cities are becoming depopulated while at the same time free land is becoming more and more sparse.

Employment shares

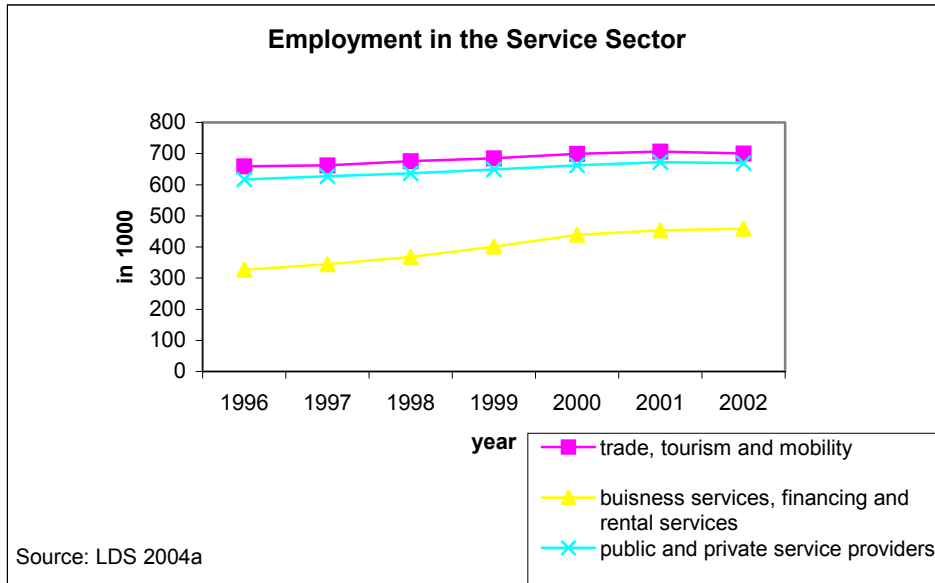
The percentage of those working in the primary sector is now on a low 1.3% (and has diminished by 20.7% from 1995 to 2001); similarly, the number of those employed in the secondary sector has lowered by 7.3% from 1995 to 2001 and now amounts to 30.9% of the overall active workforce (BBR 2003a: 340²). The percentage of those employed in the tertiary sector has risen in the same time by 10.7%, and now makes 67.9% of the workforce, which is slightly higher than the German average (64.6). These changes in the distribution of the workforce on the three sectors show quite clearly the change the region has undergone in the last years and is still undergoing – a sectoral change which has in many other regions of Germany as well as in Europe taken place much earlier.



² All data quoted from this source refers to the year 2001 as the last year of data given, unless otherwise stated. This source was used, although sometimes newer data is available, because it offers the advantage of coming from the Eurostat Regio database, thereby enabling a comparison to other regions as well as Europe and Germany as a whole, which, with the other sources, was not possible.



The largest part of the workforce is now employed in the services sector (a total of 1828,500 employees and 73% of the workforce³). In the services sector, the area of "trade, tourism and mobility" holds the largest part of the services sector workforce (38%), with public and private service providers coming second (37%), and "business services, financing and rental services" coming third (25%). However, the number of employees in this last area of business services has been rising the most rapidly, from 327,500 in 1996 to 458,800 in 2002, while the first area's number of employees increased more slowly (from 659,500 to 700,600), as well as the number in public and private service providers (617,400 to 669,200).



It is obvious that the traditional "old industries" (mining, steel works) etc. have long been on the decline and are still struggling, now in the situation of harder competition with low wage countries (cp. Knapp/Schmitt 2002). It has also become obvious that branches dependent on the traditional "old industries" are in consequence struggling as well (for example transport and chemicals), as shown in decreasing numbers of employees (Knapp/Schmitt 2002).

Infrastructure

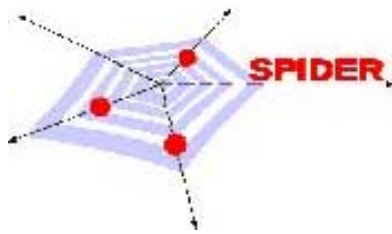
Transportation

The density of the *motorway network* in the region (motorway kilometers to 100 square kilometers) is 11.82. In the way typical for urban agglomerations, the density of motorways in the urban and suburban areas surrounding Düsseldorf itself is much higher (Eurostat 2003: 103). The number of *private cars* per 10 inhabitants is 5.14; this is slightly lower than in most other German NUTS 2 regions (Eurostat 2003: 105).

According to statistical calculations, the region will be facing a – quite dramatic – *further increase of road traffic* in the next couple of years: Governmental projections for the whole of North Rhine-Westphalia predict a 26% growth rate from 1995 to 2010, predominantly due to an increase in goods traffic (Bezirksregierung Düsseldorf 2002: 23).

The *region's international airport* in Düsseldorf is the 18th largest airport in Europe, with 16 million air passengers being transported per year (Bezirksregierung Düsseldorf 2002: 19). There are regular connections to 172 worldwide destinations. 72,851 tons of air freight are

³ All data in this paragraph from LDS 2004a



transported each year (Landeshauptstadt Düsseldorf 2002: C5). In addition, there is a smaller airport in Mönchengladbach, which has shown growing numbers of passengers (114,502 in the year 2002 and 191,642 in 2003; see Airport Mönchengladbach 2004). Amsterdam Schiphol (37 million passengers per year) and Köln/Bonn (6 million passengers per year) are other large airports in close vicinity of the region (Bezirksregierung Düsseldorf 2002: 19).

The region has several *inland ports*, located along the Rhine river and its canals in the cities of Duisburg, Essen, Mülheim, Krefeld, Düsseldorf, and Neuss. The most important ones of these are the port groups maintained by the Duisburger Hafen AG (Duisburg, Ruhrort, Hochfeld, and the logistics centre Logport).

Efforts are being made to deepen *collaboration in the field of transportation* across national boundaries. A "euregional" centre for air traffic, logistics, and trade ("Euregionales Zentrum für Luftverkehr, Logistik und Gewerbe") in the Netherlands is being planned, from which the Düsseldorf governmental district would also benefit (Bezirksregierung Düsseldorf 2002: 20). The Duisburger Hafen AG is currently establishing closer ties with the sea ports of Antwerpen, Rotterdam and Amsterdam (Bezirksregierung Düsseldorf 2002: 20).

Local and regional planning

All *regional development activities* in the Düsseldorf governmental district are based on the regional development plan GEP'99 ("Gebietsentwicklungsplan") enforced in 1999. GEP'99 is a revised version of the old development plan, which was enforced in 1986 (Bezirksregierung Düsseldorf 2000: I). In the process of the revision, a new regional development policy (Regionale Entwicklungspolitik) was initiated, comprising five parts (Bezirksregierung Düsseldorf 2000: IV):

1. Ausgangssituation (initial situation)
2. Leitbilder (role models)
3. Entwicklungsperspektiven (perspectives for development)
4. Gebietsentwicklungsplan (the development plan itself)
5. Regionale Projekte (regional projects)

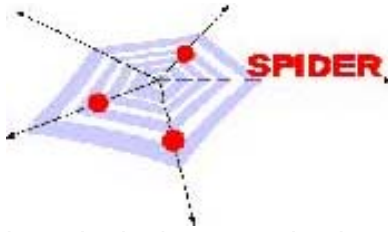
GEP'99 is the legislative basis for concrete projects, on a local as well as on a regional level (Bezirksregierung Düsseldorf 2000: IV). It also sets a number of goals for the development of infrastructure and regional planning in general (Bezirksregierung Düsseldorf 2000: V). Among others, the following goals are formulated:⁴

1. To foster a resource-sensitive und environmentally sustainable development of housing,
2. To secure a future-oriented, regionally meaningful infrastructure
3. To provide possibilities for inter-communal collaboration concerning industrial and housing estates,
4. To strengthen rail transportation of individuals and goods through the provision of adequate connections and to offer bases for goods traffic centres and goods traffic distribution centres, in order to restrict or reduce car and truck traffic,
5. To maintain and strengthen networks with neighbouring provincial and district governments.

Communication

In North Rhine-Westphalia, equipment of private households with internet access has risen from 9.6 to 47.1% from 1998 to 2003. Equipment with ISDN has risen from 5.8 to 24.9%, equipment with mobile phones has risen from 12.2 to 76.3%, while equipment with home-

⁴ We selected the goals most relevant for the present section. Translations try to capture the meaning rather than following the original word by word.



based telephone service has sunk from 97.9% to 94.5%. Equipment with fax has risen from 38.9 to 46.7% (LDS 2004c).

Energy supply / supply of natural resources and raw materials / Fares of electricity and water

Native energy sources are rock salt and brown coal. While in Germany as a whole gross power generation is based on brown coal, in the federal state NRW the percentage amounts to 50% (MVEL 2005). The federal state's government promotes the development of alternative energy recovery in several programs, and has invested heavily in renewable energy. There are no nuclear power plants in NRW.

In addition, North Rhine-Westphalia is high in fossil fuels. A large percentage of the German coal output comes from in NRW (50% of the whole brown coal output and 30% of the anthracite output). Brown coal deposits are situated between the cities Mönchengladbach, Cologne and Aachen, with the annual output comprising 100 mio. tons of brown coal. The mine Borth, for example, produces yearly about two mill. tons of rock salt (MVEL 2005). Brown coal and rock salt are the main energy sources for NRW's power generation. The building of modern rock salt generating plants is planned for several locations in NRW, promising an efficiency factor from 45 to 48%. Aim of these efforts is the CO₂-free generating plant. Fees of electricity and water have been rising during the last years, but on a scale that seems to be on a level with German average prices.

Firms and companies

Basic economic structure

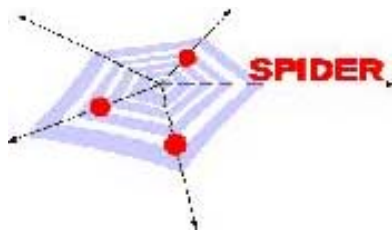
The basic economic structure of the Düsseldorf governmental district shows an orientation towards services. The industrial sector is experiencing a downwards trend, the primary sector being relatively unimportant.

The predominant share of *gross value added* (at production prices) is gained in the tertiary sector, which made for 74.6% of total gross value added in 2002. The primary sector had a share of 0.5%, the secondary sector of 24.9% (LDS 2004a). From 1996 to 2002, gross value added of industrial and agricultural sectors has been decreasing (by 5.6% and 0.1%, respectively); gross value added of services has been increasing correspondingly (LDS 2004a).

The region has seen a steep *increase in export orientation* in the last decade: Export share as a percentage of turnover has been 30.4% in 1995, risen to 37.9% in 2000, and amounted to 40.7% in 2003 (LDS 2004b).

As for *knowledge intensiveness* of the region's economy, the following observations can be made (for the following, compare Eurostat 2003: 80-85):

- Employment in high- and medium-high-tech manufacturing sectors as percentage of total employment amounts to 9.34%. This is lower than in the majority of German NUTS 2 regions, but approx. as high as in most regions in the north of Germany (7.5-11%).
- Employment in high-tech service sectors as percentage of total employment amounts to 3.13%. This is approximately as high as in most other German regions (3 to 4%); the German regions having a significantly higher percentage are scarce.
- Employment in knowledge-intensive services as percentage of total employment amounts to 30.58%. In most German regions, percentages range between 30 and 40%; only the Hamburg and Berlin regions show percentages higher than 40%.



Specific lines of business

Lines of business that are important for the governmental district (and also for the whole of the federal state) – either by their size or by their performance and expected future development – include business services, energy supply, logistics, bio technology, and mobile communication technology.

The capital of the district government, Düsseldorf, is the most important centre for *business services* in North Rhine-Westphalia. It "leads in producer services, such as auditing, legal advice and administration" (Knapp/Schmitt 2002: 68). Düsseldorf also is one of the leading German cities in advertising. The three largest advertising agencies in Germany (BBDO, Grey, Publicis) have their German headquarters in Düsseldorf (Landeshauptstadt Düsseldorf: C18). The only stock exchange in North Rhine-Westphalia is also located in Düsseldorf.

Major energy suppliers have their headquarters in Essen. RWE and RAG are the major companies in this category, RWE being one of the world's largest energy suppliers. The energy supplier E.on's subsidiary company E.on Ruhrgas AG is also located in Essen. E.on's corporate center is in Düsseldorf.

Logistics plays a major role as a service industry in North Rhine-Westphalia (Bezirksregierung Düsseldorf 2002: 9). Around 200,000 people are employed in logistics proper, a further 400,000 in logistics-related positions in industry and trade (MWMTV 2000: 5). There has been an increase in employment figures in the decade between 1988 and 1998 (MWMTV 2000: 6). Within the Düsseldorf governmental district, this line of business is especially important in Duisburg (Regierungsbezirk Düsseldorf 2002: 9).

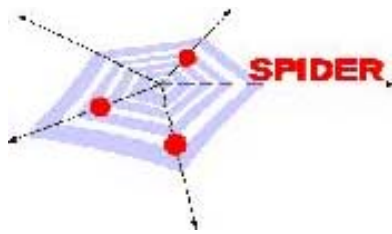
Bio technology/life science has been a rapidly rising line of business in the Düsseldorf governmental district in recent years. In 2002, 67 of the 226 bio tech companies in North Rhine-Westphalia were based in the region (Bezirksregierung Düsseldorf 2002: 9). 26 companies were newly established between 2000 and 2003 (Bezirksregierung Düsseldorf 2003). Bio technology companies in the Regierungsbezirk are networked to the "Bio River Rhine" region including the areas surrounding Düsseldorf, Köln, Aachen, Jülich, and Bonn (Landeshauptstadt Düsseldorf 2003: 4). 380 life science research groups are based in this region, making it the most important life science cluster in Germany (Landeshauptstadt Düsseldorf 2003: 4). Fostering the region's competitiveness in life sciences is the objective of a number of networks (see section "Networks of Developers").

The capital of the Land, Düsseldorf, is also one of the German bases for *mobile communications technology and services*. Most leading companies either have their German headquarters or branches in Düsseldorf. Companies include Vodafone, Ericsson, Deutsche Telekom, Nokia, and Siemens (Landeshauptstadt Düsseldorf 2002: C11).

Economic situation

As at the beginning of 2004, the economic situation at least in part of the region was showing a weak upwards trend (IHK Düsseldorf 2004: 3).⁵ According to the local chambers of trade and commerce, this upward trend was nevertheless too weak to be satisfying (IHK Düsseldorf 2004: 3). Only 12% of companies judged their own business situation as "good", while 16% of businesses judged their own business situation as "bad". Willingness to invest is low: 40% of businesses invested less than in the previous year, only 18% invested more (IHK Düsseldorf 2004: 8). In line with the growing export orientation of the region's economy, positive influences on the economic situation are hitherto expected only from exports (IHK

⁵ The figures quoted in this subsection stem from a survey jointly conducted by two chambers of trade and commerce in 2003: The Industrie- und Handelskammer Mittlerer Niederrhein Krefeld Mönchengladbach Neuss and the Industrie- und Handelskammer zu Düsseldorf (IHK Düsseldorf 2004). Their scope is thus limited to the areas covered by the respective chambers.



Düsseldorf 2004: 5). There is a growing tendency to invest in foreign countries, mainly with the goal of building up production sites abroad (IHK Düsseldorf 2004: 8). Production is mainly shifting to Middle and Eastern Europe (57%), but also to countries within the European Union (33%) and to Asia (31%, IHK Düsseldorf 2004: 8). As in recent years, the majority of businesses is still cutting back employment (IHK Düsseldorf 2004: 10). A significant number of jobs is presently created only in services and, to some extent, also in wholesale trade (IHK 2004: 10).

However, the diversity of the region is also reflected in its economic development, as economic trends in the region differ extremely when looking at different cities or communities of the region. For example, cities belonging to the former old industry center Ruhrgebiet, like Duisburg, have been struggling hard, while other parts of the region, such as Düsseldorf or Essen, have performed rather or even especially well (cp. Knapp/Schmitt 2002).

Institutions

The governmental district has a high density of higher education and research institutions (there are 45 universities and polytechnics in the Rhein-Ruhr region, Landeshauptstadt Düsseldorf: C14). Despite this fact, the region does not have a longstanding academic tradition. This is particularly true for the Ruhr part of the governmental district, where the first higher education institutions were not founded earlier than 1975 (Guth 2002: 2). It is also true, however, for the Heinrich-Heine-Universität Düsseldorf, which evolved out of a medicine academy and became a proper university only in 1965 (Uni Düsseldorf 2004). This lack of history may partly be responsible for the fact that universities and higher education in the governmental district in general do not rank among the top institutions in public opinion, which tends to favour more traditional higher education institutions.

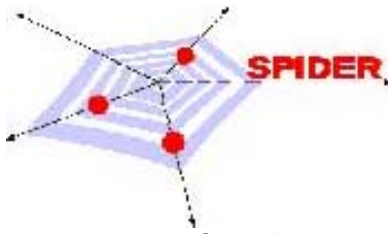
The two main *universities* in the region are the University Duisburg-Essen and the Heinrich-Heine-University Düsseldorf. A third university is the considerably smaller "Bergische Universität Wuppertal". There are also two *polytechnics*: The Fachhochschule Düsseldorf and the Fachhochschule Krefeld.

There are eleven *institutes of the Max Planck society* in North Rhine-Westphalia, two of which are located in Mülheim an der Ruhr: The Max-Planck-Institut für bioanorganische Chemie (bioinorganic chemistry), and the Max-Planck-Institut für Kohlenforschung (coal research). The two institutes employ a total number of about 600 researchers and support staff (MPI 2004).

Two of the seven North Rhine-Westphalian *institutes of the Fraunhofer society* are also located in the Regierungsbezirk: The Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT in Oberhausen, and the Fraunhofer Institute for Microelectronic Circuits and Systems IMS in Duisburg.

Other research units include the *Deutsches Textilforschungszentrum* (German centre for research in textiles) at the University Duisburg-Essen, the *Deutsches Diabetes-Forschungsinstitut* (German research institute for research in diabetes) in Düsseldorf, the *Biologisch-medizinisches Forschungszentrum* (research centre for biology and medicine) and the *Medizinisches Institut für Umwelthygiene* (medical institute for environmental hygiene), both at the Heinrich-Heine-Universität Düsseldorf.

The *Science Centre North Rhine-Westphalia*, situated in the city of Düsseldorf, consists of the umbrella organization of the same name, and three further institutes: the *Wuppertal Institute for Climate, Environment, Energy*, the *Institute for Culture Studies* in Essen, and the *Institute of Work and Technology* in Gelsenkirchen. While the three institutes devote themselves to interdisciplinary research in their respective fields, the Science Centre



considers itself an "international forum for future-oriented questions at the crossroads of science, politics, economy, and culture" (Wissenschaftszentrum 2004).

The region also has a number of *technology centres*. The *Life Science Center Düsseldorf* cooperates with the Heinrich Heine University Düsseldorf, the City of Düsseldorf, and a network of partners from the industry, to offer innovative companies assistance in the realization and further development of their ideas (www.lsc-dus.de). The Life Science center Düsseldorf is networked to 17 further biotechnology centres in the BioRiver Rhein region (see section "Networks of Developers"). The Bochum-based *Technologiezentrum Ruhr* (technology centre Ruhr) offers support for technology-oriented start-ups (Technologiezentrum 2004). The *Kompetenz Centrum Logistik* (competence centre for logistics) in Duisburg is a joint project of the Niederrheinische Industrie- und Handelskammer Duisburg (the local chamber of trade and commerce), and the Bildungszentrum der Wirtschaft (economic centre for further education) am Niederrhein, funded by the Land. It offers consulting, training, and general support for logistics businesses (Kompetenz Centrum Logistik 2004).

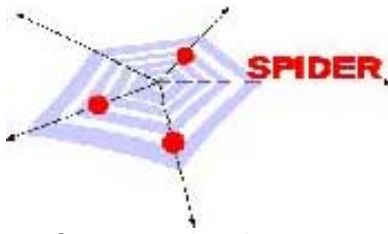
The quality of the environment

To paint a coherent picture of the region in terms of the living environment it offers is quite difficult, due to the different types of cities and rural areas it embraces. As a whole, the trends in *land usage* mirror the development in Germany as a whole. The region's settlement space has increased in the last years (from 20.8% 1988 to 22.4% in 1999), the space for traffic infrastructure has increased from 8.0 auf 8.2%, while free space has decreased from 71.2 to 69.3%. In addition, the region's building development seems to be influenced by the population's tendency live further away from the cities and move to suburban areas; the region shows a lower percentage of newly built one- and two-family-houses than NRW (41.5% in Regierungsbezirk Düsseldorf, 46.8% in NRW; all data in this paragraph from Bezirksregierung Düsseldorf 2001).

Quality of living

Generally speaking, living conditions in the region as a whole can be said to offer good standards, witness the following points:

- The development of the consumer price index for living to 2003 has increased by 11.6% from 1995 to 2003, which meant a steeper increase than for the German average consumer price index in 2003 (which rose by 11% from 1995 to 2003; Landeshauptstadt Düsseldorf 2004). Living costs differ and are higher (f.e. concerning rent) in the city of Düsseldorf than in the rest of the region. Here, living in a large city such as Essen is much more affordable than f. e. living in Munich or Hamburg.
- Efforts are being made to improve the quality of the *built environment*. In particular, in the Ruhrgebiet several former industrial plants have been converted to institutions that are utilized in diverse manners: as exhibition spaces, theatre stages, recreation spaces, or business estates. The Landschaftspark Duisburg-Nord (landscape park Duisburg-Nord) and the Zeche Zollverein in Essen are the largest industrial areas in the federal district, that have been, or are still being converted in this way . These developments should be seen in the larger context of efforts to cope with the rather fragmented urban and suburban structure of the Ruhr region. The capital of the federal district, Düsseldorf itself, has a quite different heritage, being closer to the role model of the dense and compact European city. Efforts are undertaken to revitalize this model. The initiative "PLATZDA",



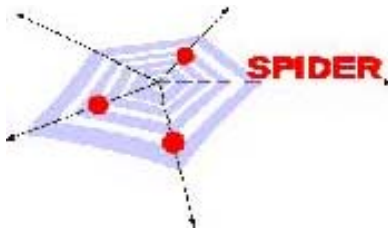
for example, that was started in 2002, aims at giving existing public squares a more attractive shape and establishing new ones (Stadtplanungsamt 2004).

- North Rhine-Westfalia has a strong tradition in *all-day schooling*, which has recently become one of the key elements of the German school education policy. In the past, all-day schooling was usually conducted in secondary education only, in the frame of the so-called Gesamtschulen (comprehensive schools integrating grammar / high school) and schools leading to intermediate qualifications (Realschule/Hauptschule). 217 such schools exist in North Rhine-Westfalia, 210 of which offer all-day schooling (Schulministerium 2004a). Recently, new concepts in all-day schooling have led to the implementation of programmes for primary education as well. As at the beginning of 2004, there were 235 all-day schools in primary education. The number will have grown to 703 in 2005, making up for a fifth of all primary schools in the federal state (Schulministerium 2004b).
- *Day care facilities* for children in North Rhine-Westfalia have been extended. In the period from 1991 to 2000, 148,000 new places in day nurseries have been created. In 2000, there have been 599,310 places. Kindergartens offered 545,245 places in 2000, 120,010 more than in 1991 (Schulministerium 2004c).
- *Health care supply* in North Rhine-Westphalia is on a high level (the number of hospital beds per 10,000 inhabitants is with a number of 75.5 beds among the highest in Germany; Statistisches Bundesamt 2002). The number of institutions for prevention and rehabilitation in NRW has sunk slightly in the last year, from 144 to 139 (LDS 2004a). In general, the density of health care institutions is quite high, as a consequence of the large percentage of the population in the higher age groups and the new centres in medicine technology in the area.
- In the last decade especially, the region has also sharpened its profile as a *cultural region*, supporting existing initiatives and institutions as well as especially events and special projects. Examples for this are the "Nacht der Industriekultur" (Night of Industry Culture), a yearly weekend event which takes place on old and recently converted industrial areas, connecting them with special mobility services, or the "Ruhrtriennale", a large cultural festival with international recognition. In general, the region features a large number of theatres, cinemas, museums and other cultural institutions due to the many large cities belonging to the region.

On the other hand, while new projects raising a lot of attention (and media coverage) seem to be abounding, some basic cultural and social services had to be reduced in the last years, due to the communities' financial problems. This concerns basic facilities such as swimming pools and branches of public libraries, which had to be closed in some instances or which had to reduce the service they supply.

Relationship between people and their surroundings

Concerning relationships between people and their surroundings, data from the project "Mönchengladbach 2030" as one example as well as from the recent survey "Perspektive Deutschland" give hints that there are problematic tendencies. The Mönchengladbach 2030 project's work shows that people seem to be discontent with their living environment and the services offered by the city (Mönchengladbach 2004). Looking at the national survey, one may conclude that contentment with living conditions and offered services differs extremely in the regions, with, to generalize, people being more content (and also having a more positive outlook of the future) in the well-off cities like Düsseldorf and being more worried and discontent in the old industrial regions or cities which are struggling harder with the current economic development (cp. Stern 2004).



Networks of developers

Existing networks do not respect the regional borders of the Düsseldorf governmental district. Rather, organizations located in the Regierungsbezirk are integrated in initiatives on a larger or smaller scale regional level, e.g. in the context of the Ruhrgebiet (to which part of the Regierungsbezirk belongs), the Rhine-Ruhr Metropolitan region, or in networks spread over the whole of North Rhine-Westphalia. In the following, we have adopted the guideline of including networks crossing the regional boundaries if actors from the Düsseldorf governmental district substantially contribute to them. This reflects the quite complex political, geographical, and economic structures in which the governmental district is embedded (cf. Guth 2002:6/7).

The region has a strong historic record of regional development through collaboration, due to the fact that the crisis of the coal and steel industries in the traditional "industrial heartland" of Germany, the Ruhr valley (Ruhrgebiet), resulted in a massive transformation of economic structures in the last 35 years (Bömer 2002: 3) that also affected the Düsseldorf governmental district. The first initiative in which participatory policy making played a substantial role was the Ruhrgebietskonferenz (Ruhr Area Conference) in 1979. Further milestones were the 1987 Zukunftsinitiative Montanregion (future initiative coal and steel regions), and the 1989 Zukunftsinitiative Nordrhein-Westfalen (future initiative North Rhine-Westphalia). Initially, efforts to cope with this transformation have been largely top-down orientated; only gradually, they have evolved to more participatory regional processes (Guth 2002:3-5). "During the 1990ies, this regionalisation became the predominant feature of structural policy in NRW and in the Ruhr area in particular. The approach was also taken on board when the Land conceptualised and conducted programmes which were co-financed by European Structural funds." (Guth 2002: 5).

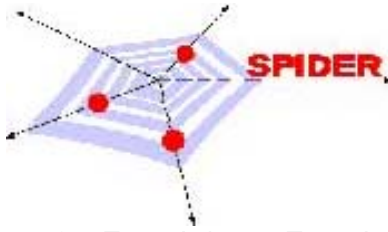
Today, the concept of a European Metropolitan Rhein-Ruhr region, which was first suggested in the 1995 North Rhine-Westphalia Regional development plan (Grier 2002a: 4), is particularly relevant for the Düsseldorf governmental district. Four NUTS-2 regions belong to the Metropolitan region: The governmental districts of Münster, Arnsberg, Köln and Düsseldorf. The Düsseldorf district government aims at promoting the integration of the Regierungsbezirk Düsseldorf in this larger context: "Only jointly will the metropolitan region Rhein-Ruhr be able to compete internationally" (Jürgen Bussow, president of the district government Düsseldorf, in Grier 2002b: 4; our translation⁶).

The district government of Düsseldorf also aims at strengthening international ties in the frame of the so-called "European region of Power", which consists of the Rhein-Ruhr region, the Dutch Randstad region, and the Bruxelles/Antwerpen region in Belgium (Bezirksregierung Düsseldorf 2002: 6).

Within this general frame, a multitude of networks exists, integrating a diversity of local actors from the Regierungsbezirk and beyond. Existing networks include the following ones:

- The *Wachstums- und Beschäftigungspakt Ruhr* (or *Ruhrpakt*, for short) was founded in 2001. It is a collaboration of actors from business, academics, governmental institutions, chambers of trade and commerce, and various representation groups jointly funded by the federal state and the European Union. The Ruhrpakt aims at fostering the development of clusters in the region. In the frame of the Ruhrpakt, twelve areas of competence (Kompetenzfelder) have been defined on which activities of the Ruhr concentrate (Ruhrpakt 2004):
 1. Gesundheitswirtschaft (medical economy)
 2. Logistik (logistics)

⁶ The original quotation says: " Nur eine gemeinsame Metropolregion Rhein-Ruhr hat Chancen, sich im internationalen Standortwettbewerb zu positionieren".

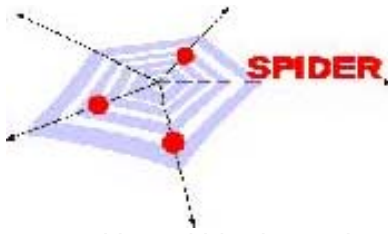


3. Energie/neue Energietechniken (energy/new energy solutions)
 4. Neue Werkstoffe (new materials)
 5. Tourismus, Freizeit und Kultur (tourism, leisure time, and culture)
 6. Maschinenbau (mechanical engineering)
 7. Neue Chemie (new chemistry)
 8. Informationstechnologien (information technologies)
 9. Bergbautechnik (mining industry)
 10. Wasser- und Abwassertechnik (water and waste water technology)
 11. Mikrostrukturtechnik/Mikroelektronik (microstructure technology, microelectronics)
 12. Design
- The (Essen-based) *Projekt Ruhr GmbH* is another network of local actors, including the cities of the Ruhr valley, the chambers of trade and commerce, and firms and companies from the region (Projekt Ruhr 2004).
 - *BioMedTec-Ruhr e.V.* was founded in 2001 as a cooperation of the universities of Bochum, Essen, and Witten/Herdecke. BioMedTec-Ruhr aims at fostering the development of a stable cluster of organizations and companies in the life sciences. It offers consulting and management services to existing and newly founded firms (BioMedTec-Ruhr 2004). *BioIndustry e.V.* is a "service cluster of businesses, research units, education and institutions of further translation, technology centres, biotech service businesses and local institutions for economic support in the ruhr valley." (Ruhrpakt 2004, our translation). It is networked to BioMedTec-Ruhr e.V.; the two networks have joined forces in November 2003 in the frame of *Life Technologies Ruhr e.V. (LifeTec Ruhr, for short)*, with BioMedTec-Ruhr concentrating on Biotechnology and nuclear medicine, and BioIndustry concentrating on medical technology and bio materials (Ruhrpakt 2004).
 - The *Life Science Agency GmbH (LSA)* in Düsseldorf functions as an umbrella organization of the *Bio-Gen-Tec NRW e.V.*, the *Health Care NRW e.V.*, and the *MeTNet NRW e.V.* (all based outside of the Düsseldorf governmental district, but operating in the whole Land).
 - Several institutions collaboratively aim at strengthening design businesses in the region. Activities center around the Zollverein area in Essen, a former coal plant that became part of the UNESCO cultural heritage in 2001. Actors involved include the *Design Zentrum Nordrhein-Westfalen*, the *Zollverein School for Management and Design*, and the *Entwicklungs-Gesellschaft Zollverein mbH*. Besides the newly founded Zollverein School, the development of a Design-Gewerbepark (a business estate for design companies) on the former industrial area of Zollverein seems to be the major project of this group of actors (Ruhrpakt 2004).
 - The *Landesinitiative Logistik NRW* of the Ministry for Economy and Work of the Federal State of North Rhine-Westphalia is a network of logistics businesses from the Land (Landesinitiative Logistik 2004), a network relevant for the governmental district's mostly Duisburg-based logistics companies. Further *Landesinitiativen* (initiatives of the federal state of NRW) exist, e.g. in the fields of energy and of water supply.

Creative tension

Regional innovation and development activities in the last years have shown that tension⁷, in general, is quite present in relation to the development of the region. There is a high level of

⁷ This chapter of the report refers to the concept of "creative tension", which is one of the core concepts of the Finnish model used here. For more details, please to background documents on the



competition within the region in all kinds of areas: from the cities' competition for population as well as for businesses settling in their district, to the sharpened economic competition and the newly introduced competition situation in the education and research sector up to competition between the large number of networks. But it is still unclear whether this has more positive effects in terms of a creative tension or whether negative effects of parallel and maybe contradicting strategies and activities prevail. The undoubtedly sharp competition situation and the fact that a large number of steps have been taken already is without question partly positive in the sense of mobilizing potential. Furthermore, the structural transformation process has produced different cultures, as old-industry-traditions and new knowledge economy cultures co-exist, which can also be regarded as a situation of creative tension between different modes of working, thinking and acting.

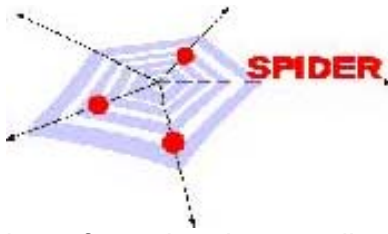
However, this creative tension may up to now not have been used to its maximum positive effect. For example, an analysis of the recent regional development policy and initiatives has shown that the regional conferences (one of the main recent policy instruments) have led to very mixed results. For example, the creation of networks was "rather limited", due to a sometimes very low frequency of meetings, and "in some regions the actors got tired because of a lack of fresh ideas, in other regions the conferences were dominated by a handful of powerful stakeholders and in others conflicts between different interests of the participating municipalities blockaded the process" (Guth2002: 10). To sum up, one can say that possibilities for utilizing and working with creative tension seem to be various.

Image

With its application for the "cultural capital of Europe 2010", the larger region of the Ruhrgebiet tries to make a big step forward in manifesting and projecting the change it has made in the last decades to the whole of Europe. The image of the region today is still somewhat ambiguous – the old image of an "industrial heartland", referring to steel and coal industries, seems difficult to shrug off and therefore still somewhat dominates the idea most of the people in Germany, and even more so, in other countries associate with the region apart from Düsseldorf. However, its history also led to a strong sense of identity and to a "regional pride", which now seems to be reaching a new level by integrating the successful change the region has managed to achieve in many parts. Therefore, areas like the cultural heritage "Zeche Zollverein" (see above as a centre for networks of developers), are of special importance, as they reflect the transition and draw visitors from all over the world. They serve as landmarks and signposts for the rapid change the regions has faced and is still undergoing.

Future Perspectives and Conclusions

The transformation from primary to secondary and tertiary sector is still ongoing, but low or mismatching qualification levels of quite a large part of the working population slow down the change to knowledge economy. Together with demographic change which hits this region hard (a shrinking and rapidly aging population), this is one of the central problems of the region (cp. Knapp/Schmidt 2002). On the other hand, a lot of new technology clusters have



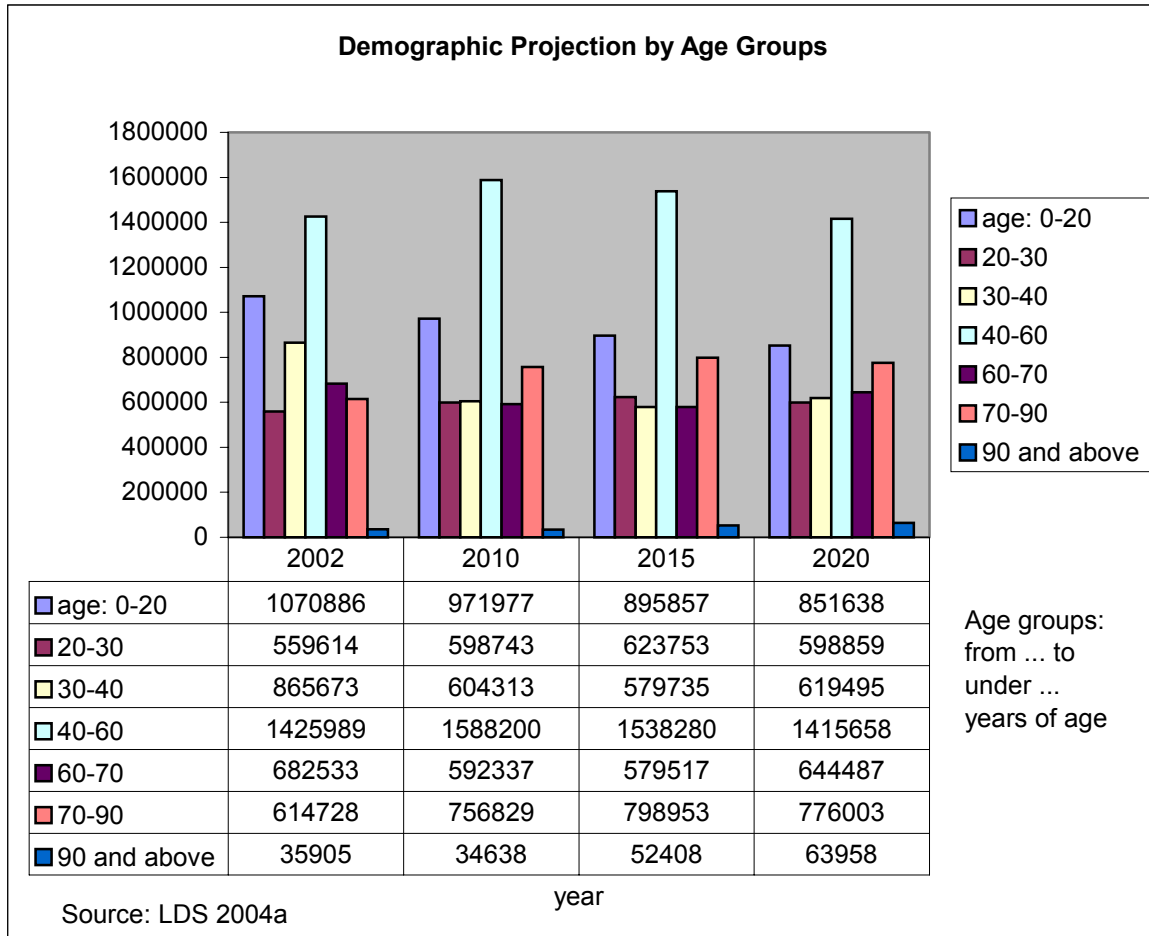
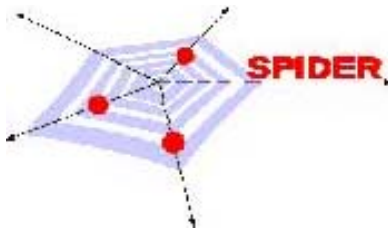
been formed and, generally speaking, seem to be developing in a positive way. However, it is unclear whether positive trends like the rising private R&D spendings will prevail.

Future perspectives, as outlined in studies or publications, generally refer to a larger geopolitical area than the Regierungsbezirk, but also touch or include this region when being concerned with NRW or the Ruhr area, so that they need to be taken in consideration. In the last years, demographic change has emerged as one of the main future challenges for the region. The population projection for the region shows that the region will lose about 5% of its population until 2020, with the dynamics of development speeding up afterwards. Until then, the number of people under 20 years of age will have been reduced by about 200,000 (about a fifth of today's number of people this age). In addition, the process of an aging workforce is obvious, as for example the number of those aged 30 to 35 will sink by nearly a third. At the same time, the number of elderly inhabitants rises, such as those 80 years and older (their number nearly doubles⁸). This will be a major concern for companies human resources strategies as well as for innovation activities, which up to now tend to concentrate on younger members of the workforce. Adequate measures to keep innovation capability high or even raise it and to avoid negative consequence of a mismatch of workforce supply and demand still have to be taken (ARBID 2004).

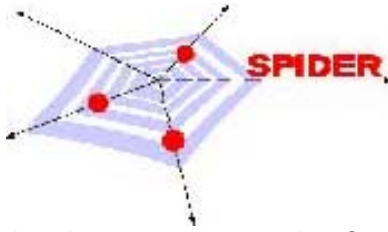
Many of the studies and projects concerned with the regions' future mention the question of its interconnectedness to the Ruhr area or other larger areas. What is described as a main problem is the fact that these larger or "metropolitan regions" are not perceived as one region, nor do they share a common governance system, which makes it problematic to compete with other large metropolitan regions as well as it can obstruct a successful regional policy.

Apart from this discussion, the main issue when dealing with the regions' future is the question of its future profile, referring to societal as well as economic development. A recent project has described and partly visualized a future "**RheinRuhrCity**", meaning a densely networked and interconnected metropolitan area across today's governmental districts. Four scenarios were developed, and they feature different possible future developments (roughly summarized):

⁸ All population projection data from LDS 2004a.



1. **Park Scenario:** tacking the high unemployment rate as a starting point, in this scenario a large number of today's population decides to move to other regions and leaves behind large unused areas , a "deserted city [...] with a very sparse population, mostly reliant upon itself" (MVRDV 2002: 281), so that this becomes the biggest natural park in Europe within 50 years.
2. **Archipelago Scenario:** The region has encouraged bottom up economic activity, and has changed into a mosaic of small, flexible economic sectors, supported by "collaborating, instead of competing municipalities" (MVRDV 2002), with Essen as the "Super Business District of the Region. Legal offices, advertising agencies, financial sectors, all concentrate in the centre of this city, [...] [while] Oberhausen will be one big shopping district." (MVRDV 2002: 295)
3. **Campus Scenario:** Here, the region becomes a centres of the new knowledge industry, made up of several clusters, such as a big American-style Campus in Essen and a high-tech office and research campus in Duisburg. This is made possible by a combination of low taxes, a good supply of human resources, improved education facilities as well as a new focus on improving the living conditions.
4. **Network Scenario:** This vision centres around mobility innovations, with the region leading in providing a modern mobility service industry and infrastructure: "clean, silent and fast vehicles", operating on a renewed and improved infrastructure concentrating on networking the different parts of the region and of different kinds of infrastructure.

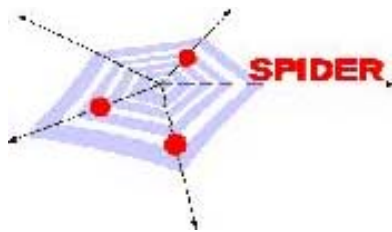


Another recent example of a future vision for the region is the report of the Zukunftsrat NRW ("Future Council NRW"), a group which has been called together by the local agenda 21 initiative. In its report, the council outlines a portfolio of measure to support a successful development of the federal state NRW. It stresses that efforts need to be focussed, and underlines the importance of bringing the difficult financial situation of NRW into balance (for example, they regard it as necessary to cut down the Land's spendings by 15%; Zukunftsrat 2004). It highlights the necessity to de-regulate and calls for a public discussion of the role of the state and citizen involvement. The report tries to line out measures that make a development until 2015 possible which includes a million new jobs, economic annual growth of 3 to 3.5% and a doubling of resource efficiency; the focus point of this development is the so-called cluster-policy (Zukunftsrat 2004). Other central aspects of the concept include: NRW as a knowledge centre (knowledge for innovation, knowledge for growth), supporting and professionalizing pre-school learning institutions, more widespread day care schools, using immigration to strengthen NRW, using the elderly's potential, and developing NRW as a "cultural powerhouse". Practical steps to achieve this goal include for example setting up an organisation "Project 2015", doubling the public spendings for research and development, creating an international forum for knowledge and innovation (Zukunftsrat 2004).

Central Questions

Central questions arising from this report that concern the future of the region as a "region of knowledge" are:

- Which innovation strategies can involve "creative tension", leading to concrete outputs?
- What is the role of the large part of the population of foreign nationality or foreign origin in building a knowledge region? Is a more successful integration a prerequisite to building a sustainable knowledge region?
- What can be done about the mismatch of supply and demand concerning highly skilled employees in times of low financial budgets of cities and counties?
- What kind of a role can the quickly growing older part of the working population play in building a knowledge region? Could they become "chief innovators" for an aging economy in Europe, and for example also take leading roles in pressing concerns of regional policy, such as in reviving the city centres?
- What is the role of rural areas in a knowledge region? Could they become knowledge centres for sustainability and protection of nature in densely populated areas, or could their role be to attract tourism and raise quality of life?
- How much diversity can the region afford in order to build a recognizable knowledge region?



Local Action Group

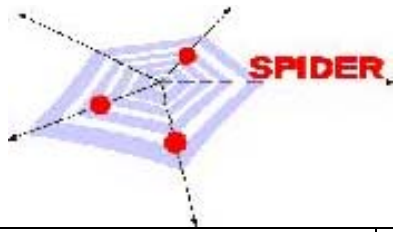
Results for this Region

The work with the local action group in this region was based on the outcomes of the report, and has brought some central issues concerning the development of the region to light, as well as produced first steps towards a concise vision of the region in 2020. This vision will be summarized in the Z_punkt's presentation at the European Expert Seminar in January 2005 and is available on the SPIDER-project Website <http://www.spider-project.net>.

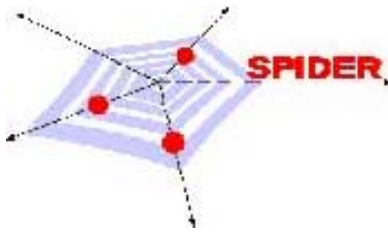
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⁹ Own translation of institution names.

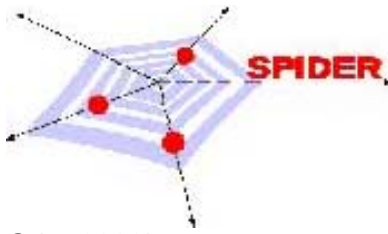


Düsseldorf)



References

- Aiport Mönchengladbach 2004
Aiport Mönchengladbach: Website, Data concerning Passengers and Traffic
http://www.mgl.de/d/index.php?type=index&path=04_infos_service, as at September 2004
- ARBID 2004
Initiative ARBID (Arbeit und Innovation im demografischen Wandel): Die betriebliche Altersstrukturanalyse – unternehmerische Strategiefindung im demografischen Wandel. In: ARBID-Newsletter 03/2004, p.1-3
- BBR 2003a
Bundesamt für Bauwesen und Raumordnung (BBR): Aktuelle Daten zur Entwicklung der Städte, Kreise und Gemeinden. Ausgabe 2003. Bonn 2004
- BBR 2003b
Bundesamt für Bauwesen und Raumordnung (BBR): Aktuelle Daten zur Entwicklung der Städte, Kreise und Gemeinden. CD-ROM INKAR Ausgabe 2003. Bonn 2004
- Bezirksregierung Düsseldorf 2000
Bezirksregierung Düsseldorf (ed.): GEP 99. Gebietsentwicklungsplan für den Regierungsbezirk Düsseldorf. Düsseldorf 2000
- Bezirksregierung Düsseldorf 2001
Bezirksregierung Düsseldorf (ed.): Zahlen – Daten – Fakten. Allgemeines. Düsseldorf 2001
- Bezirksregierung Düsseldorf 2002
Bezirksregierung Düsseldorf (ed.): ERP – European Region of Power oder: ein starkes Stück Europa. Datenmosaik, 15. Ausgabe, March 2002
- Bezirksregierung Düsseldorf 2003
Bezirksregierung Düsseldorf (ed.): BioScience im Regierungsbezirk Düsseldorf. Düsseldorf 2003
(www.bezregduesseldorf.nrw.de/BezRegDdorf/autorenbereich/Dezernat_63/MikeFekkes/pdf/bioscience2003.pdf, as at August 2004)
- BioMedTec-Ruhr 2004
Website of BioMedTec-Ruhr e.V.
(www.biomedtec-ruhr.de/php/profil.php?lang=de, as at August 2004)
- Bömer 2002
Bömer, Herman: Political Economy of Modernising old [sic] Industrial Areas and the Crisis of the New Economy – the Example of the Ruhr Area and the City of Dortmund. Paper (draft) presented to the 42nd European Regional Science Association Congress. Dortmund 2002
- Eurostat 2003
Eurostat (ed.): Regionen: Statistisches Jahrbuch 2003, mit CD-ROM. Luxemburg 2003
- Eurostat New Cronos 2004
Various data from the New Cronos Database, as at August 18, 2004
- Eurostat 2005
Data from the website of Eurostat:
(europa.eu.int/comm/eurostat/, as at January 2005)
- Florida/Tinagli 2004
Florida, Richard; Tinagli, Irene: Europe in the Creative Age. No place 2004
- Grier 2002a
Grier, Charles H.: Comparative Analysis of the Rhine-Ruhr Metropolitan Region. Düsseldorf 2002



Grier 2002b

Grier, Charles H.: Analyse geeigneter Vergleichsregionen für die Metropol-Region Rhein-Ruhr. Düsseldorf 2002

Guth 2002

Guth, Michael: Strategic Improvement of Regional RTDI Policy and Regional Development Policy Through a Systematic Use of Foresight Methods. The case of Nordrhein-Westfalen (D) as an example for regions which are facing severe industrial structural change. Paper prepared for the STRATA – ETAN Expert Group Action on "Mobilising the regional foresight potential for an Enlarged European Union". Brussels 2002

IHK Düsseldorf 2004

Industrie- und Handelskammer zu Düsseldorf (Hg.): Aufwärts ohne Schwung. Gemeinsamer Konjunkturbericht zu Jahresbeginn 2004. Jahresbeginn 2004. Düsseldorf 2004

IRPUD 2002

Projekt Städteregion Ruhr 2030 / IRPUD: Die neunte Stadt. Der sechste Sinn der Städteregion Ruhr. Dortmund 2002

Knapp/Schmitt 2002

Knapp, Wolfgang and Schmitt, Peter: The Socio-Economic Profile of RheinRuhr. In: Institute for Urban Planning and Development of the Ile-de-France Region (ed.): Economic Performance of the European Regions. Quarterly Review. 4th quarter 2002

Kompetenz Centrum Logistik 2004

Website of the Kompetenz Centrum Logistik
(www.kcl-duisburg.de, as at August 2004)

Landeshauptstadt Düsseldorf 2002

Landeshauptstadt Düsseldorf (ed.): Standort-Profil Düsseldorf. Düsseldorf 2002

Landeshauptstadt Düsseldorf 2003

Landeshauptstadt Düsseldorf (ed.): Life Sciences in Düsseldorf. Region, Wissenschaft und Wirtschaft. Düsseldorf 2003

Landeshauptstadt Düsseldorf 2004: Website of the provincial capital Duesseldorf:

(www.duesseldorf.de, as at January 2005)

Landesinitiative Logistik 2004

Website of the Landesinitiative Logistik NRW
(www.logistik.nrw.de, as at August 2004)

Knapp/Schmidt 2002

Knapp, Wolfgang; Schmitt, Peter: The Socio-Economic Profile of RheinRuhr. In: Cahiers de l'Institut de Aménagement et d'Urbanisme de la Région d'Ile-de-France No. 135, 4^e quater 2002, p.66-72

LDS 2004a

Landesamt für Datenverarbeitung und Statistik NRW (ed.): Standardtabellen.
(www.lds.nrw.de/Statistik/Landesdatenbank.html, as at August 2004)

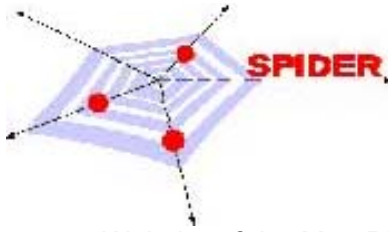
LDS 2004b

Landesamt für Datenverarbeitung und Statistik NRW (ed.): Datenprofil für Essen, kreisfreie Stadt, Duisburg, kreisfreie Stadt, Regierungsbezirk Düsseldorf, Nordrhein-Westfalen, as at August 2004

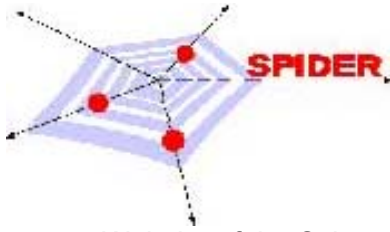
LDS 2004c

Data available at the homepage of the Landesamt für Datenverarbeitung und Statistik Nordrhein-Westfalen
(www.lds.nrw.de, as at August 2004)

MPI 2004



- Website of the Max-Planck-Institut für bioanorganische Chemie, and the Max-Planck-Institut für Kohlenforschung
(www.mpi-muelheim.mpg.de/strneu/index_e.htm, as at August 2004)
- Mönchengladbach 2004
Projektteam Mönchengladbach 2030: Mönchengladbach 2030. Auf dem Weg zur aktivierenden Stadt. Mönchengladbach 2004
- MVRDV 2002
MVRDV / NRW-Forum Kultur und Wirtschaft Düsseldorf: RheinRuhrCity. Die unentdeckte Metropole – Hidden Metropolis. Ostfildern 2002
- MVEL 2005
Website of the Ministerium für Verkehr, Energie und Landesplanung des Landes Nordrhein-Westfalen
(<http://www.mvel.nrw.de>, as at January 2005)
- MWMTV 2000
Ministerium für Wirtschaft und Mittelstand, Technologie und Verkehr des Landes Nordrhein-Westfalen (Hg.): Stand und Perspektiven der Logistikbranche in Nordrhein-Westfalen. Kurzfassung der Bestandsanalyse. Düsseldorf 2000
- Projekt Ruhr 2004
Website of the Projekt Ruhr GmbH
(www.projektruhr.de, as at August 2004)
- Ruhrpakt 2004
Website of the Wachstums- und Beschäftigungspakt Ruhr
(www.ruhrpakt.de, as at August 2004)
- Statistisches Bundesamt 2002
Statistisches Bundesamt: Statistisches Jahrbuch 2002 für die Bundesrepublik Deutschland. Wiesbaden 2002.
- Statistisches Bundesamt 2003
Statistisches Bundesamt: Statistisches Jahrbuch 2003 für die Bundesrepublik Deutschland. Wiesbaden 2003.
- Stern 2004
Stern: Wie wir leben. Was wir denken. Was wir wollen. Mit Ergebnissen aus allen Regionen. In: Stern Nr. 18, 22.4.2004, S. 46-62
- Schulministerium 2004a
Ministerium für Schule, Jugend und Kinder des Landes Nordrhein-Westfalen (ed.): Schulleckdaten öffentlicher und privater Schulen im Schuljahr 2003/2004
(www.bildungsportal-nrw.de/BP/schule/system/statistik, as at August 2004)
- Schulministerium 2004b
Website of the Ministerium für Schule, Jugend und Kinder des Landes Nordrhein-Westfalen
(www.bildungsportal-nrw.de, as at August 2004)
- Schulministerium 2004c
Tageseinrichtungen-Server of the Ministerium für Schule, Jugend und Kinder des Landes Nordrhein-Westfalen
(www.tageseinrichtungen.nrw.de/index_frame.html, as at August 2004)
- Technologiezentrum 2004
Website of the Technologiezentrum Ruhr
(www.chip-tzr.de, as at August 2004)
- Uni Düsseldorf 2004
Website of the Heinrich-Heine-Universität Düsseldorf
(www.uni-duesseldorf.de/HHU/about/info/portrait, as at August 2004)
- Wissenschaftszentrum 2004



Website of the Science Centre North Rhine-Westphalia
(www.wz.nrw.de, as at August 2004)

Zukunftsrat 2004

Zukunftsrat NRW: NRW 2015. Ressourcen nutzen. Regionen stärken. Köln 2004

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SPIDER-Project: <http://www.spider-project.net>