

Policy guidelines for regions falling under the new regional competitiveness and employment objective for the 2007 - 2013 period in the fields of the knowledge economy and the environment, in line with the Lisbon and Gothenburg objectives

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**Policy guidelines for regions falling under the  
new regional competitiveness and  
employment objective  
for the 2007 - 2013 period**

*Vol. II Country Report. GERMANY*

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*The Team takes full responsibility for the data, information and judgments expressed in the present report.*

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## LIST OF ACRONYMS

CIS	Community Innovation Survey
DG Regio	Directorate General of Regional Policy of the European Commission
ERDF	European Regional Development Fund
EKC	Environmental Kuznets Curve
EPO	European Patent Office
ESPON	European Spatial Planning Observation Network
FA	Factor Analysis
GDP	Gross Domestic Product
ICT	Information and Communication Technology
INRA	International Research Associates (Europe)
NUTS	Nomenclature of Territorial Units for Statistics
PC	Personal Computer
PCA	Principal Components Analysis
PPS	Purchasing Power Standards
R&D	Research & Development
SF	Structural Funds
TLC	Telecommunication

## EXECUTIVE SUMMARY

This Report offers an assessment of economic conditions and policy priorities for the regions falling under the new Competitiveness and Employment Objective 2007-2013.

It is structured as follows:

- 1) the report presents some statistical data on the general economic conditions of the country.
- 2) a statistical analysis on the three ERDF themes: a) Innovation and the Knowledge economy; b) Accessibility; c) Environment and Risk Prevention.
- 3) a discussion of the current experience with Structural Funds and some implementation issues.
- 4) a set of policy priorities as perceived by the team of independent experts. The methodology, sources of data and description of indicators are explained in detail in Vol. I of the Report, that should be duly considered.

Contributors to the Report include: the statistical team, the core team, thematic experts and the country experts. The final version has been prepared under the responsibility of the core team (Milan).

**Eligible regions: Arnsberg, Berlin, Braunschweig, Bremen, Darmstadt, Detmold, Düsseldorf Freiburg, Gießen, Hamburg, Hannover, Karlsruhe, Kassel, Koblenz, Köln, Mittelfranken, Münster, Niederbayern, Oberbayern, Oberpfalz, Oberfranken, Rheinhessen-Pfalz, Saarland, Schwaben, Schleswig-Holstein, Stuttgart, Trier, Tübingen, Unterfranken, Weser-Ems.**

### ▪ *General Economic Conditions*

The 30 German NUTS 2 eligible regions are part of different Länder, with around 67 million inhabitants, that show quite different economic structures and performance indicators. On average population density is more than twice in comparison to the benchmark average of the EU regions eligible to the Competitiveness objective. The range is from the extremely high density of metropolitan regions of Berlin, Hamburg, Bremen, Düsseldorf to the below-benchmark population density in Niederbayern, Oberpfalz, Trier. The share of employment in the primary sectors is on average well below the benchmark, but much higher instead, for example, in the three above-mentioned regions and in Münster. The share of manufacturing is, in turn, on average 24% higher than the benchmark, with several regions where manufacturing share is 30% or more of employment: the four regions of Baden Württemberg, the seven regions of Bayern, and Detmold.

In terms of economic performance on average GDP and unemployment are close to the benchmark, but growth indicators are considerably lower. Moreover, there is a clear divide between high performing regions in the South and Centre-East, and the overall less performing

regions in the North (except Bremen and Hamburg) and the Centre-West (except Köln and Düsseldorf). Berlin is a special case, being below the benchmark over all indicators and showing an extremely high unemployment. Overall, twelve NUTS 2 regions are low performers against our benchmark, six are intermediate, and six are high performers. There is hence a clear indication for regional prioritisation.

- *Innovation and knowledge economy*

The regional innovation potential in Germany is one of the best in the EU. Only two regions show a low performance (Niederbayern and Weser-Ems), while all the others are ranked either high or intermediate (in equal numbers). EPO applications are extremely high in most regions (but e.g. not so in Berlin, and low in Bremen and elsewhere). R&D expenditure on GDP is high on average, but very uneven: e.g. around 5% in Stuttgart, Oberbayern, Braunschweig, but well below the benchmark in 12 regions, e.g. Saarland, Niederbayern, Kassel, Koblenz and elsewhere. The share of employment in hi-tech manufacturing is above the benchmark in most regions, while less so in hi-tech services. Tertiary education is close to the benchmark, but with some laggards such as Oberpfalz, Arnseberg, Saarland, and others.

In general, it seems that most German regions have more a problem of unexploited innovation potential, than of RTDI endowment.

- *Accessibility*

Most of the transport problems of Germany should be examined at NUTS 3 level, because of the dense and diverse nature of the network. Looking at NUTS 2 some regions may have low connectivity, particularly in the South, while multimodal accessibility is intermediate to high everywhere. Trends of transport for Germany were below EU 15 average in the last ten years, with a still strong role of railways. Looking into the future, rail mode is expected to increase further in the next 15 years, along with inland waterways for freight.

The TEN-T priority projects include the high speed rail line Paris-Bruxelles-Köln-Amsterdam London, the East high speed rail, the railway line Berlin-Verona/Milano-Palermo; the railway line Paris-Stuttgart-Bratislava; the Betuwe line; the Rhine-Danube waterway; the railway Athina-Wien-Nürnberg/Dresden.

Looking at ICT/TLC indicators the share of firms with a internet access, and of firms with a website, is everywhere over the benchmark. Household data are less brilliant in terms of

internet access and of broadband, but very good for PCs owned. Overall 12 regions are high performers, and all the remaining ones are ranked intermediate.

- *Environment and risk prevention*

Energy sustainability at NUTS2 level is intermediate to low at the NUTS 2 level. Electricity efficiency, self-sufficiency, and renewable sources are often below the benchmark. The environmental impact of transport seems to be very differentiated: high in nine regions (extremely high in Berlin), intermediate in other eight, and low in the remaining thirteen, particularly in Bayern, because of low average traffic intensity: however, congestion in the metropolitan areas is a widespread concern, and regional NUTS 2 data cannot fully capture these local situations. Natural and rural assets indicators are mostly intermediate, low in nine regions, nowhere high. As for natural risks, flood hazard potential is high in one half of the regions, but particularly in Stuttgart, Tübingen, Oberbayern, Schwaben.

Technological risk in terms of polluting sites density is nowhere low, it is usually intermediate, but it is high in eight regions, including a very alarming situation in Bremen and Hamburg, and important risks elsewhere, particularly in the North.

- *Implementation of Structural Funds in the current programming period*

Under the current programmes, there are eleven regional programmes in Germany in the Objective 2. These are generally aimed at fostering competitiveness through business support. Around 36% is committed to SMEs and craft, 12% to RTDI, and around 10% is committed to tourism. Human resources are given 12% and a similar share goes to planning and rehabilitation, while very small resources are allocated to all types of infrastructures.

- *Policy priorities for discussion*

Given the quite different regional conditions, policy priorities should distinguish between the high innovation performers and the other regions. The analysis suggests that in Baden-Württemberg and in Bayern no more than 40% of ERDF funds should be committed on average to Innovation, and most of them to SMEs and entrepreneurship, rather than to enhancing regional RTDI (except for specific local projects). In some other regions, the absorption capacity in this area may be limited. For most of the remaining regions, there is a case for devoting most (e.g. two thirds) of the funds to the innovation and knowledge economy. The crucial issue is here how to translate in economic performance the existing innovation capacity.

This may require focusing particularly on stimulating innovation in SMEs and on entrepreneurship.

Environment and risk prevention may be the first overall priority for Saarland, mostly for the rehabilitation of contaminated land, and perhaps very important in Bayern as well for the prevention of natural and technological risks. Elsewhere, the average weight of the priority may be 20%-30%, with rehabilitation as the first sub-priority for Berlin, Bremen, Hamburg, Rhineland Palatine; risk prevention in Schleswig-Holstein and Baden Wurttemberg. Energy efficiency may play a minor, but not entirely negligible role, along with clean transport e.g. in Hesse and Baden Wurttemberg. In general we suggest that this may be the second priority in many regions.

Symmetrically, the analysis suggests that accessibility should be an important priority (or of similar weight to innovation) for most of Baden Wurttemberg and Bayern regions, and perhaps for Hesse as well, with transport and ICT measures to be considered in the specific contexts, with more weight to the latter, perhaps in combination with SMEs support. There is very limited scope, in contrast, for using ERDF funds under this heading in Berlin, Bremen, Hamburg, and a limited one elsewhere. With the above exceptions, we expect that overall Accessibility may be a third priority for most regions.

# 1 Scope and methodology

## 1.1 Aim of the report

The aim of this Country Report is to offer the European Commission an overview of the strengths, weaknesses, opportunities and threats faced by the regions eligible for the new Competitiveness objective 2007-2013. It focuses on the three ERDF themes listed in the draft regulation, and it has been prepared as a background document, with a view to supporting the Commission in its own policy priorities analysis and negotiation with the Member States.

As a part of a comprehensive study on 19 countries including 167 regions, the present Country Report is designed as a summary assessment of some key issues. It is a preliminary assessment that should be completed by a much more detailed structural and policy analysis needed at a later stage for the preparation of the Operative Programmes. Moreover, as explained in detail in Vol. I (Statistical Analysis), and as requested by the Terms of Reference, the present report is based mainly on standardised regional statistics and a common cross-country approach. This has obvious advantages in terms of comparisons and benchmarking, but is not designed to fully capture specific features based on local data, and this fact should be duly considered when using it as a reference.

## 1.2 Methodology for context analysis

The analysis at regional level presents the following sections: general economic structure, innovation and the knowledge economy, accessibility, environmental and risk prevention. For each section a brief description is given according to a short list of indicators with the following characteristics:

- they are consistent and available at NUT2 level;
- they are relevant for the ERDF thematic approach;
- they are, as far as possible, policy-oriented.

The choice of this set of indicators comes from the need to provide guiding principles for policy priorities, rather than to develop comprehensive regional statistical data. For this reason it should be clear that they give some highlights of the major trends in the regions and do not offer a complete picture of all the needs and weaknesses experienced by the regions.

The rationale of the data processing is the following:

- for each aspect (economic structure plus three themes) a linear composite indicator is created and the region is ranked in comparison with all the other eligible regions;
- for each theme (except Environmental risks) the degree of correlation with the economic performance is investigated, by means of a correlation analysis.

The basic idea is to discuss the main thematic trends in the regions, with respect to the ERDF eligible interventions, in the light of the economic structure and trends and the relative position of the regions as compared to a given benchmark (the EU eligible regions average). This reading of the data helps to discover combinations of, for example, High Innovation and Low Economic Performance, that may suggest the existence of unexploited potential, hence an opportunity to invest more on transfer and adaptation than on R&D or tertiary education per se. This analysis is included in Sections 2 to 5.

This set of information is then discussed from a more qualitative point of view on the basis of inputs coming from an assessment of the current SF programming period and lessons learnt in the field analysis carried out by the national expert.

### 1.3 Structure of the report

Section 2 briefly summarises the general economic conditions for the eligible regions, using the following average annual data (2000-2002): regional population and its national share, population density, employment share of manufacturing, a 'rural/urban' and a 'presence of manufacturing' classification; and 1995-2002 averages for GDP per capita, rate of unemployment, growth of GDP, labour productivity growth per employee, and economic performance ranking. The latter ranking is crucial in the analysis. It is based on a linear combination of two factors ('levels' and 'growth') arising from a factor analysis (see Vol. I for details). Each data set is presented in comparison with a benchmark given by the average of the EU 168 regions eligible for the objective. Often some additional macroeconomic information is also included.

The following section is on Innovation and Knowledge Economy. It presents regional average annual data (mostly 1995-2002) on R&D expenditure as a share of GDP, EPO applications per million inhabitants, percentage of employment in high-tech services, share of population with tertiary education, share of firms' turnover due to new products (CIS data), and an overall

classification based on a factor analysis. Regions are classified High, Intermediate or Low performing in innovation with a combination of these data.

Section 4 is about Accessibility. It presents data on TLC and ICT (share of firms with Internet access and websites and share of households with a PC and access to the Internet) and data on transport indicators (the ESPON multimodal accessibility potential and connectivity to terminals by car). The analysis is supplemented by recent and forecasted trends in travel demand by mode (DG TREN data and scenario at 2020 (Tremove)). A multi-index analysis is given in the Annex.

Section 5 looks at Environment and Risk prevention. This includes standardised data on energy sustainability (electricity efficiency, self-sufficiency, renewable sources and ranking); the environmental impact of transport (vehicle density, non-fuel transport, anthropic degree, urban/rural typology); natural and technological risk (flood hazard potential, burnt areas and polluting sites). The reader should note that these data cannot cover specific sub-regional environmental risks, but consider regional averages.

Section 6 gives a quick overview of the current 2000-2006 programming period, based on a financial breakdown by re-classified priority and some qualitative comments based on the evaluation results.

The last section is about the policy priorities assessment. The first part of it presents the results of a correlation analysis between Economic Performance and Innovation, Access, and Environment summary indicators. A similar cross-reading is given for Economic Performance, Accessibility and Environment, while the presence of high Natural or Technological Risks is considered as a critical issue per se.

After this combined reading of performance and structural data, the following section is more qualitative, and based on other sources of evidence, including interviews with stakeholders, official documents, evaluation reports, academic research, and the personal assessment by the country expert. This leads to the suggestion of some indicative regional policy priorities, based on the available evidence, to be checked at a later stage when the national frameworks and regional programmes are available.

The report ends with a brief discussion of some implementation issues.



## 2. General economic conditions

The majority of German NUTS2 regions eligible for the competitiveness objective are not extremely differentiated in terms of population, surface and, then, population density (cf. table 1). The most relevant exceptions to this rule are the three urban regions of Berlin, Bremen and Hamburg characterised by a very small surface and a very high population density. Also the region of Düsseldorf has a population density significantly above the national average, but this is due to its population share (the highest among the 30 German regions considered). This region, known as the “Ruhr basin”, is an agglomeration of highly industrialised cities with altogether 5.3 million inhabitants.

Albeit four regions record a share of employment in primary sectors near or above 5%, none of the German regions can be classified as “rural”. In fact, 19 regions are included in the intermediate group and the remaining 11 are urban regions.

A peculiar feature of the German regions is that the large majority of them (19 out of 30) record an over average share of manufacturing employment, and this happens both in intermediate and urban regions. Actually five out of the eleven urban regions share this characteristic and only for two of them – Berlin and Hamburg, i.e. metropolitan areas – there is a low presence of manufacturing activities and, then, a strong prevalence of tertiary employment. As a consequence, the structural characteristics of Germany are very different from, on the one hand, those of the UK, in which there is a strong presence of urban regions with low manufacturing employment and, on the other, those of Italy, in which the high presence of manufacturing is a feature of non urban regions.

With respect to economic performances (see tables 2 and 3 and map 1), Germany is characterised by a clear divide between southern and central eastern eligible regions and those located in northern and central western Germany, with the latter recording low economic performances (especially in terms of GDP per capita but also with respect to the rates of GDP and labour productivity growth). The relevant exceptions to this general rule are the western regions of Düsseldorf and Köln (with intermediate economic performances) and the northern regions of Bremen and Hamburg (with, respectively, intermediate and high performances). A case apart is the metropolitan region of Berlin which shows a medium performance in terms of GDP per capita but records a very high rate of unemployment (almost 15%) coupled with negative rates of growth of GDP and labour productivity.

**Tab. 1 Eligible regions by structural indicators**

	Population (thousand)	Share of national population	Population density	Share of primary sectors on total employment	Share of manufacturing on total employment	Rural/urban classification	Presence of manufac- turing
Stuttgart	3951	5.91	374	2.45	35.50	Urban	High
Karlsruhe	2,694	4.03	389	1.37	29.85	Urban	High
Freiburg	2,147	3.21	229	2.86	31.22	Intermediate	High
Tübingen	1,773	2.65	199	2.70	34.17	Intermediate	High
Oberbayern	4,108	6.14	234	3.10	23.12	Intermediate	High
Niederbayern	1,181	1.77	114	5.09	30.32	Intermediate	High
Oberpfalz	1,082	1.62	112	5.37	29.54	Intermediate	High
Oberfranken	1,113	1.66	154	2.95	33.68	Intermediate	High
Mittelfranken	1,693	2.53	234	3.28	29.30	Intermediate	High
Unterfranken	1,338	2.00	157	2.98	30.76	Intermediate	High
Schwaben	1,760	2.63	176	3.80	29.70	Intermediate	High
Berlin	3,387	5.06	3,799	0.64	11.59	Urban	Low
Bremen	661	0.99	1,634	2.93	19.12	Urban	Intermediate
Hamburg	1,720	2.57	2,277	1.18	14.23	Urban	Low
Darmstadt	3,742	5.60	503	1.38	21.97	Urban	Intermediate
Gießen	1,064	1.59	198	1.88	25.64	Intermediate	High
Kassel	1,266	1.89	153	3.19	25.21	Intermediate	High
Braunschweig	1,668	2.49	206	2.43	28.63	Intermediate	High
Hannover	2,162	3.23	239	2.48	20.14	Intermediate	Intermediate
Weser-Ems	2,434	3.64	163	5.38	22.42	Intermediate	Intermediate
Düsseldorf	5,255	7.86	993	2.38	22.57	Urban	High
Köln	4,295	6.42	583	1.59	21.55	Urban	Intermediate
Münster	2,616	3.91	379	4.68	22.53	Intermediate	Intermediate
Detmold	2,059	3.08	316	1.94	30.58	Urban	High
Arnsberg	3,805	5.69	476	2.53	27.60	Urban	High
Koblenz	1,522	2.28	188	2.46	23.60	Intermediate	High
Trier	512	0.77	104	4.82	18.96	Intermediate	Intermediate
Rheinessen-Pfalz	2,008	3.00	293	2.77	25.23	Intermediate	High
Saarland	1,067	1.60	415	2.96	22.40	Urban	Intermediate
Schleswig-Holstein	2,796	4.18	177	3.73	15.21	Intermediate	Low
<i>National average</i>	<i>66,876</i>	<i>100.00</i>	<i>286</i>	<i>2.67</i>	<i>24.93</i>		
<i>EU eligible regions</i>	<i>313,711</i>		<i>129</i>	<i>3.34</i>	<i>20.18</i>		

Source: Eurostat - see vol.I

Generally speaking, the satisfactory performances of some German regions (actually, only six out of thirty are in the group of best performers) are mainly due to a GDP per capita higher and a rate of unemployment lower than the average of the 168 European eligible regions. Instead, in terms of GDP growth, all the German regions, with the only exception of Oberbayern, are below the European average. Thus, in order to maintain their leading position in the future, also the best performing German regions should recover a strong capacity of generating growth.

The economically high performing region of Oberbayern includes the city of Munich with its sub-centers and the rapid developing around Munich International Airport of Erding.

As a final remark, it must be added that the substantial divide between German regions in terms of economic performance provides a strong support for the introduction of regional priorities in the distribution of ERDF funds.

**Tab. 2 Eligible regions by economic performance indicators**

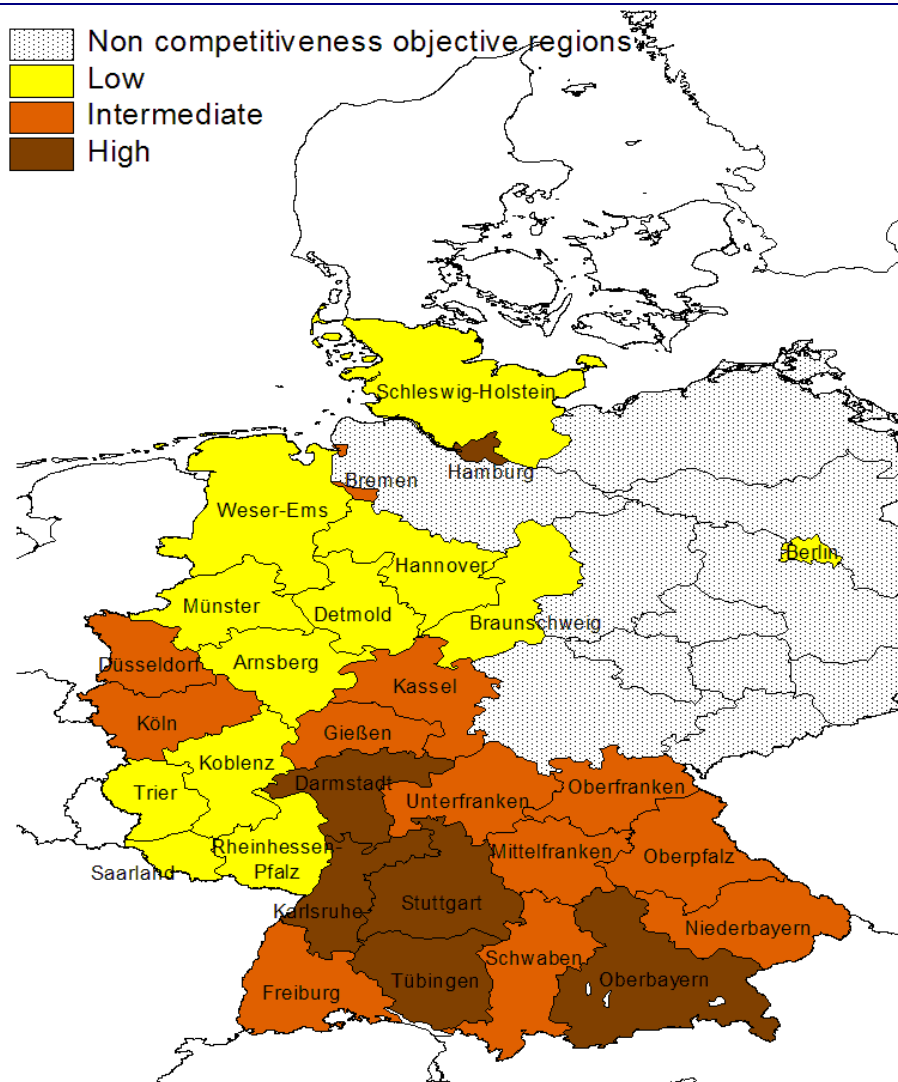
	GDP per capita	Rate of unemployment	Growth of GDP	Growth of GDP per employed person	Economic performance ranking
Stuttgart	28,227	4.01	2.21	1.23	High
Karlsruhe	26,208	4.71	1.81	0.69	High
Freiburg (*)	22,347	4.16	1.95	0.75	Intermediate
Tübingen (*)	23,442	3.84	2.00	1.29	High
Oberbayern	33,063	3.25	2.92	1.66	High
Niederbayern	21,299	4.23	2.17	1.57	Intermediate
Oberpfalz	22,524	4.98	2.05	1.42	Intermediate
Oberfranken	21,758	6.09	0.91	1.24	Intermediate
Mittelfranken	26,155	5.43	1.36	0.92	Intermediate
Unterfranken	21,845	4.83	1.58	0.99	Intermediate
Schwaben	22,706	4.06	1.50	1.02	Intermediate
Berlin	20,217	14.99	-0.92	-0.18	Low
Bremen	30,589	9.54	1.49	1.44	Intermediate
Hamburg	38,573	7.60	1.91	1.52	High
Darmstadt	31,866	5.28	1.87	0.93	High
Gießen	20,464	5.79	1.67	1.26	Intermediate
Kassel	21,770	7.05	1.56	1.28	Intermediate
Braunschweig	21,955	8.27	1.45	1.19	Low
Hannover	21,863	7.09	0.15	-0.15	Low
Weser-Ems (**)	19,990	6.09	1.77	0.61	Low
Düsseldorf	25,429	6.81	1.04	0.29	Intermediate
Köln	24,236	6.10	1.04	-0.53	Intermediate
Münster	18,629	6.22	0.83	-0.07	Low
Detmold (**)	21,844	6.41	1.00	0.21	Low
Arnsberg	20,706	7.63	0.74	0.15	Low
Koblenz	18,896	5.66	1.01	0.54	Low
Trier	18,021	4.55	0.73	0.03	Low
Rhein Hessen-Pfalz (**)	21,618	5.75	0.82	-0.12	Low
Saarland	20,988	6.91	0.98	0.20	Low
Schleswig-Holstein	20,680	6.99	1.12	0.79	Low
<i>National average</i>	<i>24,263</i>	<i>6.21</i>	<i>1.42</i>	<i>0.71</i>	
<i>EU eligible regions</i>	<i>24,162</i>	<i>6.42</i>	<i>2.34</i>	<i>0.99</i>	

(\*) = Borderline region between "intermediate" and high" economic performer.

(\*\*) = Borderline region between "low" and "intermediate" economic performers.

Sources: Eurostat and DG Regio - see vol.I

Map 1 Eligible regions by economic performance



**Tab. 3 Eligible regions by economic performance indicators (comparison with the national and European eligible regions)**

	GDP per capita		Rate of unemployment		Growth of GDP		Growth of GDP per employed person	
	Germany (100)	EU eligible regions (100)	Germany (100)	EU eligible regions (100)	Germany (100)	EU eligible regions (100)	Germany (100)	EU eligible regions (100)
Stuttgart	116	117	65	63	155	94	174	124
Karlsruhe	108	108	76	73	127	77	97	69
Freiburg	92	92	67	65	137	83	106	75
Tübingen	97	97	62	60	141	85	182	130
Oberbayern	136	137	52	51	206	125	235	167
Niederbayern	88	88	68	66	153	93	221	158
Oberpfalz	93	93	80	78	145	88	200	143
Oberfranken	90	90	98	95	64	39	174	124
Mittelfranken	108	108	87	85	96	58	130	93
Unterfranken	90	90	78	75	111	68	139	99
Schwaben	94	94	65	63	106	64	143	102
Berlin	83	84	241	234	-65	-39	-25	-18
Bremen	126	127	154	149	105	64	203	145
Hamburg	159	160	122	118	135	82	215	153
Darmstadt	131	132	85	82	132	80	131	93
Gießen	84	85	93	90	118	71	178	127
Kassel	90	90	114	110	110	67	180	129
Braunschweig	90	91	133	129	102	62	168	119
Hannover	90	90	114	110	11	6	-21	-15
Weser-Ems	82	83	98	95	125	75	86	61
Düsseldorf	105	105	110	106	73	44	41	29
Köln	100	100	98	95	73	45	-74	-53
Münster	77	77	100	97	58	35	-10	-7
Detmold	90	90	103	100	70	43	30	21
Arnsberg	85	86	123	119	52	31	22	15
Koblenz	78	78	91	88	71	43	76	54
Trier	74	75	73	71	52	31	5	3
Rheinessen-Pfalz	89	89	93	90	58	35	-17	-12
Saarland	87	87	111	108	69	42	28	20
Schleswig-Holstein	85	86	112	109	79	48	111	79

Sources: Eurostat and DG Regio – see vol.I

### 3. Innovation and knowledge economy

Looking at the indicators of innovation and knowledge economy, the performance of the German regions is one of the best of Europe. Out of the 30 eligible regions, 14 are classified as high performers and other 14 as intermediate ones. Below average levels of innovation potential is recorded only for the regions of Niederbayern and Weser-Ems.

This high ranking in terms of innovation potential is mainly due to a high number of EPO applications per million inhabitants: in this respect, many of the southern regions of Germany occupy the top positions in the whole EU. However, also in terms of R&D expenditures and the share of turnover due to new products a relevant number of German regions perform better than the average of the 168 EU eligible regions. The number of German regions with above average shares of employment in high-tech manufacturing is also high, while less so in hi-tech services.

Thus, apparently, German regions do not have a problem of innovation potential. However, as we shall see below, for many of them there is the problem of exploiting more effectively the innovation and knowledge potential that they already possess. In this connection, the crucial issue could be that of strengthening the channels of technological transfer from public and private centres of excellence in terms of R&D and patenting activities to the whole set of firms and especially those belonging to manufacturing (which, as we have seen, still represent the bulk of the economy for many regions).

**Tab. 4 Eligible regions by indicators of innovation and knowledge economy**

	R&D expenditures on GDP	EPO application per million inhabitants	Percent. of employment in high-tech manufact.	Percent. of employment in high-tech services	Share of population with tertiary education	Share of turnover due to products new to the firms	Overall ranking
Stuttgart	4.75	566	3.37	3.09	26.31	55.00	High
Karlsruhe	3.48	409	3.09	4.06	27.45	64.00	High
Freiburg	1.95	420	4.34	2.80	24.47	44.00	High
Tübingen	4.01	392	3.17	2.68	27.76	67.00	High
Oberbayern	4.73	628	2.32	4.21	28.46	88.00	High
Niederbayern	0.40	154	1.99	2.10	19.50	33.00	Low
Oberpfalz	1.61	309	2.20	2.60	17.90	39.00	Intermediate
Oberfranken	1.11	201	1.84	2.31	20.40	58.00	Intermediate
Mittelfranken	2.61	414	2.80	3.31	24.77	56.00	High
Unterfranken	1.77	297	1.97	2.73	21.56	70.00	High
Schwaben	1.06	273	1.77	2.74	21.80	73.00	Intermediate
Berlin	3.64	164	1.69	4.21	33.63	29.50	High
Bremen	2.28	78	1.84	3.26	20.64	33.00	Intermediate
Hamburg	1.80	192	1.74	3.36	26.02	18.00	Intermediate
Darmstadt	2.88	430	2.33	4.21	27.99	85.00	High
Gießen	1.81	227	2.88	3.00	23.24	30.00	High
Kassel	0.72	102	1.71	2.44	20.65	55.00	Intermediate
Braunschweig	5.73	238	1.83	2.66	21.29	100.00	High
Hannover	1.87	205	1.65	2.95	22.17	97.00	High
Weser-Ems	0.48	88	0.94	2.39	20.18	32.00	Low
Düsseldorf	1.43	294	1.40	2.95	21.33	35.00	Intermediate
Köln	3.19	312	1.50	3.43	25.86	92.00	High
Münster	0.90	172	1.07	2.36	22.43	53.00	Intermediate
Detmold	1.05	193	1.55	2.21	22.27	50.00	Intermediate
Arnsberg	1.16	177	1.41	2.22	19.86	42.00	Intermediate
Koblenz	0.65	160	1.40	2.69	22.17	62.00	Intermediate
Trier	0.84	87	1.37	2.82	22.57	50.00	Intermediate
Rheinessen-Pfalz	3.23	432	1.57	3.07	23.83	62.00	High
Saarland	0.99	132	1.84	2.72	19.21	91.00	Intermediate
Schleswig-Holstein	1.10	121	1.83	3.07	22.03	79.00	Intermediate
<i>EU eligible Regions</i>	<i>1.70</i>	<i>136</i>	<i>1.49</i>	<i>3.23</i>	<i>24.81</i>	<i>35.21</i>	

Sources: Eurostat and Community Innovation Survey - see vol. I

## 4. Accessibility

### 4.1. Access to transport infrastructure

The indicator of connectivity to transport terminals by car indicates that many German regions (actually, as shown below, 18 out of 30) seem affected by transport problems due to some drawbacks in the secondary network of roads. This finding is obviously affected by the type of indicator that has been employed and of the high level of regional aggregation<sup>1</sup>. Our measure of connectivity, in fact, does not take into account the endowment and the effective use of the secondary network of rail, that is the alternative (and, from an environmental point of view, better) way, with respect to the car, to reach central destinations or primary transport terminals from the non-central zones of the regions.

As a consequence the issue of connectivity must be treated with caution and subject to a deeper analysis of the endowment of different transport infrastructures (see below). Obviously, this does not mean that for the above mentioned 18 regions there is not real need to improve the secondary network of roads.

Breaking the NUTS2 regions down to the NUTS3 level it turns out that about 40% of the NUTS3 regions in this cluster might show bottlenecks of the road infrastructure and could be considered for improving the road infrastructure endowment.

The situation significantly changes when we go to consider the indicator of multimodal potential accessibility (second column, table 5), from which it emerges an overall positive score for the eligible German regions. In fact, all the regions exhibit an intermediate or high degree of accessibility.

As a consequence, for German eligible regions, interventions towards access to transport are called for, but a possible priority arises only for regional connectivity.

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<sup>1</sup> Moreover, some more recent data exist for Germany, but not comparable with other countries. For details of empirical research see the paper by W. Rothengatter and A. Schaffer *The Impact of Transport Infrastructure on Regional Competitiveness*, in vol.III of this Report.

**Tab. 5 Eligible regions by indicators of access to transport**

	Connectivity to transport terminals by car	Multimodal potential accessibility
Stuttgart	Low	High
Karlsruhe	Low	High
Freiburg	Low	High
Tübingen	Low	High
Oberbayern	Low	High
Niederbayern	Low	Intermediate
Oberpfalz	Low	Intermediate
Oberfranken	Low	Intermediate
Mittelfranken	Intermediate	High
Unterfranken	Low	High
Schwaben	Low	Intermediate
Berlin	Intermediate	High
Bremen	High	High
Hamburg	High	High
Darmstadt	Low	High
Gießen	Low	High
Kassel	Low	Intermediate
Braunschweig	Low	Intermediate
Hannover	Intermediate	High
Weser-Ems	Intermediate	Intermediate
Düsseldorf	Intermediate	High
Köln	Intermediate	High
Münster	Intermediate	High
Detmold	Low	Intermediate
Arnsberg	Intermediate	High
Koblenz	Low	High
Trier	Low	High
Rheinessen-Pfalz	Low	High
Saarland	Intermediate	Intermediate
Schleswig-Holstein	High	Intermediate

Source: ESPON - see vol.I

### Transport context

Between 1990 and 2001<sup>2</sup>, passengers transport demand trends were below EU 15 ones for all modes, in spite of the fact that, according to DG TREN estimates, motorization is 10% higher than the European average, 539 cars per 1000 inhabitants against 488. Looking at the freight statistics for the same period, road haulage shows an increase much higher than the average values and a parallel decline of railways, although the shares of tons km travelling by railways in Germany in the year 2001 are still higher than the EU 15 average value.

Modal shares for both freight and passengers are more in favour of railways than in the EU 15, and consequently road modes are below the average European values; the same happens to freight inland waterways which, due to the Rhine river transport, plays a significant role.

**Tab. 6 Trends in travel demand - pkm 1990 = 100**

Years	Cars	Bus and coaches	Railway	Urban rail	Air
1970	58	93	102	115	
1980	75	123	102	100	
1990	100	100	100	100	100
1995	107	94	123	100	137
2000	105	94	121	98	187
2001	103	94	121	100	176
2001 EU 15	120	112	115	115	182

Source: EC -DGTREN.

<sup>2</sup> European Commission, Directorate General for Energy and Transport, European Union Energy and Transport data, 2003.

**Tab. 7 Trends in travel demand - tkm 1990 = 100**

Years	Road haulage	Railway	Inland waterways
1970	53	111	89
1980	76	119	94
1990	100	100	100
1995	126	68	117
2000	156	76	121
2001	159	73	118
2001 EU 15	143	95	117

Source: EC -DGTREN.

**Tab. 8 Modal shares by mode of land transport - Passengers - 2001**

	Cars	Bus and coaches	Railway	Urban rail	Powered two wheels
Germany	80.8	7.9	8.5	1.0	1.9
EU 15	80.4	8.8	6.5	1.0	3.2

Source: EC -DGTREN.

**Tab. 9 Modal shares by mode of land transport - Freight - 2001**

	Road	Rail	Inland waterways	Pipelines
Germany	69.5	14.7	12.8	3.1
EU 15	75.5	13.1	6.8	4.7

Source: EC -DGTREN.

### *Trends projections<sup>3</sup>*

Baseline trends in transport demand, emissions and vehicle stock are derived from the Tremove study<sup>4</sup> for the period 2005-2010 and are used as background scenario for the regional analysis.

<sup>3</sup> Trends have been derived from the TREMOVE database, data cannot be compared with the past trends presented in the previous section as the transport modes as well as the type of flows considered are different. Nevertheless they represent a likely trend in the absence of specific transport policies.

<sup>4</sup> Tremove 2 Model has been developed by K.U Leuven and Transport & Mobility Leuven together with WSP, TRT, TRL, INFRAS and COWI, on behalf of DG ENV (2005)

According to the Tremove baseline until the year 2020 (which is derived by the application of the Scenes strategic transport model of Europe), passengers travel demand is expected to increase in line with the trend estimated for the EU 15, but while car and air traffic are expected to increase slightly less, train, coach and slow modes will increase at a higher rate. The expected trends for freight are more in favour of inland waterways, which will enlarge their share in the overall modal split to the detriment of both road haulage and railways.

Road vehicle stock car and trucks, are expected to increase by 19% and 35% respectively in the forthcoming 15 years. In spite of the estimated growth of freight and passengers km, as an effect of fleet renewal and technological progress, emissions of the transport sector will decline for NO<sub>x</sub>, VOC and PM, with the exception of CO<sub>2</sub> (which will remain stable) and N<sub>2</sub>O (which will increase by approximately 20%). As the estimates refer to the whole country, their trends could be quite different in the specific regions, and emissions related problems will remain serious in densely populated areas.

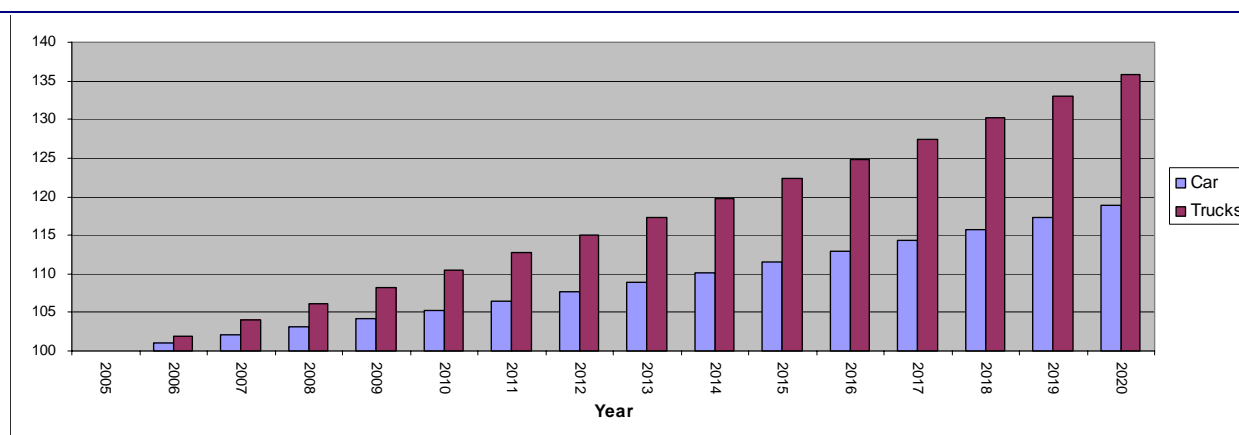
Nothing can be said about congestion, as no data is available, nevertheless the trends in travel demand suggest that level of congestion of the road network will probably increase, particularly in the urban conurbations.

Tab. 10 Trends in travel demand by mode 2005-2020 - pkm and ton km, percentage change

Transport mode	Germany	EU 15
<b>Passengers</b>		
Car	22.3	22.5
Rail	17.4	6.1
Coach	1.9	-6.8
Urban Public transport	1.1	-5.0
Air	81.1	82.1
Slow	1.9	-4.4
<b>Total</b>	<b>22.3</b>	<b>21.4</b>
<b>Freight</b>		
Trucks	42.1	48.3
Rail	-9.3	-8.2
Inland Waterways	65.1	42.3
<b>Total</b>	<b>46.8</b>	<b>52.0</b>

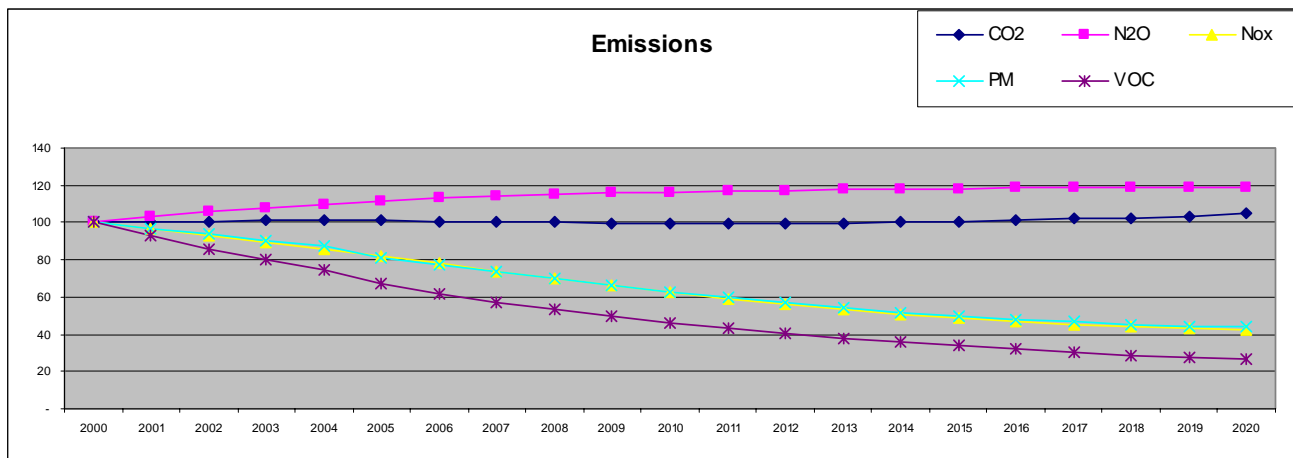
Source: Tremove.

Fig. 1 Road vehicles stock



Source: Tremove.

Fig. 2 Trends in transport emissions



Source: Tremove.

Regional analysis

Population density is highly polarised among the different German eligible regions, with four “urban” regions, Berlin, Hamburg, Bremen and Dusseldorf (Ruhr basin), achieving a density five to ten time higher than the average. Given that passengers travel demand is strictly correlated to population, passengers traffic flows density shows the same distribution of the population density, highly concentrated in the densely populated areas. The volume of tons attracted/generated has a slightly different pattern from the passenger one, being more concentrated in a few regions like Freiburg, Düsseldorf, Arnsberg, Saarland, Hamburg and Bremen.

Fig. 3 Population density

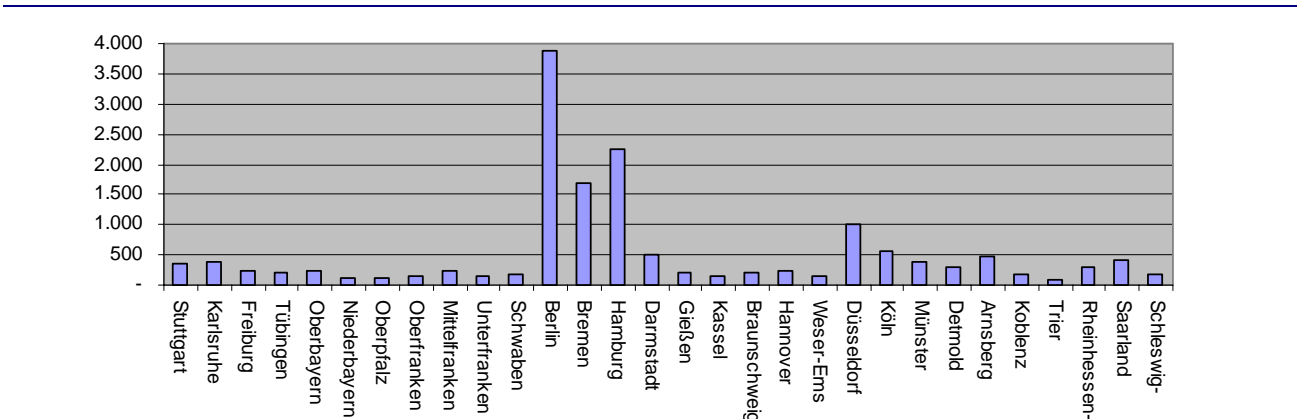
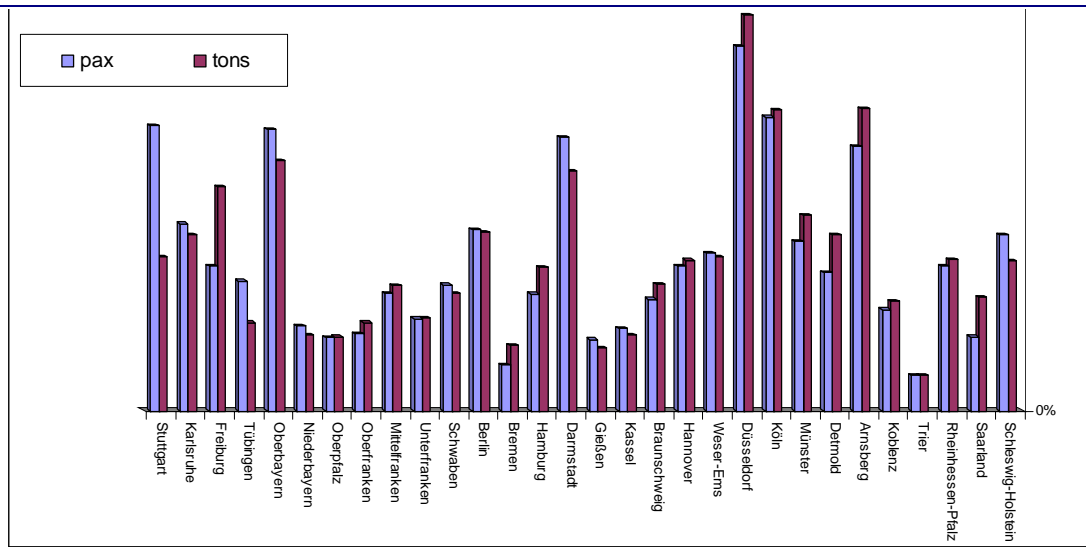


Fig. 4 Traffic flows % of total traffic attracted/generated by each region

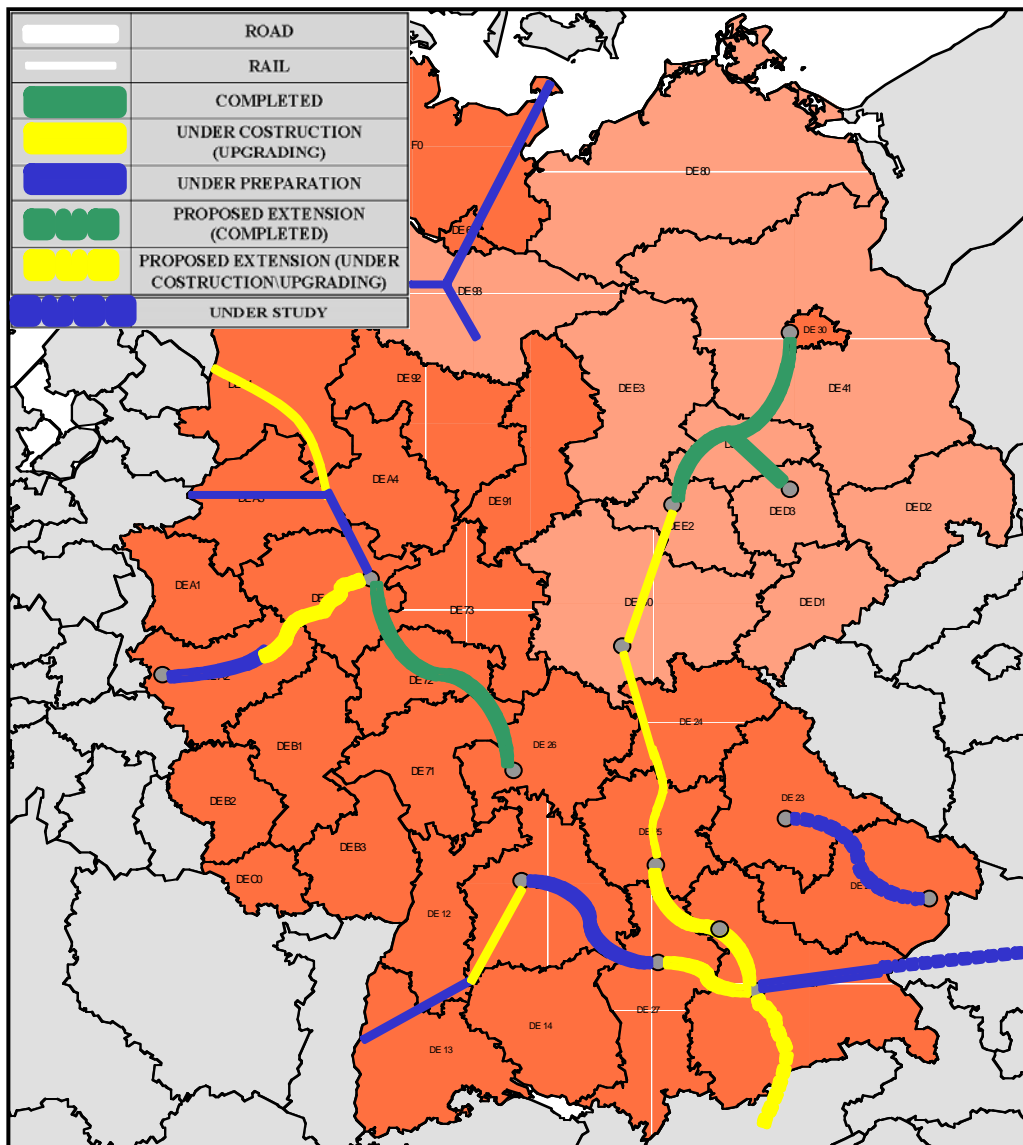


Source: Scenes.

Many TEN-T priority projects are partially located in Germany:

- the high speed rail line Paris-Bruxelles–Köln-Amsterdam-London
- the high speed rail line of the East
- the railway line Paris-Strasbourg-Stuttgart-Wien-Bratislava
- The railway line Berlin Verona/Milano-Bologna-Napoli-Messina-Palermo
- The Betuwe line
- The Rhine-Meuse-Main-Danube waterway
- The railway line Athina-Sofia- Budapest-Wien-Prague -Nurnberg/Dresden

Fig. 5 TEN-T priority projects



## 4.2. Access to telecommunications and information technologies

Also with respect to the access to telecommunications and the diffusion of digital technologies all the German regions record very good performances. In fact, according to the indicators that have been used, none of them is inserted in the group of regions with low access to TCL/ICT and 12 out of 30 are classified as best performers. This is mainly due to extremely high shares of firms with Internet access and web sites while in terms of households access to digital

technologies the situation is good but not excellent, especially if one looks at the shares of households with Internet access and broadband Internet access.

Thus, apart from a more intensive diffusion of broadband (which, however, seems a national rather than regional need), the access to TLC/ICT does not appear as one of the main problems of German regions.

**Tab. 11 Eligible regions by access to TLC/ICT**

	Share of firms with Internet access	Share of firms with a Web site	Share of households with PCs	Share of households with Internet access	Share of households with broadband Internet access	Overall ranking
Stuttgart	98.2	75.5	49.7	29.0	2.5	Intermediate
Karlsruhe	97.4	74.3	49.7	29.0	2.5	Intermediate
Freiburg	95.3	71.4	49.7	29.0	2.5	Intermediate
Tübingen	95.8	72.1	49.7	29.0	2.5	Intermediate
Oberbayern	99.0	78.0	56.2	36.6	2.4	High
Niederbayern	94.4	70.1	56.2	36.6	2.4	High
Oberpfalz	95.6	71.8	56.2	36.6	2.4	High
Oberfranken	95.1	71.1	56.2	36.6	2.4	High
Mittelfranken	97.5	74.5	56.2	36.6	2.4	High
Unterfranken	95.1	71.1	56.2	36.6	2.4	High
Schwaben	95.6	71.8	56.2	36.6	2.4	High
Berlin	94.0	69.6	50.9	35.3	4.1	Intermediate
Bremen	98.8	76.3	55.4	44.0	0.0*	High
Hamburg	99.0	80.6	71.7	61.1	7.1	High
Darmstadt	99.0	77.2	45.4	29.2	6.0	Intermediate
Gießen	94.0	69.6	45.4	29.2	6.0	Intermediate
Kassel	94.7	70.6	45.4	29.2	6.0	Intermediate
Braunschweig	95.3	71.4	54.9	36.6	2.3	High
Hannover	95.6	71.8	54.9	36.6	2.3	High
Weser-Ems	93.4	68.7	54.9	36.6	2.3	Intermediate
Düsseldorf	96.9	73.6	47.2	32.7	3.4	Intermediate
Köln	96.4	73.0	47.2	32.7	3.4	Intermediate
Münster	93.0	68.2	47.2	32.7	3.4	Intermediate
Detmold	95.3	71.4	47.2	32.7	3.4	Intermediate
Arnsberg	94.6	70.4	47.2	32.7	3.4	Intermediate
Koblenz	93.3	68.6	56.2	32.7	3.6	Intermediate
Trier	92.7	67.7	56.2	32.7	3.6	Intermediate
Rheinessen-Pfalz	95.2	71.3	56.2	32.7	3.6	High
Saarland	94.2	69.9	40.1	25.5	1.1	Intermediate
Schleswig-Holstein	94.2	69.9	54.1	35.0	1.8	Intermediate
<i>EU eligible Regions</i>	<i>86.01</i>	<i>56.33</i>	<i>49.29</i>	<i>35.19</i>	<i>5.05</i>	

Sources: ESPON and INRA - see vol. I

\*According to recent national data broadband access in Bremen is high - The context is evolving rapidly everywhere.

Overall, Germany is credited for being a “high computing” culture, and one in which IT is well developed and widely adopted and where IT access and uptake is high; in fact it may be located at the 2<sup>d</sup> level for both PC and Internet availability by both households and firms<sup>5</sup>. On the contrary, its positioning the TLC industry is not as good, especially in mobile communication, and it can be ranked at the 2<sup>nd</sup> level in fixed line penetration, but only at the 3<sup>d</sup> level in mobile telephony.

This is also well represented in German expenditure on ICT over GDP, which is slightly below the EU25 average (6.10% compared to 6.25%).

In particular when non-Objective 1 regions are taken into account, German regions provide a wide access to ICT and they always come out among the best performers, and on the top of the league across the board – for supply as well as demand side, for mature as well as emerging or leading technologies. Germany records the best penetration for businesses, i.e. the highest Internet access and the 3<sup>rd</sup> highest for web site, but it shows also very high penetration for households, i.e. the 2<sup>nd</sup> highest for PC penetration and Internet access by households. It shows also a very good performance for mature technologies (Internet access by firms and households, PC penetration). It is only lagging somehow in the leading technologies of all, broadband Internet access, where its performance is lacklustre.

In Germany supply and demand are synchronized and have developed jointly, and have now reached a similar stage of development, as it is very often the case.

**Tab. 12 Ranking of the better performing German eligible region by access to TLC/ICT**

	Share of firms with Internet access	Share of firms with a Web site	Share of households with PCs	Share of households with Internet access	Share of households with broadband Internet access
Ranking	1	3	2	2	9

Germany is, however, a country where regional differences are very strong, first of all, when economic performance is considered, because regions show different levels of performance and high, intermediate and low performers may be found next to each other. ICT uptake is

<sup>5</sup> see Annex III

relatively higher than warranted by economic performance, but the latter is usually reflected in the level of access to ICT, and regions with a low performance are likely to get at least an intermediate access and regions with intermediate performance are likely to get high access. The gap between the top (Hamburg, above all) and the bottom performers (Trier, Saarland, Bremen) is very wide and this is a country where differences are very often the largest, especially when the demand side is considered (it is the largest for PC penetration and Internet access).

Regional differences are lower when broadband Internet access is considered, further signalling the introductory phase of such an application.

Any stronger pattern and any east-west ICT divide are ruled out by the limitation and relative homogeneity of regions considered within the Competitiveness Objective. Differences have probably to do more with the metropolitan or rural characteristic of the area, whereby urban and metropolitan areas have a much higher ICT uptake.

Heterogeneity in the supply side is much lesser, although still relevant, and Germany from this point of view is located in the middle of the ranking (6<sup>th</sup> and 4<sup>th</sup>, respectively, for Internet access and web site penetration).

**Tab. 13 Max and min value, by geographical area**

	Share of firms with Internet access	Share of firms with a Web site	Share of households with PCs	Share of households with Internet access	Share of households with broadband Internet access
High	99.0	80.6	71.7	61.1	7.1
	several	Hamburg	Hamburg	Hamburg	Hamburg
Low	92.7	67.7	40.1	25.5	0.0
	Trier	Trier	Saarland	Saarland	Bremen

**Tab. 14 Ranking of regional spread, by variable**

	Share of firms with Internet access	Share of firms with a Web site	Share of households with PCs	Share of households with Internet access	Share of households with broadband Internet access
Ranking	6	4	1	1	4



## 5. Environment and risk prevention

### 5.1 General analysis

Starting from the issue of energy sustainability, table 15 shows that 12 of the 30 German regions eligible for the competitiveness objective are affected by this kind of problem: with respect to the average of the 168 European regions, they perform lower in terms of electricity efficiency, self-sufficiency and renewable sources of electric energy. It must be added, however, that almost all of them (mainly located in the northern and central-western part of Germany) are characterised by low economic performances, so that a strong priority for interventions in the field of energy, as opposed to measures for enhancing their competitiveness, cannot be recommended. Finally, it must be pointed out that energy data are available only at NUTS1 level, so that the potential differences among the NUTS2 regions of the same area cannot be taken into account.

With respect to the transportation impact – whose indicators are illustrated in table 16 – the majority of German regions (21) record satisfactory performances. However, this is not the case of the most urbanised regions of Berlin, Bremen and Hamburg characterised by a high transportation impact. The same happens to the region of Saarland and those of Düsseldorf, Köln, Münster, Detmold and Arnsberg (the latter belong to the same NUTS1 area). As it was for the issue of energy sustainability, only those with intermediate or high economic performances or highly urbanised (i.e. with a very high population density) should give a priority to the reduction of transportation impact.

Moving to the endowment of natural assets, table 17 shows that there are 9 German regions with below average performances. Among them, as expected, there are the three regions already defined as highly urbanised plus those of Stuttgart and Detmold and four regions located in North-Western Germany (from Weser-Ems down to Köln). Also in this case, in order to identify a priority for interventions in the field of natural areas, the region needs not to have a bad economic performance.

For the large majority of German regions the prevention of natural risk is not a significant policy priority. However, table 18 indicates that there are four neighbouring regions located in Southern Germany that are significantly affected by this problem: Stuttgart, Oberbayern, Niederbayern and Schwaben.

**Tab. 15 Eligible regions by indicators of energy sustainability**

	Electricity efficiency	Electricity self-sufficiency	Renewable sources of electric energy	Overall ranking
Stuttgart	3.607	0.215	0.160	Intermediate
Karlsruhe	3.607	0.215	0.160	Intermediate
Freiburg	3.607	0.215	0.160	Intermediate
Tübingen	3.607	0.215	0.160	Intermediate
Oberbayern	3.815	0.222	0.137	Intermediate
Niederbayern	3.815	0.222	0.137	Intermediate
Oberpfalz	3.815	0.222	0.137	Intermediate
Oberfranken	3.815	0.222	0.137	Intermediate
Mittelfranken	3.815	0.222	0.137	Intermediate
Unterfranken	3.815	0.222	0.137	Intermediate
Schwaben	3.815	0.222	0.137	Intermediate
Berlin	2.776	0.120	0.000	Low
Bremen	4.206	0.360	0.000	Intermediate
Hamburg	4.709	0.131	0.127	Intermediate
Darmstadt	3.911	0.160	0.092	Intermediate
Gießen	3.911	0.160	0.092	Intermediate
Kassel	3.911	0.160	0.092	Intermediate
Braunschweig	2.772	0.209	0.022	Low
Hannover	2.772	0.209	0.022	Low
Weser-Ems	2.772	0.209	0.022	Low
Düsseldorf	2.391	0.190	0.014	Low
Köln	2.391	0.190	0.014	Low
Münster	2.391	0.190	0.014	Low
Detmold	2.391	0.190	0.014	Low
Arnsberg	2.391	0.190	0.014	Low
Koblenz	2.417	0.089	0.081	Low
Trier	2.417	0.089	0.081	Low
Rheinessen-Pfalz	2.417	0.089	0.081	Low
Saarland	2.763	0.388	0.005	Intermediate
Schleswig-Holstein	4.158	0.406	0.022	High
<i>EU eligible Regions</i>	<i>3.646</i>	<i>0.254</i>	<i>0.202</i>	

Source: EUROSTAT - NEW CRONOS (Regio) - see vol I

Finally, the presence of technological risk, as measured by the density of polluting sites, is particularly high in 8 of the 30 German regions: the three highly urbanised areas of Berlin, Bremen and Hamburg plus Düsseldorf, Köln, Münster, Detmold and Arnsberg. However, it should be noticed that these data are available for Germany only at the level of NUTS1, so that we do not know whether the last five regions (which form a NUTS1 area) are affected to the same extent by the presence of a high technological risk. Potentially, the same aggregation problem could also affect other NUTS2 regions, for which we do not have disaggregated information. First, according to field analysis, also the regions of Saarland and Rhein.

**Tab. 16 Eligible regions by indicators of transportation impact**

	Vehicles density	Non-fuel transportation	Traffic intensity	Overall ranking
Stuttgart	0.233	0.034	0.566	Intermediate
Karlsruhe	0.229	0.034	0.566	Intermediate
Freiburg	0.139	0.034	0.566	Intermediate
Tübingen	0.125	0.034	0.566	Intermediate
Oberbayern	0.148	0.044	0.091	Low
Niederbayern	0.078	0.044	0.091	Low
Oberpfalz	0.074	0.044	0.091	Low
Oberfranken	0.101	0.044	0.091	Low
Mittelfranken	0.144	0.044	0.091	Low
Unterfranken	0.100	0.044	0.091	Low
Schwaben	0.112	0.044	0.091	Low
Berlin	1.471	0.082	11.037	High
Bremen	0.774	0.053	6.693	High
Hamburg	1.143	0.079	8.432	High
Darmstadt	0.309	0.068	0.034	Low
Gießen	0.121	0.068	0.034	Low
Kassel	0.095	0.068	0.034	Low
Braunschweig	0.122	0.042	-0.167	Low
Hannover	0.143	0.042	-0.167	Low
Weser-Ems	0.096	0.042	-0.167	Low
Düsseldorf	0.541	0.023	1.773	High
Köln	0.324	0.023	1.773	High
Münster	0.208	0.023	1.773	High
Detmold	1.725	0.023	1.773	High
Arnsberg	0.259	0.023	1.773	High
Koblenz	0.119	0.025	-0.015	Intermediate
Trier	0.068	0.025	-0.015	Intermediate
Rheinhessen-Pfalz	0.185	0.025	-0.015	Intermediate
Saarland	0.257	0.013	1.319	High
Schleswig-Holstein	0.106	0.006	-0.265	Intermediate
<i>EU eligible Regions</i>	<i>0.218</i>	<i>0.031</i>	<i>0.400</i>	

Source: EUROSTAT - NEW CRONOS (Regio).

**Tab. 17 Eligible regions by indicators of natural/rural assets**

	Degree of protection	Wilderness degree	Anthropic degree	Urban/Rural typology	Overall ranking
Stuttgart	0.039	0.319	0.087	1.494	Low
Karlsruhe	0.077	0.458	0.109	1.000	Intermediate
Freiburg	0.090	0.476	0.063	1.000	Intermediate
Tübingen	0.059	0.329	0.058	1.000	Intermediate
Oberbayern	0.097	0.367	0.064	2.289	Intermediate
Niederbayern	0.053	0.313	0.034	4.145	Intermediate
Oberpfalz	0.054	0.426	0.038	3.904	Intermediate
Oberfranken	0.035	0.378	0.046	2.046	Intermediate
Mittelfranken	0.024	0.331	0.064	3.190	Intermediate
Unterfranken	0.093	0.413	0.051	3.368	Intermediate
Schwaben	0.075	0.302	0.058	2.706	Intermediate
Berlin	0.047	0.195	0.670	1.000	Low
Bremen	0.036	0.025	0.497	1.001	Low
Hamburg	0.208	0.066	0.550	1.000	Low
Darmstadt	0.040	0.418	0.126	1.000	Intermediate
Gießen	0.080	0.406	0.068	2.085	Intermediate
Kassel	0.073	0.413	0.052	1.892	Intermediate
Braunschweig	0.073	0.338	0.075	1.000	Intermediate
Hannover	0.038	0.197	0.077	2.343	Intermediate
Weser-Ems	0.038	0.103	0.052	2.132	Low
Düsseldorf	0.036	0.128	0.255	1.000	Low
Köln	0.053	0.269	0.167	1.000	Low
Münster	0.033	0.107	0.100	1.000	Low
Detmold	0.072	0.200	0.093	1.000	Low
Arnsberg	0.063	0.411	0.134	1.000	Intermediate
Koblenz	0.060	0.459	0.059	1.565	Intermediate
Trier	0.042	0.412	0.032	3.780	Intermediate
Rheinessen-Pfalz	0.092	0.362	0.085	1.094	Intermediate
Saarland	0.072	0.353	0.140	1.000	Intermediate
Schleswig-Holstein	0.098	0.094	0.060	2.188	Intermediate
<i>EU eligible Regions</i>	<i>0.088</i>	<i>0.310</i>	<i>0.103</i>	<i>2.819</i>	

Source: IRENA Database and ESPON-CORINE Landcover Database.

**Tab. 18 Eligible regions by indicators of natural and technological risk**

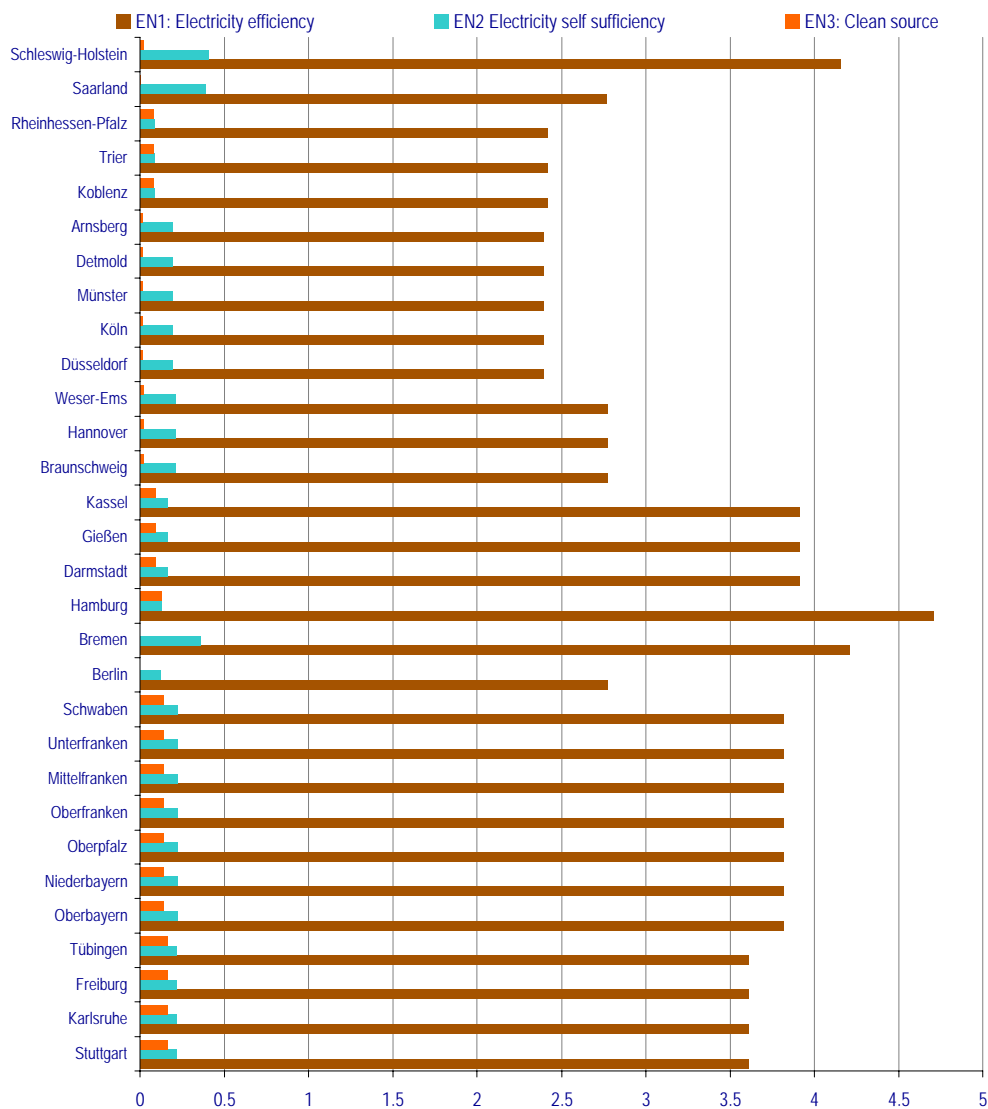
	Natural risk			Technological risk	
	Flood hazard potential	Share of burnt areas	Overall ranking	Polluting sites density	Overall ranking
Stuttgart	2.886	0.000	High	0.417	Intermediate
Karlsruhe	1.647	0.000	Intermediate	0.417	Intermediate
Freiburg	1.789	0.000	Intermediate	0.417	Intermediate
Tübingen	2.827	0.112	High	0.417	Intermediate
Oberbayern	1.993	0.570	High	0.337	Intermediate
Niederbayern	1.101	1.258	Intermediate	0.337	Intermediate
Oberpfalz	0.951	0.000	Intermediate	0.337	Intermediate
Oberfranken	0.769	0.000	Intermediate	0.337	Intermediate
Mittelfranken	1.595	0.000	Intermediate	0.337	Intermediate
Unterfranken	1.418	0.000	Intermediate	0.337	Intermediate
Schwaben	2.229	0.100	High	0.337	Intermediate
Berlin	0.000	0.000	Low	1.906	High
Bremen	0.000	0.000	Low	4.455	High
Hamburg	1.000	0.000	Intermediate	2.649	High
Darmstadt	1.190	0.000	Intermediate	0.341	Intermediate
Gießen	0.701	0.000	Intermediate	0.341	Intermediate
Kassel	0.497	0.000	Intermediate	0.341	Intermediate
Braunschweig	0.631	0.000	Intermediate	0.548	Intermediate
Hannover	0.023	0.000	Low	0.548	Intermediate
Weser-Ems	0.000	1.604	Intermediate	0.548	Intermediate
Düsseldorf	0.000	1.512	Intermediate	0.951	High
Köln	0.000	0.407	Low	0.951	High
Münster	0.000	0.000	Low	0.951	High
Detmold	0.000	0.000	Low	0.951	High
Arnsberg	0.000	0.000	Low	0.951	High
Koblenz	0.309	0.000	Low	0.247	Intermediate
Trier	0.020	0.000	Low	0.247	Intermediate
Rheinessen-Pfalz	0.950	0.000	Intermediate	0.247	Intermediate
Saarland	0.861	0.000	Intermediate	0.506	Intermediate
Schleswig-Holstein	0.089	0.000	Low	0.235	Intermediate
<i>EU eligible Regions</i>	<i>0.763</i>	<i>1.622</i>		<i>0.447</i>	

Source: ESPON Database and EPER-EEA - see vol. I

## 5.2 Specific Features

### Energy context

Fig. 6 Energy Indicators



Production and consumption of energy is characterized by the massive recourse to fossil fuel energy. Electricity is still mainly produced from fossil fuel (coal) and nuclear power plant. The transport sector is the first consumer of fossil energy, while industry remains the first consumer of electricity. The share of renewable energy in the energy balance is still modest,

even if the renewable energy production has been increased in the last years, reaching 2.8% of the total gross energy production<sup>6</sup>.

### *EN1 – Energy efficiency and renewable energy*

At regional level, the average *electricity intensity* is equal to around 3 (millions euros of GDP per gigawatt hours consume), with a minimum of 2.39 for *Düsseldorf, Köln, Münster, Detmold* and *Arnsberg* and a maximum of 4.7 for *Hamburg*. 18 Regions demonstrate a performance beyond the actual average, while 12 are below the average.

The low level of *electricity intensity* is mainly due to the presence of a strong industrial sector, while the high level could be explained by the greater weight of services in the regional economy or the traditional low rate of industrialisation. The past local policies in promoting better efficiency could also explain the relatively good performance of certain regions.

### *EN2 – Electricity self-sufficiency; EN3 – “Clean” sources*

As regards the electricity self-sufficiency indicator, 13 regions are characterized by scarce local electricity production capacities (lower than the Country average). Such regions are the following ones: *Berlin, Hamburg, Darmstadt, Gießen, Kassel, Düsseldorf, Köln, Münster, Detmold, Arnsberg, Koblenz, Trier* and *Rheinhessen-Pfalz*. While, the auto-sufficient regions are represented by the remaining 17. The regions with the highest potential (the most self-sufficiency) are *Bremen, Saarland* and *Schleswig-Holstein*.

There is no actual region with a high potential in “clean” energy production capacity (in solar, wind, biomass, tidal and geothermal energy). The maximum registered rate is equal to 16% (of the present total energy production capacity) for the regions of *Stuttgart, Karlsruhe, Freiburg* and *Tübingen*. Nineteen regions have a capacity percentage under 5% (more than 60% of the German eligible regions). According to the Sustainable German Strategy, the potential growth in hydropower production will be limited, within the next decade, so further development in “clean” energy production capacity would mainly concern solar and wind energy sources.

According to the “Composite indicator of energy sustainability” (the composite indicator which derives from the three previous indicators), the German regions could be divided in three clusters:

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<sup>6</sup> However, if we abstract from hydro-power and consider recent trends, the situation is probably better, particularly with wind energy.

- low sustainable regions (around 40% of the eligible regions),
- intermediate regions (roughly 55% of the regions) and
- high energy sustainable regions (only one: *Schleswig-Holstein*).

The low and intermediate energy sustainability are mainly due to a low level of electricity efficiency and auto-sufficiency in electricity production capacity, while the “clean” energy production capacity does not seem to be a key indicator for ranking.

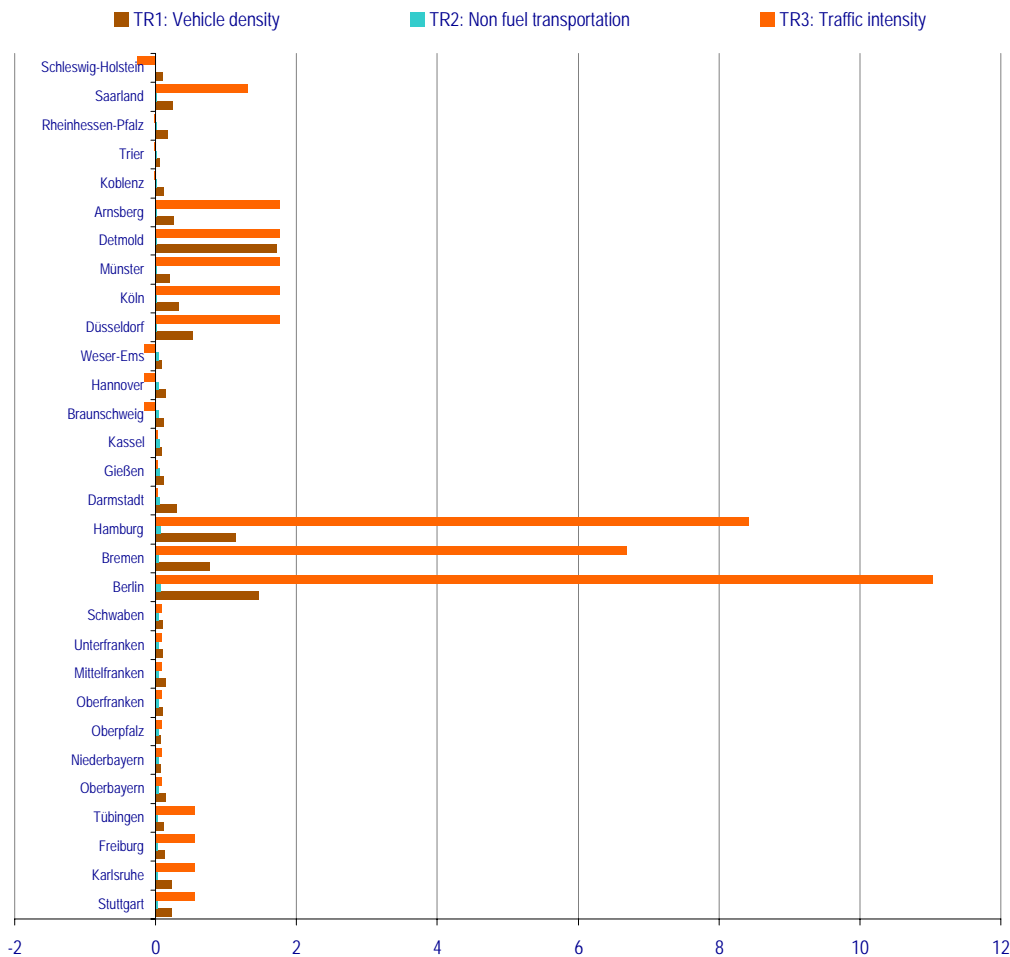
The Actual Sustainable German Strategy is based on the decoupling of energy consumption and economic growth, with the objective of reducing greenhouse emissions and decreasing the energy intensity ratio. The typologies of interventions the structural funds would finance, in this policy context, are:

- substitution in traditional energy carrier: from coal to gas, or from coal to renewable energy in the electricity production sector – for regions with a high electricity production capacity;
- promotion of electricity efficiency in industrial and residential sectors (processes and product innovation) in all the eligible regions but with major emphasis in the regions where energy intensity is low;
- promotion of renewable energy production and consumption (solar, wind and biomass). In particular in the regions with a high-energy demand and a low capacity in electricity production.

### *Transport and environment*

The share of energy consumption by transport is increasing in Germany in the last years. Transport related CO<sub>2</sub> emissions have nearly doubled in the past two decades. Major environmental pressures by the transport sector (air quality, land consumption, and congestion) are mainly due to road traffic.

Fig. 7 Transport Indicators



1) Every transport indicator - TR1, TR2 and TR3 - should be interpreted according its own dimensions (and colour in column chart). Indicators cannot be compared with each other because of the difference in scales used. See Annex.

The value of the traffic intensity indicator (TR3) could be some time negative because of the method of normalization used to calculate it. Such a normalization method allows us to summarize the two heterogeneous variables which make up the indicator ("total number of driven intra-regional trips/Total Area" and "Total number of kilometers made by journeys produced-generated by the region/Total Area). Values produced by normalization are relative and not absolute values.

*TR1 – Vehicles density; TR3 – Traffic intensity*

Traffic intensity and vehicle density are not equally distributed across the Country. The Regions concerned by a high vehicle density (above the average of around 3,000 vehicles per km<sup>2</sup>) are *Berlin, Bremen, Hamburg, Düsseldorf, Köln* and *Detmold*; while, the most "preserved" regions (under the limit of 1.000 vehicles per km<sup>2</sup>) are *Niederbayern, Oberpfalz, Unterfranken, Kassel, Weser-Ems* and *Trier*. High traffic intensity is strictly correlated to high vehicle density, thus the regions concerned by traffic also have a high vehicle density, like the previously mentioned ones, with in addition the regions of *Münster, Arnsberg* and *Saarland*.

### TR2 – Non fuel transportation

Non fuel transportation – mainly represented by train and metropolitan network transport - is principally developed in urban centres. So, the most concerned regions are *Berlin, Bremen* and *Hamburg*. Non fuel transportation is particularly low in 14 regions (around 50% of the eligible regions), where electricity consumption levels in the Transport sector are under 5% of the total electricity consumption.

Regarding transport and the environment indicators and referring to the “Composite indicator of Transportation impact”, three clusters of regions could be differentiated:

- The first cluster (30% of the eligible regions) comprises regions characterized by high traffic intensity and high vehicle density.
- The second cluster (around 43% of the eligible regions) regards regions with a relatively low traffic intensity and low vehicle density and with a little developed non fuel transportation sector.
- The third one concerns the intermediate level regions (8 regions).

The first cluster could be further differentiated in regions where non fuel transportation is quite developed, like *Berlin, Bremen, Hamburg*, and regions where electricity consumption by transport remains low (compared to the total electricity consumption), the case of *Düsseldorf, Köln, Münster, Arnsberg* and *Detmold*.

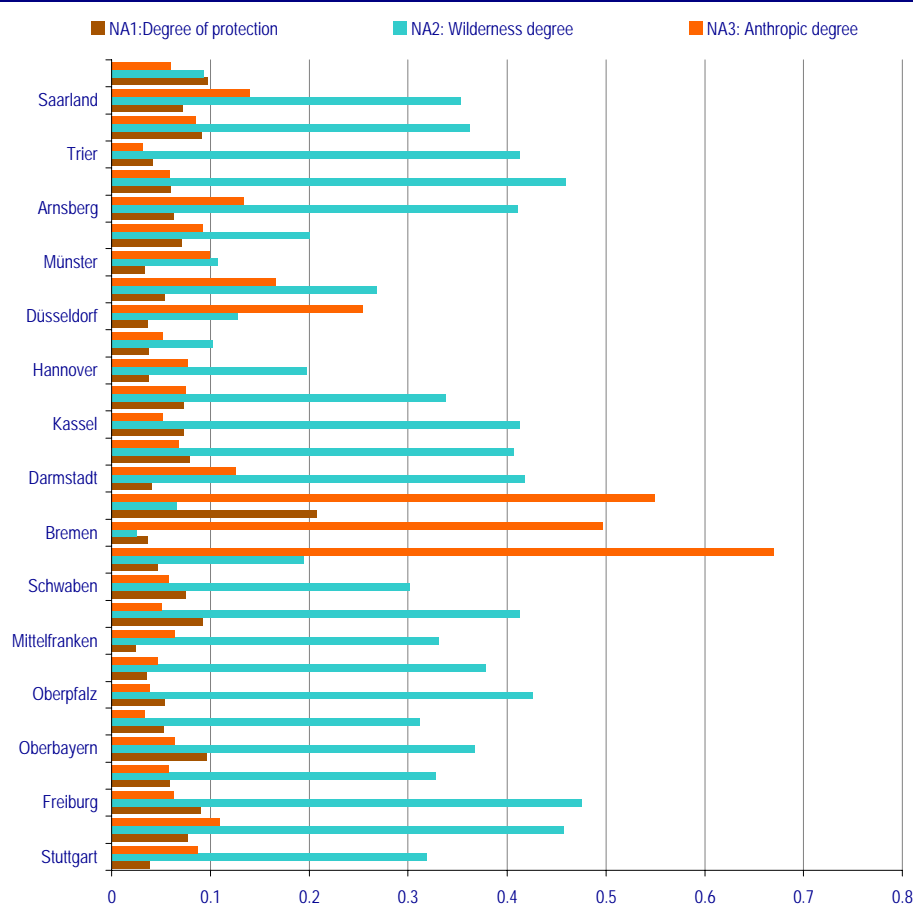
In this context, sustainable development of transport sector should require further attention in:

- the development of non fuel transportation systems in high density urban centres and in regions where traffic intensity and vehicle density are high, but especially where non fuel transportation is under the Country average (see the second cluster, and in the first cluster the second group of regions);
- technological progress towards high-energy efficiency in vehicles motorization (in all the three clusters, and especially in the first one).

Nature and biodiversity

The country is comprised in 3 bio-geographical regions : Alpines, Atlantic and Continental regions.

Fig. 8 Biodiversity Indicators



Indicator NA1 – Degree of protection

Concerning ineligible regions to article 5, about 6.5% of the total area (in average) is covered by the two Directives Habitat and Birds. The total areas proposed under the network project “Natura 2000” by Germany is on average proportionally lower than the Union average (around 10% of the eligible territory concerned for the EU).

Thirteen regions dedicated a major portion (higher than the average level) of the territory to biodiversity management, while the remaining 17 have been planned to protect a more reduced area. Inside the first group, the region of *Hamburg* proposed the inscription of more

than 20% of the regional area to the network "Natura 2000", other regions proposed lower rate of coverage, but still significant (greater than 9%), like *Schleswig-Holstein*, *Rheinhessen-Pfalz*, *Unterfranken* and *Oberbayern*.

The region with the lowest portion of territory covered by the Directives is *Mittelfranken*, with around 2% of the total area concerned. Other 8 Regions have rates of protection under 4%.

#### *Indicator NA2 – Wilderness degree*

According to Corine land-cover database, in average the land covered by forest and semi-natural areas concerns around 30% of the total territory of eligible regions. This percentage is quite similar to the average observed at the Union level (for eligible regions). 10 Regions present a major coverage (over 40%), and 8 a minor one (under 20%). Regions with forest and semi-natural area present a major potential landscape biodiversity.

#### *Indicator NA3 – Anthropic degree; NA4 – Urban-Rural typology*

Concerning the Anthropic degree, defined as the part of artificial surface on the whole regional territory, the regions with the highest environmental pressures, with an anthropic degree greater than the average 13% observed at Country level, are the urban areas of *Berlin*, *Hamburg*, *Bremen* *Düsseldorf*, *Köln*, *Arnsberg* and *Saarland*. The other 23 regions demonstrate a lower degree of anthropicity (measured by the relative indicators), among them 4 regions present a very low rate of artificialization (lower than 5% of the territory concerned): the regions of *Niederbayern*, *Oberpfalz*, *Oberfranken* and *Trier*.

In reference to Urban-Rural typology indicator, all the areas, except one (*Niederbayern*), are characterised by a high urban influence. There is not a single area showing a low value in human intervention (index 5 or 6).

In synthesis, according to the four previous indicators on biodiversity and land coverage and in reference to the composite "Natural/rural assets indicator", two different groups of regions could be differentiated:

- The first cluster (around 70% of the regions), mostly regards regions with a relevant portion of territory comprised in the "Natura 2000" network, and a high wilderness degree and a low anthropic degree.

- The second cluster - Regions with a low biodiversity potential - concerns regions with a low coverage of natural/ rural areas (forest and semi natural area) and a high anthropic degree.

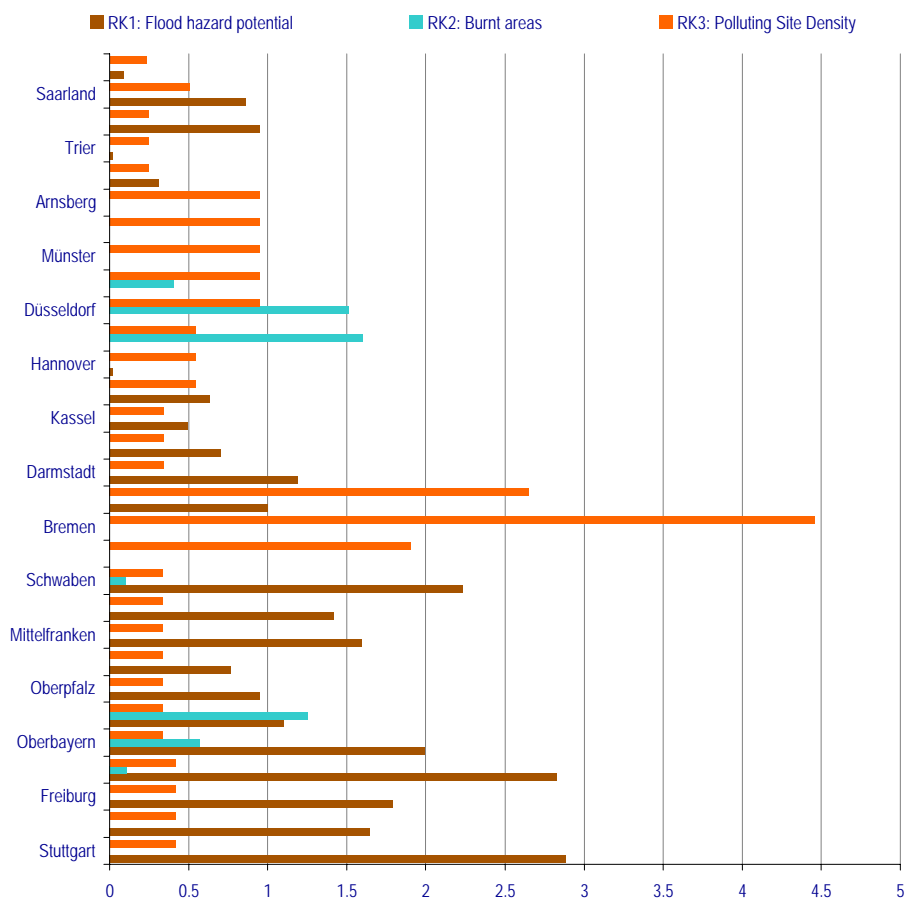
Implementing the “Natura 2000” network of protected areas continues to encounter difficulty, especially at Länder level (in particular in formulating and implementing management objectives, fund management strategy at site level). So, an efficient biodiversity protection policy should require particular efforts in:

- promoting land diversity and landscape protection, in particular for the groups of regions whose biodiversity is limited (second cluster of regions)
- implementing the Natura 2000 network and management strategy of sites, in particular providing funds to Länder in regions where the area under protection is large (mainly regions belonging to the first cluster).

Risk Prevention

Risk prevention regards both natural hazards and technological risks management. Herein are considered flood hazards, burnt areas and potential contaminated industrial sites (activities under risk of relevant polluting impact, according to the IPPC Directive).

Fig. 9 Risk Prevention



RK1 – Natural hazards with anthropic implications – Regional flood hazard potential

The regions suffering from the risk of flood (with a value beyond the national average of 0,85) represent around 45% of the German eligible regions, this is particularly the case of Tübingen, Stuttgart and Schwaben. Among the other regions, 8 (around a quarter) are subjected to a very small risk, this is particularly the case of Köln, Berlin and Düsseldorf.

### *RK2 – Natural hazards with anthropic implications – Size of burnt areas*

Only 7 regions are at risk of forest fires. The regions that shows the highest share of the territory subject to this event are Nidermayer, Düsserdorf and Weser-Ems, followed by Oberbayern and Köln. The remaining regions, the ones with an indicator value under the average, are Tübingen and Schwaben.

In synthesis, according to the two previous variables, and considering the composite “Natural risk indicator”, three clusters of regions could be distinguished:

- regions where the risk is low (around a third of the eligible regions),
- regions characterized by an high risk (around 13%) and
- intermediate regions, which are the most numerous.

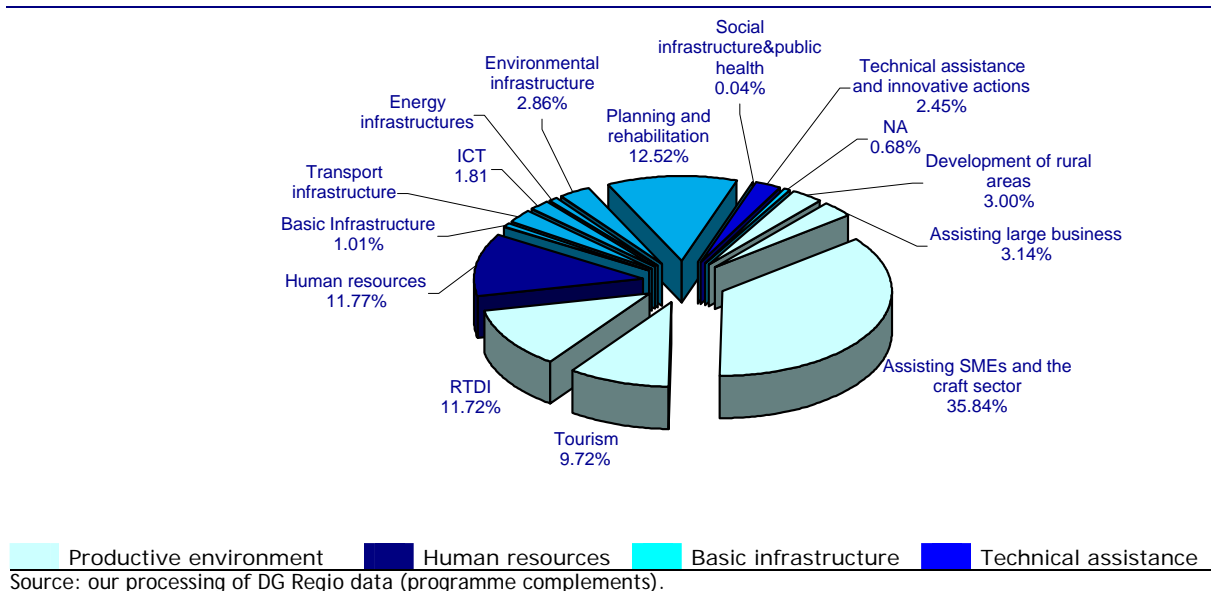
### *RK3 – Polluting sites Density*

Regarding the potential risk of pollution, according to the definition of IPPC Directive, around a quarter of the German regions are particularly concerned (with an indicator value beyond the national average); especially *Bremen* and *Hamburg*. The most polluted regions are mainly the traditionally industrialized ones, localized in the North of the Country.

## 6. Implementation of Structural Funds

In the 2000-2006 programming period Germany receives Structural Funds under Objective 2 through eleven regional programmes (parts of the beneficiary zones being at the “phasing out” stage). In the 2007-2013 programming period, all Objective 2 regions will fall under the new Competitiveness and Employment Objective. In particular, Berlin region, which in the current period is divided into West Berlin (Objective 2) and East Berlin (Objective 1 phasing-out), will entirely be considered in the new Competitiveness and Employment Objective.

Fig. 10 Germany. EU Contribution by priority area, Objective 2 (2000-2006)



Germany receives € 22,394 million under Objective 1 programmes, € 3,935 under Objective 2 and € 5,263.69 under Objective 3. Furthermore, € 813.7 million are committed to INTERREG programmes, € 150.95 to URBAN, € 534.38 to EQUAL, € 272.71 to LEADER and € 123.35 to fisheries. The total amount of Structural Funds is € 34,027.49 million<sup>7</sup>.

Objective 2 regional programmes are generally aimed at fostering competitiveness of the regional economy through businesses support (especially services to SMEs and start-up), promotion of RDTI and the information society, investments in human resources - with a view to diversifying the economic base and creating jobs - strengthening logistics and

<sup>7</sup> 2004 prices, performance reserve included.

environmental infrastructures, promoting site restorations, urban areas and local development, tourism and culture, equal opportunities and social inclusion.

Financial breakdown by priority area for Objective 2 regions shows that more than one third of total contributions are directed toward the assistance of SMEs and the craft sector (35.8%). A wide range of other activities is financed. As regards the productive environment, the other relevant areas are planning and rehabilitation (12.5%) and RTDI (11.7%), with a particular focus on the tourism sector (9.7%). Human resources accounts for 11.7% of total contributions, mostly financed by the European Social Fund. Finally, contributions for infrastructures are relatively small as compared to other countries (9.4%) and are mainly focused on environmental and transport infrastructure.

## 7. Policy Priorities assessment

### 7.1. Findings from the statistical analysis

From the joint analysis of economic performances and the thematic areas of innovation and knowledge economy and access to TLC/ICT and transport infrastructures (cf. table 20) it is possible to obtain some suggestions for the identification of key issues for each German region.

First, a secondary priority for improving the access to telecommunication and digital technologies can be identified only for a few German regions characterised by a low correlation between access indicators and economic performances. As for the other North European countries, in the case of unexploited potential it is difficult to identify specific and effective policy measures, apart from a higher attention to the general issues of innovation and human capital (which however belong to another thematic area).

As already anticipated in the relevant section, in terms of innovation and knowledge potential the main objective of many German regions, and especially those with a low economic performance, is that of an effective technological transfer and diffusion rather than a wider technological base (which appears already wide, as compared to other European regions). Namely, along with 12 cases of unexploited innovation potential, there are four cases of strong unexploited potential, which require major interventions. However, for a limited number of regions also the increase of innovation potential cannot be neglected.

On the basis of our data some German regions are affected by problems of access to transport, see however the relevant discussion above about trends in modes of transport.

Moving to environment and risk prevention (cf. table 21), the cases for a high policy priority are quite limited: two regions for the improvement of energy sustainability, five for the reduction of transportation impact, four for the prevention of natural risk and eight for the prevention of technological risk.

**Tab. 19 Eligible regions: economic performance versus innovation & knowledge economy, access to ICT and access to transport.**

	Economic performance	Innovation and knowledge economy		Access to TLC and ICT		Access to transport	
	Ranking	Ranking	Joint analysis	Ranking	Joint analysis	Criticality	Joint analysis
Stuttgart	High	High	High performer	Intermediate	Uncorrelated	Low connectivity	Strongly uncorrelated
Karlsruhe	High	High	High performer	Intermediate	Uncorrelated	Low connectivity	Strongly uncorrelated
Freiburg	Intermediate	High	Unexploited potential	Intermediate	Intermediate	Low connectivity	Uncorrelated
Tübingen	High	High	High performer	Intermediate	Uncorrelated	Low connectivity	Strongly uncorrelated
Oberbayern	High	High	High performer	High	High performer	Low connectivity	Strongly uncorrelated
Niederbayern	Intermediate	Low	Uncorrelated	High	Unexploited potential	Low connectivity	Uncorrelated
Oberpfalz	Intermediate	Intermediate	Intermediate	High	Unexploited potential	Low connectivity	Uncorrelated
Oberfranken	Intermediate	Intermediate	Intermediate	High	Unexploited potential	Low connectivity	Uncorrelated
Mittelfranken	Intermediate	High	Unexploited potential	High	Unexploited potential		Non problematic
Unterfranken	Intermediate	High	Unexploited potential	High	Unexploited potential	Low connectivity	Uncorrelated
Schwaben	Intermediate	Intermediate	Intermediate	High	Unexploited potential	Low connectivity	Uncorrelated
Berlin	Low	High	Strong unexploited potential	Intermediate	Unexploited potential		Non problematic
Bremen	Intermediate	Intermediate	Intermediate	High	Unexploited potential		Non problematic
Hamburg	High	Intermediate	Uncorrelated	High	High performer		Non problematic
Darmstadt	High	High	High performer	Intermediate	Uncorrelated	Low connectivity	Strongly uncorrelated
Gießen	Intermediate	High	Unexploited potential	Intermediate	Intermediate	Low connectivity	Uncorrelated
Kassel	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Low connectivity	Uncorrelated
Braunschweig	Low	High	Strong unexploited potential	High	Strong unexploited potential	Low connectivity	Low performer
Hannover	Low	High	Strong unexploited potential	High	Strong unexploited potential		Non problematic region
Weser-Ems	Low	Low	Low performers	Intermediate	Unexploited potential		Non problematic
Düsseldorf	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate		Non problematic
Köln	Intermediate	High	Unexploited potential	Intermediate	Intermediate		Non problematic
Münster	Low	Intermediate	Unexploited potential	Intermediate	Unexploited potential		Non problematic
Detmold	Low	Intermediate	Unexploited potential	Intermediate	Unexploited potential	Low connectivity	Low performers
Arnsberg	Low	Intermediate	Unexploited potential	Intermediate	Unexploited potential		Non problematic
Koblenz	Low	Intermediate	Unexploited potential	Intermediate	Unexploited potential	Low connectivity	Low performer
Trier	Low	Intermediate	Unexploited potential	Intermediate	Unexploited potential	Low connectivity	Low performer
Rheinhausen-Pfalz	Low	High	Strong unexploited potential	High	Strong unexploited potential	Low connectivity	Low performer
Saarland	Low	Intermediate	Unexploited potential	Intermediate	Unexploited potential		Non problematic
Schleswig-Holstein	Low	Intermediate	Unexploited potential	Intermediate	Unexploited potential		Non problematic

**Tab. 20 Eligible regions: economic performance versus innovation & knowledge economy, access to ICT and access to transport.**

	Innovation and knowledge economy		
Economic performance	High	Intermediate	Low
High	Stuttgart., Karlsruhe, Tübingen, Oberbayern, Darmstadt	Hamburg	
Intermediate	Freiburg, Mittelfranken, Unterfranken Gießen, Köln	Oberpfalz, Oberfranken , Schwaben Bremen, Kassel, Düsseldorf	Niederbayern
Low	Berlin, Braunschweig Hannover, Rheinhessen-Pfalz	Münster, Detmold Arnsberg, Koblenz, Trier Saarland, Schleswig-Holstein	Weser-Ems

	Access to TLC and ICT		
Economic performance	High	Intermediate	Low
High	Oberbayern Hamburg	Stuttgart, Tübingen, Darmstadt, Karlsruhe	
Intermediate	Oberpfalz, Oberfranken Mittelfranken, Unterfranken Schwaben, Bremen	Freiburg, Gießen Kassel, Köln, Düsseldorf	
Low	Braunschweig Hannover Rheinhausen-Pfalz	Arnsberg, Berlin, Weser-Ems, Münster Detmold, Koblenz, Trier, Saarland Schleswig-Holstein	

	Access to transport (connectivity)		
Economic performance	High	Intermediate	Low
High	Hamburg		Stuttgart, Tübingen Oberbayern, Darmstadt., Karlsruhe
Intermediate	Niederbayern Bremen	Mittelfranken Köln Düsseldorf	Freiburg, Niederbayern Oberfranken, Unterfranken Schwaben, Gießen Kassel, Oberpfalz
Low	Schleswig-Holstein	Berlin, Hannover Weser-Ems, Münster Arnsberg Saarland	Braunschweig, Detmold Koblenz, Trier, Rheinhausen-Pfalz

**Tab. 21 Eligible regions: economic performance versus environment and risk prevention**

	Economic performance	Energy sustainability	Transport impact	Natural/rural assets	Natural risk	Technological risk
Stuttgart	High	Intermediate	Intermediate	Low	High	Intermediate
Karlsruhe	High	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Freiburg	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Tübingen	High	Intermediate	Intermediate	Intermediate	High	Intermediate
Oberbayern	High	Intermediate	Low	Intermediate	High	Intermediate
Niederbayern	Intermediate	Intermediate	Low	Intermediate	Intermediate	Intermediate
Oberpfalz	Intermediate	Intermediate	Low	Intermediate	Intermediate	Intermediate
Oberfranken	Intermediate	Intermediate	Low	Intermediate	Intermediate	Intermediate
Mittelfranken	Intermediate	Intermediate	Low	Intermediate	Intermediate	Intermediate
Unterfranken	Intermediate	Intermediate	Low	Intermediate	Intermediate	Intermediate
Schwaben	Intermediate	Intermediate	Low	Intermediate	High	Intermediate
Berlin	Low	Low	High	Low*	Low	High
Bremen	Intermediate	Intermediate	High	Low*	Low	High
Hamburg	High	Intermediate	High	Low*	Intermediate	High
Darmstadt	High	Intermediate	Low	Intermediate	Intermediate	Intermediate
Gießen	Intermediate	Intermediate	Low	Intermediate	Intermediate	Intermediate
Kassel	Intermediate	Intermediate	Low	Intermediate	Intermediate	Intermediate
Braunschweig	Low	Low	Low	Intermediate	Intermediate	Intermediate
Hannover	Low	Low	Low	Intermediate	Low	Intermediate
Weser-Ems	Low	Low	Low	Low	Intermediate	Intermediate
Düsseldorf	Intermediate	Low	High	Low	Intermediate	High
Köln	Intermediate	Low	High	Low	Low	High
Münster	Low	Low	High	Low	Low	High
Detmold	Low	Low	High	Low	Low	High
Arnsberg	Low	Low	High	Intermediate	Low	High
Koblenz	Low	Low	Intermediate	Intermediate	Low	Intermediate
Trier	Low	Low	Intermediate	Intermediate	Low	Intermediate
Rheinessen-Pfalz	Low	Low	Intermediate	Intermediate	Intermediate	Intermediate
Saarland	Low	Intermediate	High	Intermediate	Intermediate	Intermediate
Schleswig-Holstein	Low	High	Intermediate	Intermediate	Low	Intermediate

\* These cases concern three highly urbanised regions with a small surface for which a priority for interventions in the field of natural areas cannot be effectively implemented.

## 7.2. Findings from the field analysis

### *The national context*

Main trends in the country in the last years in the terms of economic development, innovation and knowledge society, accessibility and environment, can be summarized as follows:

- within recent years, the economic development in Germany has been dominated by low economic growth rates due to recession and structural challenges;
- in a regional perspective the most important economic problems are located furthermore in East Germany. The support of private and public investments (infrastructure) has induced additional growth, however we are missing a dynamic process of convergence in terms of productivity and GDP per capita between the New and Old Länder.

Thus, any statement on performances in the three fields of innovation, accessibility and environment is overshadowed by these general economic trends.

Within the field of innovation and knowledge society, policy focused on two strategic objectives:

- 1) mission-oriented policies. These policies shall promote the generation and diffusion of new knowledge for key technologies. Key technologies cover a wide range of different sectors: ICT technologies, nano and microsystem technology, space technology, production technology, life science, health technologies, sustainable technologies, mobility and living conditions. Mission-oriented instruments are used to subsidise private R&D investments.
- 2) knowledge diffusion and cluster management. These policies shall help to improve the transfer and commercialisation of new technologies. Instruments include specialised agencies for technology transfer and patent exploitation, changes of intellectual property rights regimes for university professors, academia-business liaison programmes, incubators and VC funds. A special focus has been laid on the emergence and promotion of regional and sectoral clusters by specific programmes, initiatives and regional contests.

These policies, however, have been criticised for not being effective. Germany still has its strengths in an innovation potential for medium and medium-high-tech-industries. A well-performing innovation infrastructure – research associations and universities – is still facing few incentives, restricted capabilities and cooperation partners for the diffusion of new ideas.

Despite the promotion of clusters, there is no empirical proof for a better performance of cluster regions, an increasing spatial concentration of high-tech industries or growth dissemination effects from promoted areas.

Accessibility has been viewed as a major factor to promote cohesion between the German eligible regions and Eastern Germany. Most of the public investments into road and rail networks went to Eastern Germany. In general, public investments have been restricted due to increasing budget deficits. Accessibility to ICT/TLC has been dependent on competition within German markets. Increased competition raised the diffusion of technologies, and after delays investments in broadband infrastructures have been increased. Due to economic reasons, environmental issues did not play a major role for competitiveness in recent years. Most of the activities refer to the promotion of renewable energies.

In the recent period, priority has been given to business support activities. Therefore most of the lessons can be found in the fields of innovation and knowledge society. There is an extended infrastructure of technology transfer and academia-business cooperation given in most German regions. Best practices refer primarily to associations like Steinbeis or Fraunhofer Association. In many single cases, however, effectiveness and profitability of these centres have not been sufficiently controlled leading to lacks of strategic orientation and integration into private markets. The support of clusters has been a major objective of national and regional policies. Recently the federal Government has enlarged the national list of (allowed) regional policy tools for a specific support to cooperation networks and cluster management.

Many of these clusters, however, remain on a level of formal cooperation to be eligible to subsidies. Empirical proofs on actual regional impact have been weak. Many programmes and initiatives support start-ups and spin-offs. Successful examples include access to private venture capital and sales markets. Less successful examples particularly failed to consider the importance of sales markets with many supported entrepreneurs left in subsidised centres. New instruments of funding innovations have been introduced in the field of “mezzanine-instruments” like secondary loans or silent partnerships. Despite their importance to overcome weaknesses of German companies with low equity rates, the demand was restricted due to complexity of the instruments and lacks of experience.

As mentioned, environmental issues cover only a small part of the activities. Projects to support fuel cells and renewable energy production are the most prominent examples. The development of cleaner urban transport systems might attract a little further attention due to current debates on air emission. Most of these projects, however, are hindered by a complex

regional and local planning system with several conflicts between local, regional and Federal level. Similar experiences can be found in the field of biodiversity and soil management.

Transport infrastructure investments have been restricted to fewer regions in Germany. Problems arose mainly due to deviations of investment decisions from criteria of efficiency. Political reasons and regional acceptance have been seen as more important than connectivity. Considering the high rate of ICT/TCP diffusion, further investments in ICT infrastructures will only be relevant in the field of broadband infrastructures, where lack of competition caused delays in the diffusion.

The main lessons referred to general lacks of coordination. These deficits refer to the coordination between EDRF, ESF and other funds, the collaboration between the different NUTS levels and the integration of national objectives into EU program objectives.

For most of the regions, future priorities will refer to interventions in the field of innovation. Special focus will be directed to diffusion and transfer instruments. The lack of positive experiences with national and regional policies in this field, however, should lead to a discussion about changes of instruments and incentive schemes.

Regional economic policy is executed by the Federal Government, the Länder, and local authorities. The Federal Government and Länder are involved in the decision-making in the Common Task, and the financing is shared equally between the Federal government and the Länder. The Länder are responsible for implementing and executing regional economic policy. We expect no future change in this institutional arrangement.

Regional structural policy in the form of the Common Task for the Improvement of Regional Economic Structures is characterised as an "allocative region-orientated equalisation policy". It primarily attempts to reduce economic disparities by mobilising regional growth and development potential. Balanced economic growth is the relevant intermediate objective. Therefore regions are supported whose economic development is considerably below the Federal average and which show a problematic concentration of companies with structural weakness. Against this background we expect regional policy interventions only for areas with low income, high unemployment and high natural risk. Policy interventions to promote innovation and competitiveness outside these "core areas" might to some extent be part of regional policy, however this task is primarily part of Germany's R&D policy.

We offer below broad indications at NUTS1 levels, while details at NUTS2 are given in Annex I.

## *The regional context*

### *Baden-Württemberg*

#### **NUTS2 regions: Stuttgart, Karlsruhe, Freiburg, Tübingen.**

Baden Württemberg is one of the most important growth NUTS1 area in Germany. Nevertheless the socio-economic structure within the region is heterogeneous: Economic strong areas like Stuttgart, Karlsruhe, Heidelberg, Mannheim are efficiently exploiting their agglomeration externalities and they are well equipped with excellent universities, research institutes and competitive innovative entrepreneurs. These regions have a great potential in the field innovation and research. As many other growth poles transport infrastructure bottlenecks are more important for regional development (e.g. Stuttgart). Also to some extent environmental risks are important, however the scope of public protection is well developed. Compared with Stuttgart and Karlsruhe the intermediate economic performance of the NUTS2 areas Freiburg and Tübingen is caused by a higher share of rural areas, by lower agglomeration advantages and by the high employment share of manufacturing within the region. As well the performance in innovation & knowledge economy is not comparable with regions like Stuttgart and Karlsruhe.

During the current programme period objective 2 policy tries to stimulate rural (Ostalb administrative district and Zollernalb administrative district) as well as urban development (Mannheim). Main objectives are support to SMEs, tourism and improvement of public infrastructure. Due to its high economic performance and its excellent R&D infrastructure only small parts rural and urban areas (like the Ostalb district, the Neckar-Odenwald district, Mannheim Zollernalb district of Baden-Württemberg) will be eligible to structural funds interventions. Strategies for rural areas so far should include an improved access to ICT-infrastructure and support for tourism in rural areas. Measures to improve knowledge diffusion and SME promotion should be continued.

### *Bavaria*

#### **NUTS2 regions: Oberbayern, Niederbayern, Oberpfalz, Oberfranken, Mittelfranken, Unterfranken, Schwaben.**

Like Baden-Württemberg the NUTS1 area Bavaria is one of the important growth area in Germany. Upper Bavaria is with Munich the strong economic heart of the region. Their GDP-

growth is higher than the Federal average. The most important driving forces for growth are firms of the knowledge based economy (information and communication sector). As well the film&media entrepreneurs and car manufacturing provide important contributions to regional growth. The R&D intensive firms and the public R&D infrastructure are responsible for the excellent economic performance and the well developed performance of the knowledge based economy. Nevertheless Bavaria and its NUTS2 areas are heterogeneous because the socio-economic performance of less agglomerated areas with an intermediate economic performance (like the NUTS2 areas Lower Bavaria, Upper Palatinate, Upper Franconia, Middle Franconia, Lower Franconia and Swabia) are considerably different compared with the growth pole Munich. As well the economic strengths and weaknesses within Bavaria are different between the single administrative districts. Compared with the area around the growth pole Munich these areas are more rural, and manufacturing as well as agriculture is more important. However compared with the other NUTS2 areas within Bavaria only Lower Bavaria indicates a low performance in their innovation and knowledge economy.

In cooperation with the European Agricultural Guidance and Guarantee Fund/Guidens (EAGGF) regional policy has five main fields for objective 2 regions:

- infrastructure consolidation,
- stimulation of the competitiveness (investment grants),
- knowledge diffusion and support of business R&D,
- tourism,
- city and rural development incentives.

Due to the strong economic performance only few areas will be eligible to regional policy interventions. Regional interventions should be concentrated on a core area that contains primarily the Bavarian East boarder regions and few other rural regions. Objective 2 policy strategies should include support to tourism, knowledge diffusion via support to transfer facilities and SME promotion. Tourism and measures to stimulate rural development should still play a predominant role. In particular regional policy interventions has to keep in mind that the absorptive capacity for innovation policies in rural areas are limited, however in any case their access to ICT and the Bavarian innovation network should be improved. The thematic fields of intervention are SME/innovation, rural development, urban areas, protection against flood hazards. Areas near the border (Swabia, Upper Palatinate, Upper Franconia) will get support to their SMEs and flood hazard protection will get a high priority in the South.

### *Berlin*

The region still has to cope with the effects of the former division of the municipality. As a consequence, economic performance is low and heterogeneous within the region with East Berlin being an objective 1 area. The innovation performance, however, is relatively high due to high public R&D investments. The region already aims at stimulating knowledge diffusion in SME by supporting entrepreneurship and cluster organisations. These attempts should be extended and connected to the enlargement of the knowledge and cultural services sector, as the capital region of Germany has a great potential for services. The infrastructure performance is already high and improvements to reduce congestion in this metropolitan area are restricted. Risk prevention and energy sufficiency is so far not a major priority to raise economic performance for the region.

### *Bremen*

The region has launched a process to increase the innovation potential by improving R&D infrastructures – the “Science City” of Germany – and ICT infrastructure. Areas like Bremerhaven, however, are still affected by severe structural changes causing high rates of permanent unemployment. The main priorities in the context of innovation will refer to attract more private R&D and improve the diffusion of innovation to SME and services sectors in particular for the former industrial areas. Further activities will refer to the inclusion of less-qualified groups. Risk prevention includes initiatives for re-conversion of former industrial sites. Transport infrastructure is not a major bottleneck for economic development, and the ICT infrastructure scored best in a recent German comparison between the regions.

### *Hamburg*

Due to its high economic performance, only small parts of this metropolitan region will be a target for EU competitiveness funds. The innovation performance is so far only intermediate due to limited investments by the private sector. Future activities are mainly directed to improve knowledge diffusion and strengthen linkages between public knowledge infrastructure and the emergence of a service sector. Infrastructure needs affect large-scale infrastructure like the port and the airport. Re-cultivation of brownfields is a major issue for former industrial areas with potentials to support the emergence of new cultural services segments.

*Hesse***NUTS2 regions: Darmstadt, Gießen, Kassel**

In particular Frankfurt, Darmstadt, Offenbach and Wiesbaden are the growth drivers with an excellent performance in innovation & knowledge economy, high employment ratio in services etc. Compared with the NUTS2 area Darmstadt the NUTS2 areas Kassel and Gießen only achieve an intermediate ranking in terms of economic performance and innovation&knowledge economy. In particular the area of the administrative district Kassel and areas of North and East Hessen have structural problems because of the less developed service sector, demographic problems and the dependency on few branches like manufacturing and agriculture. Due to this unemployment is higher and the contribution to economic growth is smaller than in the South. Economic problems of the NUTS2 area Gießen are caused by the lower performance of rural and less agglomerated areas.

The recent update of the midterm evaluation classifies the opening up of industrial sites, the support for promoters of new business and support for tourism as particularly successful programs. Strategies so far include SME support and knowledge diffusion via technology services and education. The new proposals from the Commission create new opportunities in the field of technology diffusion and support for innovative SMEs. The research and academic institutions of eligible areas inside (Universities Kassel and Gießen) and outside Hesse in Northrhine Westphalia (University Paderborn) and Lower Saxony (University Göttingen) should play an active role as incubator for innovative new business founder and technology support centres for SMEs.

*Lower Saxony***NUTS2 regions: Braunschweig, Hannover, Weser-Ems**

This region showed a low economic performance at the beginning of the decade but started to catch up recently. The economic structure within the region is very heterogeneous with Weser-Ems as a more rural and peripheral area dependent on linkages to Bremen and the port of Wilhelmshaven, Braunschweig as a more science-driven area with several public and private R&D facilities, Hannover as the regional capital area and Lüneburg as objective 1-phase out region. In the context of innovation, the region launched a cluster concept with regional priorities in lead technologies. The region should follow this pathway and strengthen linkages to knowledge service segments. Problems, however, are caused by the non-eligibility of the

capital area to EU competitiveness funds restricting options for diffusion policies. Infrastructure policies include the port of Wilhelmshaven as key project to improve accessibility to Weser-Ems. Environmental risk prevention might help peripheral areas improve their potential as tourism regions.

### *North Rhine-Westphalia*

#### **NUTS2 regions: Düsseldorf, Köln, Münster, Detmold, Arnsberg**

NUTS2 area Northrhine-Westphalia is still affected by needs for industrial re-structuring (in particular in the Ruhr area). In addition the districts with a high share of rural and less agglomerated areas (Münster, Detmold, Arnsberg) are low economic performers. Growth areas with a high or intermediate economic performance are Cologne and Düsseldorf. All NUTS2 areas within Northrhine-Westphalia are high or intermediate performers in terms of innovation & knowledge economy. Heavy demographic problems exist in particular in the Ruhr area.

Regional policy interventions should keep in mind the different strengths and weaknesses of eligible areas in rural and agglomerated parts of Northrhine-Westphalia. Due to the limited innovation capacity of rural areas regional policy interventions should be concentrated on improvement of the access to TLC and ICT, tourism and SME support. Due to low energy efficiency and the high share of contaminated sites in the Ruhr area environment and risk prevention will be important as well as stimulation innovative SMEs and human capital qualification. Although the flood hazard risk in some areas is high regional policy intervention should consider that the particular areas have a long experience to handle flood hazards. As well the protection infrastructure is well developed.

### *Rhineland Palatine*

#### **NUTS2 regions: Koblenz, Trier, Rheinhessen-Pfalz**

The economic performance is in most NUTS3 regions relatively low, although unemployment rates are relatively low due to the high level of mobility. Large areas of the region are rural and peripheral. The economic performance was strongly affected by military conversion, in particular closing down of several US military bases. These structural problems will also be relevant for the future, as the German Federal government announced plans to close down several bases. The only area with high performance in innovation is Rheinhessen Pfalz due to high level of private R&D investments mainly from the chemical sector. In the other two

NUTS3 regions of Rhineland Palatine, the low population and economic density restricts the absorptive capacity of R&D and emergence of service sectors. One major priority of the region's policy was the support of entrepreneurship by funding and consulting leading to the highest rates of start-ups in Germany. This process has to be followed to increase the industrial diversity of the region and particularly reduce the dependence on the chemical sector. Any improvement of accessibility, however, might only cause limited effects, as the population density is too low to attract industrial investments, and infrastructures might reduce the attractiveness as tourism areas with non-anthropogeneous land. Cleaning of contaminated former industrial sites is needed in Rheinhessen Pfalz with its high share of chemical sites. The effectiveness of future regional policies might be increased with the help of more collaboration with neighbouring areas in Luxembourg.

### *Saarland*

This region is still strongly affected by needs for industrial re-structuring. As a result, economic performance is still low but recently faster increasing than the German average. The needs for industrial re-structuring – not only including the emergence of new workplaces, adjustment of qualification, but also the re-cultivation of contaminated former industrial sites – are caused by high shares of coal mining and other traditional old industries. The innovation performance is intermediate but private and public R&D investments are relatively low due to missing diversification of industries and qualifications. The regional government focused its activities on the improvement of absorptive capacities by cluster policies linked to service sectors, which are so far underdeveloped. These priorities will serve as a basis for the following years. Any infrastructure policy in the transport or ICT sector is restricted due to low population density. Risk prevention is and will be concentrated to re-cultivation of contaminated land.

### *Schleswig Holstein*

The region shows a low economic performance during the period of investigation. The economic structures within the region, however, are heterogeneous. NUTS3 areas around Hamburg show good potentials to absorb innovative knowledge and qualifications from the neighbouring metropolitan area (but they are not eligible for EU funds so far), while other NUTS3 areas are limited in their innovative potential due to the low population density. Attempts to increase the basic innovation infrastructure by public R&D investments are restricted due to budget constraints and would require long-term adjustment processes to

improve the innovative potential. The regional government started cluster initiatives, particularly in the segments of health, renewable energy and maritime industries and services. These activities will have to be followed and connected with initiatives to improve the attractiveness for tourism services in coastal areas and areas with low population density. Programs to increase innovation potentials shall be focused to the better-developed areas and improve consultancy infrastructures for start-ups and spin-offs, although the eligibility for EU competitiveness funds might be limited in these areas. Further investments in accessibility are not a major priority, as the low population density restricts usage of these infrastructures.

# ANNEX I: Additional regional analysis

## Region BW Stuttgart

Context	Priorities	Implementation
<p><i>High economic performance</i>, as a result of massive GDP growth</p> <p><i>High performance in innovation &amp; knowledge economy (KE)</i> caused by massive private and public R&amp;D investment</p> <p><i>Intermediate access to IC</i>, caused by low share of households with Internet access Field analysis shows a good situation for ICT</p> <p><i>Low access to transport</i>, caused by infrastructure bottlenecks</p> <p><i>Intermediate risk</i>, due to a high flood hazard potential</p> <p>Stuttgart is the strong economic centre of the region, approximately 5 % of the GDP are invested in R&amp;D. The GDP-growth in Baden-Württemberg is higher than the Federal average and this applies in particular for the region Stuttgart</p> <p>The R&amp;D intensive firms and the public R&amp;D infrastructure are responsible for the excellent economic performance and high performance in KE. Important driving forces are the high export demand and regional clusters in the producing sector. Business related services are important and primarily located in agglomerated areas.</p> <p>The bottlenecks in the traffic infrastructure are important for the area in and around Stuttgart City.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>The region Stuttgart contains the objective 2 area Ostalbkreis and the rural area of the Neckar-Odenwald-Kreis. The support is concentrated on infrastructure (new industrial sites) and SMEs. Due to the guideline of the Economic Ministry specific programs for</p> <ul style="list-style-type: none"> <li>▪ regional development support via assistance for innovative and R&amp;D orientated founder of new business</li> <li>▪ technology support</li> <li>▪ environment and energy efficiency</li> <li>▪ tourism (rural areas)</li> </ul> <p>In the area Ostalbkreis regional development (improvement of industrial sites) and technology support are the main strategies. Support of entrepreneurship with the regional Bank (Landesbank Baden-Württemberg). The Neckar-Odenwald-Kreis gets support for tourism.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet, however the objectives of the proposal for a regulation of the EU-Parliament and the Council on the ERDF create new opportunities to reduce the weakness in objective 2 areas. Regional structural</p>	<p>The share of environment and risk prevention should not be too high and specific areas need more support for traffic infrastructure.</p> <p><u>Experiences with ERDF and requests for the future period</u></p> <p>Opportunities</p> <ul style="list-style-type: none"> <li>▪ The new program offers opportunities for a better coordination between technology and innovation policy</li> <li>▪ The new proposals from the Commission create new opportunities in the field of technology diffusion and support for innovative SMES because the NUTS 2 region contains some research and academic institutions (University Stuttgart, location with Universities of Applied Science). However it is unclear if regional interventions in these areas will be taken.</li> </ul>

	<p>policy in the form of the Common Task for the Improvement of Regional Economic Structures is characterised as an "allocative region-orientated equalisation policy". It primarily attempts to reduce economic disparities by mobilising regional growth and development potential. Therefore regions are supported whose economic development is considerably below the Federal average and which shows a problematic concentration of companies with structural weakness. Against this background we expect that the financial breakdown for policies priorities are only relevant for some few areas in the eligible regions like the Ostalbkreis. Strategies so far include</p> <ul style="list-style-type: none"> <li>▪ knowledge diffusion</li> <li>▪ SME promotion</li> <li>▪ tourism</li> </ul>	
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*Region BW Karlsruhe*

Context	Priorities	Implementation
<p><i>High economic performance</i>, as a result of massive GDP growth</p> <p><i>High performance in innovation &amp; knowledge economy (KE)</i> caused by massive private and public R&amp;D investment, high share of turnover with product innovations</p> <p><i>Intermediate access to IC</i>, caused by low share of households with Internet access</p> <p><i>Low access to transport</i>, caused by infrastructure bottlenecks</p> <p><i>Intermediate risk</i>, due to a flood hazard potential</p> <p>Karlsruhe, Heidelberg, Mannheim are the</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Old industrialised sites of Mannheim are eligible areas of the NUTS-2 region Karlsruhe. The support is concentrated on infrastructure and in particular industrial fallow sites, redevelopment of contaminated sites. Coordinated interventions by ERDF and ESF. Technology and innovation policies are not a major element of the current objective 2 policy.</p>	<p>The contaminated sites are only one element of the weakness of supported areas in 2000-2006. Therefore the weight of Environment &amp; risk prevention should not be excessive.</p> <p>For the economic strong areas (like the agglomeration in and around Mannheim) bottlenecks of the public transport should not be underweighted. In particular the High-Speed-Train connection between Mannheim and Frankfurt would improve</p>

<p>economic strong areas with high population density and with excellent universities, R&amp;D-Institutes and competitive innovative entrepreneurs.</p> <p>One of the important driving forces are the high export demand [export ratios in the manufacturing sector are between 54 % (Mannheim) and 35 % (Heidelberg)] and regional clusters in the manufacturing sector.</p> <p>In particular the unemployment rate in Mannheim is with 10% higher than the average in Baden-Württemberg.</p> <p>Business related services are important and primarily located in agglomerated areas.</p> <p>The statistical context analysis seems quite right.</p> <p>Field analysis shows a good situation for ICT</p>	<p><u>Policy Options</u></p> <p>No definite and official strategy yet. However the objectives of the proposal for a regulation of the EU-Parliament and the Council on the ERDF create new opportunities to reduce the weakness in objective 2 areas. So far the funding of infrastructure will be still relevant.</p> <p>It primarily attempts to reduce economic disparities by mobilising regional growth and development potential. Therefore regions are supported whose economic development is considerably below the Federal average and which shows a problematic concentration of companies with structural weakness. Balanced economic growth is the relevant intermediate objective, with the specific aim of eliminating the deficits in Eastern Germany in the long term and to create scope for equalising income levels. Against this background we expect that the financial breakdown for policies priorities is only relevant for some few areas inside the eligible regions.</p>	<p>the traffic infrastructure as well as road investments for a better connection of the Neckar-Odenwald-Kreis. The accessibility of rural areas to ICT should be improved.</p> <p><u>Experiences with ERDF and opportunities for the future period</u></p> <ul style="list-style-type: none"> <li>▪ The new program offers opportunities for a better coordination between technology and innovation policy</li> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS 2 region contains some research and academic institutions (University Stuttgart, location with Universities of Applied Science). However it is unclear if regional interventions in these areas will be taken.</li> </ul>
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*Region BW Freiburg*

Context	Priorities	Implementation
<p><i>Intermediate economic performance,</i> due to a high share of students, and rural areas inside the NUTS 2 area Freiburg</p> <p><i>High performance in innovation &amp; knowledge economy</i></p> <p><i>Intermediate access to TIC,</i></p> <p>Low access to transport</p> <p>Intermediate risk</p> <p>In comparison with the NUTS2 regions Stuttgart and Karlsruhe (which are part of the same NUTSI region Baden-Wurtemberg) the region Freiburg holds a lower economic performance as well as a lower population density. The region Freiburg contains rural areas. Likewise the performance in innovation &amp; knowledge economy is not comparable with the regions Stuttgart and Karlsruhe</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Freiburg contains no objective 2 area</p> <p><u>Policy options</u></p> <p>Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. Against this background we expect no big increase of ERDF interventions. However <i>no</i> definite and official strategy yet, but strategies so far include knowledge diffusion, support for SME.</p>	<p>Freiburg has a lot of natural assets, no specific risks and no dangerous sites. Environment priority should not be too high.</p> <p>The stimulating of investment for rehabilitation of contaminated sites, energy efficiency etc. might be important for other areas in Baden-Württemberg but not for rural and less agglomerated areas in the NUTS2 region Freiburg.</p> <ul style="list-style-type: none"> <li>▪ Incentives to set up new business</li> <li>▪ stimulating innovation in SMEs</li> <li>▪ improving network cooperation between the university, SMEs etc.</li> </ul> <p>are necessary.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ Weak awareness due to the poor eligibility to ERDF/ESF</li> <li>▪ Due to the new opportunities for regional policy the objective 2 policy might play a more important role in the future</li> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and</li> </ul>

		<p>academic institutions (University Freiburg). However it is unclear if regional interventions in these areas will be taken.</p> <ul style="list-style-type: none"> <li>▪ Development of an objective 2 policy</li> </ul>
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*Region BW Tübingen*

Context	Priorities	Implementation
<p>High economic performance Intermediate performance in innovation &amp; knowledge economy Intermediate access to TLC&amp;ICT&amp;KE Low access to transport Intermediate risk</p> <p>Compared with the regions Stuttgart and Karlsruhe in the same lander Baden-Wurtemberg, the region Tübingen holds a lower economic performance as well as a lower population density. The region Tübingen contains more rural areas. Likewise the performance in innovation &amp; knowledge economy is not comparable with the regions Stuttgart and Karlsruhe. Compared with the average of BW more people are employed in the manufacturing sector. SMEs are predominant.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Only one administrative district (Zollernalbkreis) is objective 2 area.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet. Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. Against this background ERDF interventions are not necessary.</p>	<p>Tübingen has a lot of natural assets, intermediate risks and many dangerous sites.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>The stimulating of investment for rehabilitation of contaminated sites, energy efficiency etc. might be important for other areas in Baden-Württemberg but not for rural and less agglomerated areas in the NUTS2-region Tübingen. Innovation and KE and transport infrastructure should have a major priority.</p>

*Region BY Oberbayern*

Context	Priorities	Implementation
<p>High economic performance</p> <p>High performance in innovation &amp; knowledge economy (KE)</p> <p>Intermediate access to TLC&amp;ICT&amp;KE</p> <p>Low access to transport</p> <p>Intermediate risk</p> <p>Oberbayern is with München the strong economic centre of the region. Their GDP-growth is higher than the Federal average. The most important driving force for growth are firms of the knowledge based economy (information and communication sector). As well the film&amp;media entrepreneurs and car manufacturing provide important contributions to regional growth.</p> <p>The R&amp;D intensive firms and the public R&amp;D infrastructure are responsible for the excellent economic performance and high performance in KE.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Oberbayern contains no objective 2 area.</p> <p><u>Policy options</u></p> <p>In cooperation with the European Agricultural Guidance and Guarantee Fund/Guidens (EAGGF) regional policy has five main fields for objective 2 regions:</p> <ul style="list-style-type: none"> <li>▪ infrastructure consolidation</li> <li>▪ stimulation of the competitiveness (investment grants)</li> <li>▪ knowledge diffusion and support of business R&amp;D</li> <li>▪ tourism</li> <li>▪ city and rural development incentives</li> </ul> <p>No definite and official strategy yet. However, we expect that regional interventions take place in a core area that contains primarily the Bavarian East boarder regions and few other rural regions. Main fields are the</p> <ul style="list-style-type: none"> <li>• support to tourism</li> <li>• measure to stimulate rural development (in cooperation with EAGG)</li> <li>• improvement of urban areas</li> </ul>	<p>If - irrespective from the economic potential of the region - regional policy will play an active role, than infrastructure support (transport) might be useful.</p> <p>Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. Against this background we expect no big increase of ERDF interventions.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ Weak awareness due to the poor eligibility to ERDF/ESF</li> <li>▪ Technology and innovation policies are concentrated on agglomeration areas.</li> <li>▪ However the new proposals from the Commission create new opportunities in the field of <ul style="list-style-type: none"> <li>○ environmental protection against flood water hazards</li> <li>○ improving urban infrastructure</li> </ul> </li> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS 2 region contains some research and</li> </ul>

		academic institutions (University München). However it is unclear if regional interventions in these areas will be taken.
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*Region BY Niederbayern*

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>  <i>Low performance in innovation &amp; knowledge economy</i>  <i>Intermediate access to TLC&amp;ICT&amp;KE</i>  <i>Low access to transport</i>  <i>Intermediate risk</i></p> <p>Niederbayern has no agglomeration centre. Most important sectors are industry, tourism and agriculture, dominated by SMEs (except BMW car producer in Dingolfing). The unemployment rate is a little bit below the Bavarian average. The access to transport seems better than suggested by standardised data, because motorway A3 and A 92 connect the region to the European traffic network. The Main-Donau channel is important and the distance to the new Munich airport is small.</p> <p>Due to the boarder with Czechia interregional competition is important.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>During the current program period Freyung-Grafenau and Regen are objective 2 areas, both are boarder areas. Unemployment and structural change are the main reasons for support to the rural districts Regen and Freyung-Grafenau. Main instruments are infrastructure consolidation, stimulation of the regional competitiveness (investment grants) and support of tourism.</p> <p><u>Policy options</u></p> <p>In cooperation with the European Agricultural Guidance and Guarantee Fund/Guidens (EAGGF/G) regional policy has five main fields for objective 2 regions:</p> <ul style="list-style-type: none"> <li>▪ infrastructure consolidation</li> <li>▪ stimulation of the competitiveness (investment grants)</li> <li>▪ knowledge diffusion and support of business R&amp;D</li> <li>▪ tourism</li> </ul>	<p>Regional policy in the objective 2 areas primarily tries to improve tourism and protection against flood hazards. Strategy has to keep in mind:</p> <ul style="list-style-type: none"> <li>▪ limited absorptive capacity for innovation policies</li> <li>▪ limited accessibility of private sector</li> <li>▪ higher relevance of primary sector and tourism</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ Good experiences with EAGG-cooperation</li> <li>▪ The new proposals from the Commission create new opportunities in the field of environmental protection against flood water hazard (for specific local projects)</li> <li>▪ Due to the European expansion to the East, the rural districts Regen and Freyung-Grafenau are bridges to markets in Eastern Europe. Lots of</li> </ul>

	<ul style="list-style-type: none"> <li>▪ city and rural development incentives</li> </ul> <p>No definite and official strategy yet. However, we expect that regional interventions are concentrated on a core area that contains primarily the Bavarian East boarder regions and few other rural regions. Main instruments are the support to tourism and measure to stimulate rural development (in cooperation with EAGG). Therefore regional policy in the objective 2 areas tries to improve tourism, protection against flood hazards, improvement of urban quality of life.</p>	<p>firms and corporations have already chosen the rural district Regen as their economic location and interregional cooperation could be improved. Measures to</p> <ul style="list-style-type: none"> <li>▪ attract new firms.</li> <li>▪ improve the connection to the Bavarian innovation network ("Bayern innovative).</li> <li>▪ increase foreign trade activities should be continued.</li> </ul> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (Nürnberg, Erlangen). However it is unclear if regional interventions in these areas will be taken.</li> </ul>
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*Region BY Oberpfalz*

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i></p> <p><i>Intermediate performance in innovation &amp; knowledge economy</i></p> <p><i>High access to TLC&amp;ICT&amp;KE</i></p> <p><i>Low access to transport</i></p> <p><i>Intermediate risk</i></p>	<p><u><i>Objective 2 policy 2000-2006</i></u></p> <p>Regional policies during the current program period offer for the objective 2 areas investment grants, a specific program to diffuse new technologies into SMEs and promotion of tourism The update of the mid term evaluation emphasis the efficiency of</p>	<p>Tourism, infrastructure and measure to stimulate rural development should might play a predominant role.</p> <p>Strategy has to keep in mind:</p> <ul style="list-style-type: none"> <li>▪ limited absorptive capacity for innovation policies</li> <li>▪ limited accessibility of private</li> </ul>

<p>The regional statistical context analysis seems quite right, however the high access to TLC&amp;ICT&amp;KE is probably not representative for all (in particular rural) areas.</p> <p>Objective 2 areas are Cham, Neustadt, Schwandorf and Tirschenreuth</p> <p>The sectoral structure is dominated by industry in particular electronic and metal industry, mechanical engineering and vehicles construction.</p> <p>Due to the boarder with Czechia interregional competition is important.</p>	<p>coordinated activities by ERD, ESG and EAGG. Main activities are</p> <ul style="list-style-type: none"> <li>▪ support for tourism</li> <li>▪ Infrastructure consolidation</li> <li>▪ Stimulation of the competitiveness (investment grants)</li> </ul> <p><u>Policy options</u></p> <p>In cooperation with the European Agricultural Guidance and Guarantee Fund/Guidens (EAGGF) regional policy has five main fields for objective 2 regions:</p> <ul style="list-style-type: none"> <li>▪ infrastructure consolidation</li> <li>▪ stimulation of the competitiveness (investment grants)</li> <li>▪ knowledge diffusion and support of business R&amp;D</li> <li>▪ tourism</li> <li>▪ city and rural development incentives</li> </ul> <p>No definite and official strategy yet. However, we expect that regional interventions are connect to a core area that contains primarily the Bavarian East boarder regions and few other rural regions. Main instruments are the support of tourism and measure to stimulate rural development (in cooperation with EAGG). Therefore regional policy in the objective 2 areas tries primarily to improve tourism, protection against flood hazards and urban development.</p>	<p>sector</p> <ul style="list-style-type: none"> <li>▪ higher relevance of primary sector and tourism</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (Regensburg). However it is unclear if regional interventions in these areas will be taken.</li> <li>▪ Measures to             <ul style="list-style-type: none"> <li>▪ attract new firms</li> <li>▪ improve the connection to the Bavarian innovation network ("Bayern innovative)</li> <li>▪ increase foreign trade activities should be continued.</li> </ul> </li> </ul>
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Region BY Oberfranken

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>  <i>Intermediate performance in innovation &amp; knowledge economy</i>  <i>High access to TLC&amp;ICT&amp;KE</i>  <i>Low access to transport</i>  <i>Intermediate risk</i></p> <p>The statistical context analysis seems quite right, however the high performance in innovation and KE and the high access to TLC, ICT is not representative for the current objective 2 areas in the region. As well the transport access seems better than "low".</p> <p>The regional economy is dominated by industry in particular porcelain-, textile-, food processing- plastics- and car manufacturing industry. The focus in Oberfranken is on relatively small and medium-sized businesses. The export quota is with 60 % higher than the average in Bavaria.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Objective 2 areas are the administrative districts Hof, Kronach, Wunsiedel (boarder regions). Regional policies during the current program period offer for the objective 2 areas investment grants, a specific program to diffuse new technologies into SMEs and promotion of tourism. Embedded in the main regional policy fields local activities support industrial investments and tourism, infrastructure and a "Technology Offensive" try to improve the knowledge diffusion.</p> <p>The update of the mid term evaluation emphasis the efficiency of coordinated activities by ERD, ESG and EAGG.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet. Limits to technology development in the current objective 2 areas strategies include</p> <ul style="list-style-type: none"> <li>▪ support to tourism</li> <li>▪ knowledge diffusion via support to transfer facilities,</li> <li>▪ SME promotion</li> <li>▪ and urban development measures</li> </ul>	<p>Tourism and measure to stimulate rural development should still play a predominant role.</p> <p>Strategy has to keep in mind:</p> <ul style="list-style-type: none"> <li>▪ limited absorptive capacity for innovation policies</li> <li>▪ limited accessibility of private sector</li> <li>▪ higher relevance of primary sector and tourism</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ Good experiences with EAGG-cooperation</li> <li>▪ The new proposals from the Commission create new opportunities in the field of environmental protection.</li> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS 2 region contains some research and academic institutions (Bamberg, Bayreuth). However it is unclear if regional interventions in these areas will be taken.</li> <li>▪ Measures to <ul style="list-style-type: none"> <li>▪ attract new firms.</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>▪ improve the connection to the Bavarian innovation network ("Bayern innovative).</li> <li>▪ increase foreign trade activities should be continued.</li> </ul>
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*Region BY Mittelfranken*

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>  <i>High performance in innovation &amp; knowledge economy</i>  <i>High access to TLC&amp;ICT&amp;KE</i>  <i>Low access to transport</i>  <i>Intermediate risk</i></p> <p>The statistical context analysis seems quite right, however the high performance in innovation and KE and the high access to TLC, ICT are not representative for all areas in the region.</p>	<p><u>Objective 2 policy 2000-20006</u></p> <p>Objective 2 areas are Führt and Nürnberg. Policy interventions try to increase urban quality of life and knowledge diffusion.</p> <p>The update of the mid term evaluation emphasis the efficiency of coordinated activities by ERD, ESG and EAGG.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet, but objective 2 strategy so far includes different measures to increase urban development.</p>	<p>Tourism, infrastructure and measure to stimulate rural development should play a predominant role.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (Nürnberg, Erlangen). However it is unclear if regional interventions in these areas will be taken.</li> <li>▪ Measures to             <ul style="list-style-type: none"> <li>▪ attract new firms.</li> <li>▪ improve the connection to the Bavarian innovation network ("Bayern innovative).</li> <li>▪ increase foreign trade activities</li> </ul> </li> </ul>

		should be continued.
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*Region BY Unterfranken*

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>  <i>High performance in innovation &amp; knowledge economy</i>  <i>High access to TLC&amp;ICT&amp;KE</i>  <i>Low access to transport</i>  <i>Intermediate risk</i></p> <p>The statistical context analysis seems quite right, however the high performance in innovation and KE and the high access to TLC, ICT are not representative for the rural areas in the region.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>The region has only one objective 2 area (Schweinfurt).</p> <p>The update of the mid term evaluation emphasis the efficiency of coordinated activities by ERD, ESG. Embedded into the regional development strategy ERD and ESF concentrate their activities to improve local development, the competitiveness of SMEs and human capital</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet. Limits to technology development in the current objective 2 areas. Strategies include</p> <ul style="list-style-type: none"> <li>▪ support to tourism</li> <li>▪ knowledge diffusion,</li> <li>▪ SME promotion</li> <li>▪ and urban development incentives</li> </ul>	<p>Tourism, infrastructure and measure to stimulate rural development should might play a predominant role. Strategy has to keep in mind:</p> <ul style="list-style-type: none"> <li>▪ limited absorptive capacity for innovation policies</li> <li>▪ limited accessibility of private sector</li> <li>▪ higher relevance of primary sector and tourism</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (Würzburg). However it is unclear if regional interventions in these areas will be taken.</li> <li>▪ Measures to <ul style="list-style-type: none"> <li>▪ attract new firms.</li> <li>▪ improve the connection to the Bavarian innovation network ("Bayern innovative).</li> <li>▪ increase foreign trade activities</li> </ul> </li> </ul>

		should be continued.
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*Region BY Schwaben*

Context	Priorities	Implementation
<p>Intermediate economic performance</p> <p>Intermediate performance in innovation &amp; knowledge economy</p> <p>High access to TLC&amp;ICT&amp;KE</p> <p>Low access to transport</p> <p>Intermediate risk</p> <p>The statistical context analysis seems quite right, however the high performance in innovation and KE and the high access to TLC, ICT is not representative for the rural areas in the region.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Schwaben contains no objective 2 area</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet. Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. Against this background we expect no big increase of ERDF interventions. Strategies include</p> <ul style="list-style-type: none"> <li>▪ tourism</li> <li>▪ knowledge diffusion,</li> <li>▪ SME promotion</li> <li>▪ and urban development</li> </ul>	<p>Transport infrastructure should be improved. Strategy has to keep in mind:</p> <ul style="list-style-type: none"> <li>• limited absorptive capacity for innovation policies</li> <li>• limited accessibility of private sector</li> <li>• higher relevance of primary sector and tourism</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (Augsburg)</li> <li>▪ Development of an objective 2 policy</li> </ul>

Region Berlin

Context	Priorities	Implementation
<p><i>Low economic performance</i>, but heterogeneity has to be considered (East Berlin as objective 1 region)</p> <p><i>High innovation performance</i>, but overwhelmingly due to public R&amp;D investments and high rates of population with tertiary education; high share of high tech investments typical for a metropolitan region</p> <p><i>Intermediate ICT access</i> due to relatively weak diffusion to firms and private households</p> <p><i>High infrastructure</i> performance despite congestion</p> <p><i>Low energy sustainability</i> Berlin as metropolitan area is energy importer</p> <p><i>High transportation impact</i> particularly due to high traffic intensity</p> <p>Low natural assets due to urban structure</p> <p><i>High technological risks</i></p> <p>Capital region of Germany with long-term effects of East-West division, intraregional income disparities with East Berlin as Objective 1 region</p> <p>High rates of persistent unemployment, rapid structural changes, weak industrial diffusion of new technologies despite high public R&amp;D investments, high population density with potential for service sectors</p> <p>High rates of self-employment and strong</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Berlin contains objective 2 area in the Western part (parts of Tiergarten, Charlottenburg, Wedding, Kreuzberg, Spandau, Wilmersdorf, Zehlendorf, Schöneberg, Steglitz, Tempelhof, Neukölln, Reinickendorf), while the Eastern part is supported as objective 1 region.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Objectives so far include:</p> <ul style="list-style-type: none"> <li>▪ improvement of knowledge diffusion;</li> <li>▪ initiatives on entrepreneurship;</li> <li>▪ emergence of knowledge-intensive (firm-specific) service sectors;</li> <li>▪ support of network and cluster organisations</li> <li>▪ attractiveness as urban location for culture and tourism;</li> <li>▪ reduction of intraregional disparities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Stimulating innovation in SMEs refers to weaknesses in regional innovation system, but limits to spin offs in manufacturing sectors have to be considered</li> <li>▪ concentration on services (incl. cultural services) more relevant in this metropolitan region</li> <li>▪ possible trade-off between environmental objectives and fight against high unemployment</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ More flexibility of budget allocation to the different objectives necessary;</li> <li>▪ Limits to administrative capacity for monitoring</li> <li>▪ nationalisation of control and monitoring</li> <li>▪ more freedom of allocation decisions on the regional level</li> </ul> <p>Better coordination between ERDF/ESF and state aid control necessary</p>

growth in tourism sector		
High public budget deficits		

*Region Bremen*

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>, as relative high rates of unemployment are caused by severe adjustment problems in the industrial sector</p> <p><i>Intermediate performance of KE</i>, but increasing performance in recent years due to high public R&amp;D investments</p> <p>High performance of connectivity</p> <p><i>High performance in ICT access</i> (best region in broadband infrastructure, according to recent data)</p> <p><i>Intermediate energy sustainability</i>, high efficiency due to share of service sector</p> <p><i>High transportation impact</i> (urban area)</p> <p><i>Low natural assets</i> due to urban structure</p> <p><i>High technological risks</i></p> <p>Adjustment processes from old-industrial to knowledge intensive sectors</p> <p>Emerging clusters in aircraft and space, maritime and logistics sectors, t.i.m.e., environmental and health services</p> <p>Strong economic catch-up process in employment and growth since the 1990s starting from low levels and high public</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Within the region of Bremen, parts of the City of Bremen (Walle, Gröpelingen, Burglesum, Häfen, Neustadt, Obervieland, Huchting, Vegesack, Blumenthal, Woltmershausen, Hemelingen) and the complete City of Bremerhaven is eligible for Objective 2 funding.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ Knowledge diffusion;</li> <li>▪ Entrepreneurship;</li> <li>▪ Emergence of SME and service segments;</li> <li>▪ Cluster policies;</li> <li>▪ Improving social inclusion</li> </ul>	<ul style="list-style-type: none"> <li>▪ ICT access not a major bottleneck (actually good provision of broadband)</li> <li>▪ Transport not a major priority, as not a major bottleneck for development</li> <li>▪ Risk prevention not perceived as a major priority according to field analysis (local conditions to be checked)</li> <li>▪ Strong efforts on improving attractiveness as science location, thus higher shares for innovation might be important</li> <li>▪ Inclusion and adjustment to new fields of innovative services as major challenge</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>Mono funds system in 2000-2006 with good experiences of synergies between EFRE and ESF;</p> <p>IT based monitoring system with high level of operationalisation of indicators (exported to other regions)</p>

<p>debts</p> <p>Still high level of budget deficits;</p> <p>Low rate of SMEs and self-employment;</p> <p>High level of public R&amp;D investments;</p> <p>high level of IT density;</p> <p>High population density; high intraregional disparities due to special adjustment processes in Bremerhaven</p> <p>Strong interdependencies with Lower Saxony, high employment inflow from Lower Saxony</p>		<p>Requests for future periods:</p> <ul style="list-style-type: none"> <li>▪ consideration of qualitative indicators</li> <li>▪ integration of past experiences</li> <li>▪ integration of regional participation processes</li> </ul>
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*Region Hamburg*

Context	Priorities	Implementation
<p><i>High economic performance</i> due to high level of per capita income and high growth rates</p> <p><i>Intermediate performance of KE</i> due to limited knowledge diffusion but diverse knowledge infrastructure</p> <p><i>High level of connectivity</i>, but limited access via airport for a metropolitan area</p> <p>High performance in ICT access</p> <p><i>Intermediate energy sustainability</i>, high efficiency due to share of service sector</p> <p><i>High transportation impact</i> (urban area)</p> <p><i>Low natural assets</i> due to urban structure</p> <p><i>High technological risks</i></p> <p>Metropolitan area with high share of</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Hamburg contains the objective 2 area St. Pauli and parts of the centre of Hamburg.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ knowledge diffusion via technology services and education;</li> <li>▪ improving social inclusion</li> <li>▪ emergence of service segments including cultural services;</li> <li>▪ support for private cluster organisations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Metropolitan area with decisive role of service sector</li> <li>▪ High relevance of adjustment of labour markets and qualification to knowledge economy</li> <li>▪ Rehabilitation of brownfields as a major topic for policy</li> <li>▪ Infrastructure investments in ports as major issue</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>Weak awareness due to poor eligibility to EFRE/ESF;</p> <p>Poor experiences before 2000</p> <p>Need to build up new structures for</p>

<p>interdependencies with Lower Saxony and Schleswig Holstein;</p> <p>Small area with objective 2 eligibility;</p> <p>Leading German region in terms of per capita income</p> <p>High share of services</p> <p>High-level public R&amp;D infrastructure</p>		<p>regional participation</p> <p>Requests for future periods:</p> <ul style="list-style-type: none"> <li>▪ better matching with local needs (e.g. private equity; integration of foreign entrepreneurs)</li> <li>▪ better coordination with neighbouring areas (outside and inside the region)</li> </ul>
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*Region HE Darmstadt*

Context	Priorities	Implementation
<p><i>High economic performance</i></p> <p><i>High performance in innovation &amp; knowledge economy</i></p> <p><i>Intermediate access to TLC&amp;ICT&amp;KE</i></p> <p><i>Low access to transport</i></p> <p><i>Intermediate risk</i></p> <p>In particular Frankfurt, Darmstadt, Offenbach and Wiesbaden are the growth drivers with an excellent performance in innovation &amp; knowledge economy, high employment ratio in services etc.</p> <p>The statistical context analysis seems quite right, but recent data on ICT development may show a better situation in this area</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>There is no eligible area in this NUTS2 region.</p> <p><u>Policy options</u></p> <p><i>No definite and official strategy yet.</i></p> <p>Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. Against this background ERDF interventions are less relevant.</p>	<p>The share of environment and risk should consider only intermediate risks.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ Weak awareness due to the poor eligibility to ERDF/ESF</li> <li>▪ New proposals from the Commission create new opportunities in the fields of technology diffusion and support for innovative SMES as NUTS2 region has research and academic institutions (University Frankfurt, locations with University of Applied Science). It is unclear if interventions in these areas will be taken.</li> <li>▪ The new program period offers opportunities for a better coordination between technology and innovation policy</li> </ul>

Region HE Gießen

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>  <i>Intermediate performance in innovation &amp; knowledge economy</i>  <i>Intermediate access to TLC&amp;ICT&amp;KE</i>  <i>Low access to transport</i>  <i>Intermediate risk</i></p> <p>The administrative district Gießen and Lahn-Dill district have –compared with the regional and Federal average – high unemployed rates. The manufacturing sector is probably overweighted and the share of the service sector is underdeveloped. As well we have a low population density.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Gießen (administrative district) and Lahn-Dill administrative district are objective 2 areas of the region</p> <p>In particular the rural Lahn-Dill administrative district has</p> <ul style="list-style-type: none"> <li>▪ limited absorptive capacity for innovation policies</li> <li>▪ higher relevance of primary sector and tourism</li> </ul> <p>Capital investment grants tries to increase private and public (infrastructure) capital. A specific innovation program tries to</p> <ul style="list-style-type: none"> <li>▪ improve the quality of human capital</li> <li>▪ build up regional innovation centres</li> <li>▪ support promoters of an enterprise</li> </ul> <p>The recent update of the midterm evaluation classifies the opening up of industrial sites, the support for promoters of new business and support for tourism as particularly successful programs.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ SME support</li> <li>▪ knowledge diffusion via technology services and education;</li> <li>▪ support for private cluster organisations</li> </ul>	<p>Due to the economic objectives (increase in income and employment) and needs, measures that increase the innovation performance should have a major priority, while environment &amp; risk prevention should have a lower weighting.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (University Gießen, locations with University of Applied Science). However it is unclear if regional interventions in these areas will be taken.</li> <li>▪ The new program offers opportunities for a better coordination between technology and innovation policy</li> </ul>

Region HE Kassel

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>  <i>Intermediate performance in innovation &amp; knowledge economy</i>  <i>Intermediate access to TLC&amp;ICT&amp;KE</i>  <i>Low access to transport</i>  <i>Intermediate risk</i></p> <p>In particular the area of the administrative district Kassel and areas of North and East Hessen have structural problems because</p> <ul style="list-style-type: none"> <li>▪ of the less developed service sector,</li> <li>▪ of demographic problems (excess of age),</li> <li>▪ of the dependency on few branches like agriculture, potash mining etc</li> </ul> <p>Due to this unemployment is higher and the contribution to economic growth is smaller than in the South.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Capital investment support tries to increase private and public (infrastructure) capital. A specific innovation program tries to</p> <ul style="list-style-type: none"> <li>▪ improve the quality of human capital</li> <li>▪ build up regional innovation centres</li> <li>▪ support promoters of an enterprise</li> </ul> <p>The recent update of the midterm evaluation classifies the opening up of industrial sites, the support for promoters of new business and support for tourism as particularly successful program. In terms of innovation policies the support tries to improve knowledge distribution via different competence and transfer centres.</p> <p>The update of the mid term evaluation recommends more public support for technology services and a better cooperation between the universities Kassel, Göttingen and Paderborn.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>- SME support</li> <li>- knowledge diffusion via technology services and education;</li> </ul>	<p>Strategy has to keep in mind that the absorptive capacity for innovation policies is not exhaust and due to the intermediate performance in innovation and knowledge economy the financial share of these measures should be stronger weighted. Likewise due to the economic objectives (increase in income and employment) and needs the access to transport should be improved and environment &amp; risk prevention should have a lower weighting.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (University Kassel). However it is unclear if regional interventions in these areas will be taken.</li> <li>▪ The new program offers opportunities for a better coordination between technology and innovation policy</li> <li>▪ Improved cooperation between the universities Kassel, Göttingen and Paderborn.</li> </ul>

	- support for private cluster organisations	
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*Region NS Braunschweig*

Context	Priorities	Implementation
<p><i>Low economic performance</i>, but relatively high growth rates per employed person and heterogeneity of region</p> <p>High performance in KE</p> <p>Intermediate performance in transport infrastructure</p> <p><i>High performance in ICT access</i></p> <p><i>Low share of energy sustainability</i> (rates of renewables might have been increased recently)</p> <p><i>Low transportation impact</i>, but very heterogeneous impact (concentrated on cities)</p> <p><i>Intermediate natural assets</i></p> <p><i>intermediate natural risks</i> due to flood risks</p> <p>Intermediate technological risks</p> <p>High share of public and private R&amp;D;</p> <p>Leading region in innovation performance;</p> <p>Need for connectivity between knowledge-intensive segments and regional economy</p> <p>Location disadvantage due to proximity to</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>The region Braunschweig contains inter alia the objective 2 areas City of Braunschweig, Lüchow-Danneberg, Wolfsburg, Helmstedt, Gifhorn, Wolfenbüttel, Celle.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ Cluster policy in aviation and mobility (adaptronics);</li> <li>▪ Improvement of knowledge diffusion;</li> <li>▪ Connection between older industries and new knowledge segments;</li> <li>▪ Connection between innovation and cultural services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Innovation infrastructure as major strength of the region but perhaps a need of better technology transfer</li> <li>▪ aviation and mobility as lead technologies</li> <li>▪ natural risks to be appraised by further analysis</li> <li>▪ City of Braunschweig as possible regional growth pole</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>Regional specific lead investments with influence on other projects;</p> <p>High relevance of funds for consulting infrastructures;</p> <p>No matching between EU NUTS definition and actual administrative decentralisation (regional administration – Regierungsbezirke – have been abolished)</p> <p>Strong interrelationship particularly between Braunschweig und Hannover = metropolitan region Hannover-Braunschweig-Göttingen</p>

objective 1 regions with low population density		Possible problems due to additional funding for Lüneburg
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*Region NS Hannover*

Context	Priorities	Implementation
<p><i>Low economic performance</i> in a heterogeneous region, but recent catch-up process (2002-2004)</p> <p><i>High performance of KE</i>, particularly due to innovative turnover (problems in definition), innovation is mainly centred around city of Hannover;</p> <p><i>Intermediate performance in transport infrastructure</i></p> <p><i>High performance in ICT access</i></p> <p><i>Low share of energy sustainability</i> (rates of renewables might have been increased recently)</p> <p><i>Low transportation impact</i>, but very heterogeneous impact (concentrated on city of Hannover)</p> <p><i>Intermediate natural assets</i></p> <p><i>Low natural risks</i></p> <p><i>Intermediate technological risks</i></p> <p>Regional centre is not eligible for objective 2 funds;</p> <p>Diversified intraregional structure with high share of rural areas = limits to absorptive capacities for innovation investments</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Region of Hannover contains objective 2 areas of inter alia Hameln, Holzminden, Göttingen, Osterode, Goslar.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ Cluster policy;</li> <li>▪ Support of urban cultural services;</li> <li>▪ Social inclusion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Innovation infrastructure as major strength of the region but perhaps need of technological transfer</li> <li>▪ aviation and mobility as lead technologies</li> <li>▪ natural risks to be appraised by further analysis</li> <li>▪ City of Hannover as possible regional growth pole with increasing relevance of services (cultural services)</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>Regional specific lead investments with influence on other projects;</p> <p>High relevance of funds for consulting infrastructures;</p> <p>No matching between EU NUTS definition and actual administrative decentralisation (regional administration – Regierungsbezirke – have been abolished)</p> <p>Strong interrelationship particularly between Braunschweig und Hannover =</p>

		metropolitan region Hannover-Braunschweig-Göttingen Possible problems due to additional funding for Lüneburg
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*Region NS Weser-Ems*

Context	Priorities	Implementation
<p><i>Low economic performance but catch up process in recent years</i></p> <p><i>Low performance of KE due to low population density and economic structure</i></p> <p><i>Intermediate performance in transport infrastructure</i></p> <p><i>intermediate performance in ICT access for a region with low population density</i></p> <p><i>Low share of energy sustainability (rates of renewables might have been increased recently)</i></p> <p><i>Low transportation impact (rural areas)</i></p> <p><i>Low natural assets</i></p> <p><i>Intermediate natural risk</i></p> <p><i>Intermediate technological risk</i></p> <p>High share of rural and peripheral areas;</p> <p>Limits to absorptive capacities for R&amp;D investments;</p> <p>High relevance of tourism with remaining deficits in cultural services;</p> <p>Need for connections between agriculture and tourism sectors;</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Weser-Ems includes objective 2 areas Wilhelmshaven, Cloppenburg, Emden, Leer, Aurich, Wittmund, Friesland, Weser-Marsch, Delmenhorst, Oldenburg, Emsland</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ Improving infrastructures for logistics and tourism;</li> <li>▪ Emergence of cultural service segments</li> </ul>	<ul style="list-style-type: none"> <li>• Limited absorptive capacity for innovation policies</li> <li>• limited accessibility of private sector</li> <li>• higher relevance of primary sector (highest share in Germany) and tourism</li> <li>• natural risks may require further investigation</li> <li>• port of Wilhelmshaven as major project to improve infrastructure and accessibility</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>Regional specific lead investments with influence on other projects;</p> <p>High relevance of funds for consulting infrastructures;</p> <p>No matching between EU NUTS definition and actual administrative decentralisation (regional administration – Regierungsbezirke – have been abolished)</p> <p>Possible problems due to additional</p>

Interdependencies with Bremen		funding for Lüneburg
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*Region NW Düsseldorf*

Context	Priorities	Implementation
<p><i>Intermediate economic performance, due to areas with structural problems and rural areas</i></p> <p><i>Intermediate performance in innovation &amp; knowledge economy</i></p> <p><i>High access to TLC&amp;ICT&amp;KE</i></p> <p><i>High access to transport</i></p> <p><i>High risk</i></p> <p>The NUTS2 Düsseldorf region and their objective 2 areas are inhomogeneous. On one hand we have rural administrative districts like Wesel or Kleve, on the other hand the rest are agglomerations with big structural change in industry (heavy industry, mining textile industry). That causes an intermediate income performance and high unemployment. Due to qualification deficits and mismatch unemployment the share of long term unemployed people is in particular higher than the Federal average in administrative districts that belong to the Ruhr area (Duisburg, Essen, Oberhausen, Wesel)</p> <p>Demographic problems, particular in the Ruhr area.</p>	<p><u>Objective 2 policy 2000-20006</u></p> <p>Duisburg, Essen, Krefeld, Oberhausen, Wesel are objective 2 areas. Main instruments are:</p> <ul style="list-style-type: none"> <li>▪ consultation support for SMEs,</li> <li>▪ human capital qualification</li> <li>▪ knowledge diffusion via transfer facilities and innovation assistance for SMEs</li> <li>▪ R&amp;D infrastructure for entrepreneurs and founder of new business</li> <li>▪ Revitalising of industrial monuments and areas for cultural activities and tourism</li> </ul> <p>Good experiences with</p> <ul style="list-style-type: none"> <li>▪ new instruments of regional policy beside traditional investment grants for private and public investments,</li> <li>▪ private public partnership</li> <li>▪ ESF cooperation</li> </ul> <p>The instruments are in line with the local needs.</p> <p><u>Policy options</u></p> <p>Regional policy in terms of the German "philosophy" supports areas whose</p>	<p>Due to low energy efficiency and the high share of contaminated sites environment and risk prevention will be important as well as stimulation innovative SMEs, human capital qualification</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (University Düsseldorf, Duisburg, Essen, Wuppertal location with Universities of Applied Science); However it is unclear if regional interventions in these areas will be taken and we do not know the eligible regions.</li> <li>▪ Improved cooperation between regional and research policy</li> <li>▪ Improved cooperation between the universities on the field of knowledge diffusion, education and support for innovative SMEs and innovative business founder.</li> </ul>

	<p>economic performance is considerably below the Federal average. Against this background we expect that primary the districts of the Ruhr-area still will benefit from regional policy. However <i>no</i> definite and official strategy yet. We expect a selection a core area of eligible regions based on the criteria unemployment rate, share of long term unemployed persons, GDP, R&amp;D expense. Concerning innovation promotion measures outside the core area will be taken.</p> <p>Main fields of policy are</p> <ul style="list-style-type: none"> <li>▪ financial aid for SMEs</li> <li>▪ improvement of the consulting and training network</li> <li>▪ R&amp;D support and support for innovation clusters and infrastructure</li> <li>▪ urban development, tourism</li> <li>▪ innovation support for more resource and energy efficiency</li> <li>▪ site recovery.</li> </ul>	
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*Region NW Köln*

Context	Priorities	Implementation
<p><i>Intermediate economic performance</i>  <i>High performance in innovation &amp; knowledge economy</i>  <i>Intermediate access to TLC&amp;ICT&amp;KE</i>  <i>Intermediate access to transport</i></p>	<p><u>Objective 2 policy 2000-2006</u>                      NUTS area Köln includes only one objective 2 area (Heinsberg). Main instruments are investment loans and</p>	<p>Regarding measures to improve the innovation and knowledge economy the absorptive capacity of Heinsberg is limited, however not in the agglomerated areas. Probably a better access to ICTs</p>

<p><i>High risk</i></p> <p>The NUTS2 region Köln includes agglomerated cities and administrative districts with lower population densities. Köln, Bonn, Aachen and Leverkusen are the growth drivers and they are responsible for the high performance in innovation and knowledge economy. The high risk should not be weighted too high, because the area has a long experience with flood hazards and an improved protection infrastructure.</p> <p>The statistical context analysis seems quite right. Access to ICT is evolving rapidly and find data show a good situation.</p>	<p>guarantees, financial bonus for founders of new business, knowledge diffusion via technology centre. The instruments are in line with the local needs.</p> <p><u>Policy options</u></p> <p>Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. Against this background we expect that Heinsberg still will benefit from regional policy. However <i>no</i> definite and official strategy yet. However <i>no</i> definite and official strategy yet. We expect a selection a core area of eligible regions based on the criteria unemployment rate, share of long term unemployed persons, GDP, R&amp;D expense. Concerning innovation promotion measures outside the core area will be taken.</p> <p>Main fields of policy are</p> <ul style="list-style-type: none"> <li>▪ financial aid for SMEs</li> <li>▪ improvement of the consulting and training network</li> <li>▪ R&amp;D support and support for innovation clusters and infrastructure</li> <li>▪ urban development, tourism</li> <li>▪ innovation support for more resource and energy efficiency</li> <li>▪ site recovery.</li> </ul>	<p>and additional infrastructure improvements are important. This is also valid for the other areas outside of the growth poles.</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (University Aachen, Bonn, Köln location with Universities of Applied Science)</p> <ul style="list-style-type: none"> <li>▪ Improved coordination between regional and R&amp;D policies.</li> </ul>
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Region NW Münster

Context	Priorities	Implementation
<p><i>Low economic performance, however the NUTS2</i></p> <p><i>Intermediate Innovation &amp; Knowledge economy (KE)</i></p> <p><i>Intermediate access to TLC&amp;ICT&amp;KE</i></p> <p><i>Intermediate access to transport</i></p> <p><i>Low risk</i></p> <p>The 'NUTS2 region Münster includes part of the Ruhr area with Bottrop, Gelsenkirchen and Recklinghausen. They have a big structural change in industry. That causes an intermediate income performance and high unemployment. Due to qualification deficits and mismatch unemployment the share of long term unemployed people is in particular higher than the Federal average in administrative districts that belong to the Ruhr area. Apart from Münster-City the other administrative districts are rural areas. Heavy problems with the demographic process in the Ruhr area.</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>The region contains Gelsenkirchen, Recklinghausen and Warendorf as objective 2 areas.</p> <p><u>Policy options</u></p> <p>Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. Against this background we expect that primary the districts of the Ruhr-area still will benefit from regional policy. However <i>no</i> definite and official strategy yet. However <i>no</i> definite and official strategy yet. We expect a selection a core area of eligible regions based on the criteria unemployment rate, share of long term unemployed persons, GDP, R&amp;D expense. Concerning innovation promotion measures outside the core area will be taken.</p> <p>Main fields of policy are</p> <ul style="list-style-type: none"> <li>▪ financial aid for SMEs</li> <li>▪ improvement of the consulting and training network</li> <li>▪ R&amp;D support and support for innovation clusters and infrastructure</li> <li>▪ urban development, tourism</li> <li>▪ innovation support for more resource and energy efficiency</li> </ul>	<p>Regarding the Ruhr area and de to their low energy efficiency, the high share of contaminated sites environment and risk prevention will be important as well as stimulation innovative SMEs and human capital qualification</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (University Münster)</li> </ul>

	<ul style="list-style-type: none"> <li>▪ site recovery.</li> </ul>	
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*Region NW Detmold*

Context	Priorities	Implementation
<p><i>Low economic performance</i>  <i>Intermediate performance in innovation &amp; knowledge economy</i>  <i>Intermediate access to TLC&amp;ICT&amp;KE</i>  <i>Low access to transport</i>  <i>Intermediate risk</i></p> <p>The statistical context analysis seems quite right. However the intermediate access to ICT seems too positive for rural areas. As well the low economic performance seems not an appropriate classification, however the core group mentions that Detmold is a "boarderline" region to "intermediate economic performance".</p> <p>The area is dominated by manufacturing (high share of furniture industry) In the recent years the growth rate of new jobs is higher than in Northrhine Westphalia. The rate of employment persons drops down.</p>	<p><u>Objective 2 policy 2000-20006</u></p> <p>The region contains no objective 2 area.</p> <p><u>Policy options</u></p> <p>Regional policy in terms of the German "philosophy" supports areas whose economic performance is considerably below the Federal average. However no definite and official strategy yet. Strategies so far might include</p> <ul style="list-style-type: none"> <li>▪ consultation support for SMEs,</li> <li>▪ human capital qualification</li> <li>▪ knowledge diffusion via transfer facilities and innovation assistance for SMEs</li> <li>▪ R&amp;D infrastructure for entrepreneurs and founder of new business</li> </ul> <p>However no definite and official strategy yet. We expect a selection a core area of eligible regions based on the criteria unemployment rate, share of long term unemployed persons, GDP, R&amp;D expense. Concerning innovation promotion measures outside the core area will be taken.</p> <p>Main fields of policy are</p>	<ul style="list-style-type: none"> <li>▪ Limited absorptive capacity for innovation policies in rural areas</li> <li>▪ limited accessibility of private sector in rural areas</li> <li>▪ Improvement of transport access</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS 2 region contains some research and academic institutions (University Bielefeld, Paderborn)</li> <li>▪ Development of an objective 2 policy</li> </ul>

	<ul style="list-style-type: none"> <li>▪ financial aid for SMEs</li> <li>▪ improvement of the consulting and training network</li> <li>▪ R&amp;D support and support for innovation clusters and infrastructure</li> <li>▪ urban development, tourism</li> <li>▪ innovation support for more resource and energy efficiency</li> <li>▪ site recovery.</li> </ul>	
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*Region NW Arnsberg*

Context	Priorities	Implementation
<p><i>Low economic performance</i>  <i>Intermediate performance in innovation &amp; knowledge economy</i>  <i>Intermediate access to TLC&amp;ICT&amp;KE</i>  <i>Intermediate access to transport</i>  <i>Intermediate risk</i></p> <p>The statistical context analysis seems quite right, however the intermediate access to ICT seems too positive for rural areas.</p> <p>The NUTS2 region Arnsberg is not inhomogeneous. On one hand we have rural administrative districts like Märkischer Kreis, on the other hand we have urban districts. In particular the urban regions of the Ruhr area are struggling with structural change in industry. That causes an intermediate</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Objective 2 areas are Bochum, Hamm, Herne, Dortmund, the Ennepe Ruhr district.</p> <p><u>Policy options</u></p> <p>However <i>no</i> definite and official strategy yet. We expect a selection a core area of eligible regions based on the criteria unemployment rate, share of long term unemployed persons, GDP, R&amp;D expense. Concerning innovation promotion measures outside the core area will be taken.</p> <p>Main fields of policy are</p> <ul style="list-style-type: none"> <li>▪ financial aid for SMEs</li> <li>▪ improvement of the consulting and training network</li> </ul>	<p>Regarding the Ruhr area and de to their low energy efficiency, the high share of contaminated sites environment and risk prevention will be important as well as stimulation innovative SMEs and human capital qualification</p> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ The new proposals from the Commission create new opportunities in the field technology diffusion and support for innovative SMES because the NUTS2 region contains some research and academic institutions (Bochum, Dortmund)</li> <li>▪ Improved cooperation between the universities and academic institutions</li> </ul>

<p>income performance and high unemployment rates. Due to qualification deficits and mismatch unemployment the share of long term unemployed persons is in particular higher than the Federal average in the administrative districts that belong to the Ruhr area.</p>	<ul style="list-style-type: none"> <li>▪ R&amp;D support and support for innovation clusters and infrastructure</li> <li>▪ urban development, tourism</li> <li>▪ innovation support for more resource and energy efficiency</li> <li>▪ site recovery.</li> </ul>	<p>in the Ruhr area.</p> <ul style="list-style-type: none"> <li>▪ Rural areas have a limited absorptive capacity for innovation policies and they have ICT deficits</li> <li>▪ Development of an objective 2 policy</li> </ul>
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*Region RP Koblenz*

Context	Priorities	Implementation
<p><i>Low economic performance</i>, but relatively low unemployment rates</p> <p><i>Intermediate performance of KE</i>, but very poor R&amp;D investments and employment</p> <p>intermediate performance in ICT access for a region with low population density</p> <p><i>Intermediate performance in transport infrastructure</i></p> <p><i>Low share of energy sustainability</i> (rates of renewables might have been increased recently)</p> <p><i>Intermediate transport impact</i></p> <p><i>Intermediate natural assets</i></p> <p><i>Intermediate natural risks</i> (flood potential)</p> <p><i>Intermediate industrial risks</i> (lower than in other regions of Rheinland Pfalz due to fewer manufacturing sites)</p> <p>Low unemployment rates due to high share of commuters to other regions;</p> <p>High impact of military conversion (closing</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Koblenz includes objective 2 phasing out areas Rhein-Hunsrück, Cochem-Zell, Daun, Bitburg-Prüm.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include</p> <ul style="list-style-type: none"> <li>▪ infrastructural investments</li> <li>▪ strengthening of tourism sector</li> <li>▪ direct subsidies for firms</li> <li>▪ technology transfer infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>▪ Limited absorptive capacity for R&amp;D investments;</li> <li>▪ start-ups and SME as main driving forces for industrial diversification</li> <li>▪ need for further infrastructure investment</li> <li>▪ tourism as major service sector</li> <li>▪ need for collaboration with neighbored German and Luxembourg regions</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <ul style="list-style-type: none"> <li>▪ limited absorptive capacities due to restrictions to eligible areas = no consideration of spillovers and threats of unintended relocations of production and R&amp;D sites</li> <li>▪ need for better coordination between EFRE and ESF activities (inclusion of employment and qualification</li> </ul>

<p>down of US bases in the 90s, additional loss of German bases in the near future;</p> <p>Weak service sector (due to low population density);</p> <p>Highest rates of start-ups in recent years due to good infrastructure of consulting and funding;</p> <p>High share of SME</p> <p>Limited R&amp;D investments due to limited absorptive capacity</p>		<p>aspects)</p> <ul style="list-style-type: none"> <li>▪ limits to absorptive capacities due to high administrative burdens for private firms</li> </ul>
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*Region RP Trier*

Context	Priorities	Implementation
<p><i>Low economic performance</i> but catch up process in recent years</p> <p><i>Low performance of KE</i> due to low population density and economic structure</p> <p>Intermediate performance in transport infrastructure</p> <p><i>intermediate performance in ICT access</i> for a region with low population density</p> <p><i>Low share of energy sustainability</i> (rates of renewables might have been increased recently)</p> <p><i>Low transportation impact</i> (rural areas)</p> <p><i>Low natural assets</i></p> <p><i>Intermediate natural risk</i> (burnt areas???)</p> <p><i>Intermediate technological risk</i> (despite being less populated?)</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Weser-Ems includes objective 2 areas Wilhelmshaven, Cloppenburg, Emden, Leer, Aurich, Wittmund, Friesland, Weser-Marsch, Delmenhorst, Oldenburg, Emsland</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ Improving infrastructures for logistics and tourism;</li> <li>▪ Emergence of cultural service segments</li> </ul>	<p><u>Comments on proposed allocation</u></p> <ul style="list-style-type: none"> <li>▪ limited absorptive capacity for innovation policies</li> <li>▪ limited accessibility of private sector</li> <li>▪ higher relevance of primary sector (highest share in Germany) and tourism</li> <li>▪ intermediate natural risks might be mis-interpreted</li> <li>▪ port of Wilhelmshaven as major project to improve infrastructure and accessibility</li> </ul> <p><u>Experiences with ERDF and requests for future period</u></p> <p>Regional specific lead investments with influence on other projects;</p>

<p>High share of rural and peripheral areas; Limits to absorptive capacities for R&amp;D investments; High relevance of tourism with remaining deficits in cultural services; Need for connections between agriculture and tourism sectors; Interdependencies with Bremen</p>		<p>High relevance of funds for consulting infrastructures; No matching between EU NUTS definition and actual administrative decentralisation (regional administration – Regierungsbezirke – have been abolished) Possible problems due to additional funding for Lüneburg</p>
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### Region Rheinhessen Pfalz

Context	Priorities	Implementation
<p><i>Low/intermediate borderline economic performance, but relatively low unemployment rates</i> <i>High performance of KE due to high investments in R&amp;D by private sector (chemical industry)</i> <i>Intermediate transport infrastructure (weaker connections and high usage)</i> <i>High ICT access performance but weaknesses in broadband access (some recent data to be checked)</i> <i>Low share of energy sustainability (rates of renewables might have been increased recently)</i> <i>Intermediate transport impact</i> <i>Intermediate natural assets</i> <i>Intermediate natural risks (flood potential)</i></p>	<p><u>Objective 2 policy 2000-2006</u> Rheinhessen-Pfalz includes objective 2 areas of Kaiserslautern, Pirmasens, Südwestpfalz, Zweibrücken and phasing out areas.  <u>Policy options</u> No definite and official strategy yet Strategies so far include</p> <ul style="list-style-type: none"> <li>▪ infrastructural investments</li> <li>▪ strengthening of tourism sector</li> <li>▪ direct subsidies for firms</li> <li>▪ technology transfer infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>▪ High absorptive capacity for R&amp;D investments, but needs for more diversity;</li> <li>▪ start-ups and SME as main driving forces for industrial diversification</li> <li>▪ need for further infrastructure investment</li> <li>▪ cleaning of contaminated land</li> <li>▪ need for inclusion of adjusting qualification and employment policies</li> </ul> <p>need for collaboration with neighboured German and Luxembourg regions</p> <p><u>Experiences with ERDF and opportunities for future period</u> limited absorptive capacities due to</p>

<p><i>Intermediate industrial risks</i> (higher than in other regions of Rheinland Pfalz due to chemical industry)</p> <p>Low unemployment rates due to high share of commuters to other regions;</p> <p>High impact of military conversion (closing down of US bases in the 90s, additional loss of German bases in the near future;</p> <p>Need for further diversification of industry;</p> <p>Weak service sector (due to low population density);</p> <p>Highest rates of start-ups in recent years due to good infrastructure of consulting and funding;</p> <p>High share of SME</p> <p>Limited R&amp;D investments due to limited absorptive capacity</p>		<p>restrictions to eligible areas = no consideration of spillovers and threats of unintended relocations of production and R&amp;D sites</p> <ul style="list-style-type: none"> <li>• need for better coordination between EFRE and ESF activities (inclusion of employment and qualification aspects)</li> <li>• limits to absorptive capacities due to high administrative burdens for private firms</li> </ul>
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Region Saarland

Context	Priorities	Implementation
<p><i>Low economic performance</i> but recently improving growth rates</p> <p><i>Intermediate performance of KE</i> due to low private R&amp;D investments, high turnover of new products, but maybe problems of definition</p> <p><i>Intermediate performance in ICT access</i> for a region with low population density</p> <p>intermediate performance in transport infrastructure</p> <p><i>intermediate share of energy sustainability</i> (rates of renewables might have been increased recently)</p> <p><i>high transportation impact</i> due to high vehicle density in a region with lower population density, region for transition</p> <p>intermediate natural assets</p> <p><i>intermediate natural risks</i></p> <p><i>intermediate technological risks</i> (however need of rehabilitation of contaminated land)</p> <p>Old-industrial region with high needs for adjustment and revitalisation of former industrial (coal mining sites);</p> <p>High needs for adjustment on labour markets (female participation; qualification), low rates of self-employment;</p> <p>Strong catch-up process to German average in terms of employment, per capita income</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Saarland includes objective 2 areas in Saarbrücken, Saarlouis, Neunkirchen, Saar-Pfalz, St.Wendel</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ Revitalisation of former industrial sites;</li> <li>▪ Emergence of new lead clusters and service segments;</li> <li>▪ Support of entrepreneurship;</li> <li>▪ Emergence of new qualification schemes;</li> <li>▪ Social inclusion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Contaminated land is a severe bottleneck, thus high priority</li> <li>▪ public transport limited due to low population density, but infrastructure might be so far a bottleneck</li> <li>▪ natural risks to be verified by further analysis</li> <li>▪ focus on innovation restricted due to restrictions in absorptive capacity – focus on investments and linkages to new services and tourism</li> <li>▪ ICT investment important, but investments restricted due low population density</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>High administrative costs for documentation and monitoring;</p> <p>Need for coordination between EFRE and state aid</p>

<p>Industrial diversification with increasing relevance of automotive suppliers;</p> <p>Limits to private R&amp;D investments due to old-industrialised structure = limited absorptive capacities for subsidies; limited IT density despite high rates of IT service firms;</p> <p>Demographic changes with loss of population;</p> <p>Borderline region to France and Luxembourg</p>		
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Region Schleswig-Holstein

Context	Priorities	Implementation
<p>Low economic performance but heterogeneity within the region</p> <p>Intermediate performance of KE, but good performance in turnover and limits to private R&amp;D investments (strengths in diffusion)</p> <p>intermediate performance in ICT access for a region with low population density</p> <p>high performance of transport infrastructure (low usage in a peripheral region)</p> <p>high share of energy sustainability (renewables might have increased recently – but also a high share of nuclear energy)</p> <p>intermediate traffic impact, low rates of non-fuel transportation due to low population density</p> <p>intermediate natural assets</p> <p>low natural risks (however possible sea floods)</p> <p>intermediate technological risks (however high presence of nuclear energy plants)</p> <p>Peripheral region with intraregional disparities: high economic performance at the borderline to the metropolitan area Hamburg; low economic performance in peripheral areas;</p> <p>Limits to support investments in peripheral areas;</p> <p>Limits to attract private and public R&amp;D;</p>	<p><u>Objective 2 policy 2000-2006</u></p> <p>Schleswig Holstein contains objective 2 areas Schleswig-Flensburg, Nordfriesland, Dithmarschen, Rendsburg-Eckernförde, Steinburg, Pinneberg (Helgoland), Plön, Ostholstein and parts of the Cities of Kiel, Lübeck and Flensburg.</p> <p><u>Policy options</u></p> <p>No definite and official strategy yet</p> <p>Strategies so far include:</p> <ul style="list-style-type: none"> <li>▪ Cluster policies in growth poles (close to Hamburg);</li> <li>▪ Knowledge diffusion to SME;</li> <li>▪ Limits to technology development, thus support of tourism and cultural services;</li> <li>▪ Entrepreneurship by consultancy networks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Restricted absorptive capacity in innovation for many peripheral regions</li> <li>▪ restrictions for public R&amp;D due to restricted budgets available</li> <li>▪ innovation mainly for better developed areas (close to Hamburg and Kiel)</li> <li>▪ renewable energy as a major technological field besides health and maritime technologies</li> <li>▪ tourism services as major priority for areas with low population density and coastal areas</li> </ul> <p><u>Experiences with ERDF and opportunities for future period</u></p> <p>Limits to administrative capacities in firms (higher administrative costs than in German JT projects)</p> <p>High relevance of funds for consulting infrastructures</p> <p>Limits to use EFRE to attract public applied R&amp;D facilities</p>

Relatively low population density; High rates of SMEs and self-employment High impact of renewable and nuclear energy Low international accessibility		
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## ANNEX II: Methodology for transport indicators

### *The multi-index approach*

Finding a unique measure of the transport conditions in a given region, even if the analysis is focused on one main aspect like accessibility, is a very difficult task. Both demand and supply conditions play a role and both can be seen from different perspectives so that each indicator is hardly more than just a limited point of view. For that reason, we decided to use different indicators, namely three indexes:

- Infrastructure Usage Index -  $IUI_j$
- Accessibility Index -  $AI_j$
- Connectivity Index -  $CI_j$

The Infrastructure Usage Index measures the level of road and rail demand entering the region and leaving the region (i.e. generated and attracted traffic excluding trips starting and ending in the same region) in comparison to the supply of major roads and rails. The index is computed separately for road and rail and for passenger and freight<sup>8</sup> by taking the ratio between the demand and the length of the main infrastructures (e.g. motorways, dual carriageway roads, etc.). Thus four separate ratios are computed. Then the logarithm of each ratio is computed and a weighted average of the four logs is computed where the weights are the modal shares of road and rail on passenger and freight demand. The weighted average is the Infrastructure Usage Index. The index is greater for zone where the ratio between demand and supply is higher, that is where infrastructure are more exploited.

The Accessibility Index is a synthetic measure of multimodal potential accessibility. It is based on the assumption that the attraction of a destination increases with its size (in terms of population or GDP) and declines with distance, travel time and costs. The accessibility model used in the ESPON study assumes the centroids of NUTS3 regions as origins and destinations and, then, calculates the minimum travel time (with respect to different modes of transport, that is by road, rail and air) between the various centroids. This indicator of potential accessibility contains parameters that need to be calibrated so that it cannot be expressed in

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<sup>8</sup> Generated and attracted traffic is estimated from the results of the European transport model SCENES.

familiar units. The higher is the index the higher is the accessibility. As a consequence, NUTS3 data are standardised to the average accessibility of the EU25 countries. NUTS2 indicators have been computed by the Statistical Team by averaging NUTS3 data provided by the ESPON database.

The Connectivity Index is expressed as the reciprocal of the hours needed to reach by car different transport nodes (rail stations, motorways accesses, seaports and airports) starting from the centroid of each NUTS3 region. Thus, regional centroids are taken as origins while transport terminal as destinations. The higher is the index the higher is the connectivity. Again such an indicator is available for NUTS3 European regions from ESPON and it has been averaged by the Statistical Team to obtain NUTS2 indexes.

All three indexes provide a piece of the story and there is not a hierarchy among them. As the analysis in section 2 will show, the Infrastructure Usage Index is somewhat correlated to the Accessibility Index, in the sense that zones where the former is greater than the median (showing a lower performance in terms of availability of infrastructures with respect to the generated and attracted demand), also the latter is greater than the median (showing a better performance in terms of accessibility). In other words, not surprisingly, the most accessible zones tend to be attract and generate more demand, in relative terms, than less accessible zones.

Furthermore, more than the numeric values, the most useful information is how the regions within a country are ranked according to each index and especially which performs better and which worse. When a region underperforms according to all the indexes, this is a hint that some problems exist concerning accessibility, and vice-versa if a region overperforms.

Therefore, the analysis consisted in the following steps:

- a) For each index the median across the NUTS2 regions of a given country has been computed:  $MED(IUI)$ ,  $MED(AI)$ ,  $MED(CI)$ . The median has been preferred to the mean because in most of the countries the distribution of the indexes is strongly asymmetrical and so the mean can be influenced by one or two very high (or low) values.
- b) Each region in the country has been classified as underperforming or overperforming in terms of each of the three indexes: underperforming have been considered those regions where the index is lower than the median (for the accessibility and the connectivity index) or, vice-versa, higher than the median (for the infrastructure usage index). This classification allows to compare regions in terms of a specific index.

- c) For each region has been computed the ratio between the value of the index for that zone and the median value computed above across all the zones of the country:  $AI_j/MED(AI)$  and  $CI_j/MED(CI)$  for the accessibility and the connectivity index or, vice-versa, the ratio between the median value and the value of the index for the zone:  $MED(IUI)/IUI_j$  for the infrastructure usage index. These ratios are greater than one for zone overperforming and lower than one for the regions underperforming.
- d) For each region the three ratios computed above have been summed. The higher is the sum and the better the region performs. However, as the aim of the analysis is not computing a super-index, the value of the sum is not really relevant in itself. Instead, the average and the standard deviation of the sums have been computed. The zones where the sum of the ratios is lower than the average minus one standard deviation ( $SUM_j < Average - DevSt$ ) can be considered as highly problematic with respect to the average conditions in the country. The zones where the sum of the ratios is lower than the average minus 75% of standard deviation ( $SUM_j < Average - 0.75 * DevSt$ ) can be considered as problematic even if at a less extent. On the opposite side, zone where the sum is higher than the average plus one standard deviation ( $SUM_j > Average + DevSt$ ) can be considered as those with less problems concerning their accessibility.

This analysis mixes quantitative and qualitative indications to provide a comparative picture of region's performances. It should be stressed that the results make sense in relative terms (e.g. comparing the regions each other) rather than in absolute terms. In other words, a region can perform worse than other regions of the country but this does not mean that the accessibility is absolutely poor; if the overall situation is good in the whole country, even regions classified as underperforming can enjoy a good level of accessibility.

### Multi index analysis

The multi index analysis is based on three different indicators:

- Infrastructure Usage Index - IUI<sub>j</sub>
- Accessibility Index - AI<sub>j</sub>
- Connectivity Index - CI<sub>j</sub>

The analysis includes most of the German regions, as only 10 regions are not part of the eligible regions. In fifteen regions the IU index is below the mean value, with two negative peaks for the regions of Berlin and Hamburg; also the Accessibility index is negative in fifteen regions, but these are not the same; five regions are underperforming both from the IUI and

the AI point of view. High values for the Infrastructure Usage index are normally found in the most accessible regions. Many regions show values below the national mean for the Connectivity index, but the gap is normally not too big, with the exception of the Niederbayern region.

There is only one region for which the summary index suggests a significant underperformance, that is the Niederbayern region, where accessibility and connectivity are poor in comparison to the median conditions, and the usage of infrastructure is just slightly better than the median conditions. Niederbayern is not the less densely populated region of Germany, although is among the less populated. Other regions are well below the average summary index. In particular, the Detmold region is underperforming with respect to all the three indexes and, unlike other regions, it is quite densely populated and is attracting and generating consistent traffic flows. The overperforming regions are the important metropolitan areas: Berlin, Bremen, Hamburg, Düsseldorf. Stuttgart and Mittelfranke are the only two regions where all the three indexes are positive.

By analysing the three single indexes, the main urban areas are all underperforming from the IUI point of view and, as can be expected, are overperforming in terms of accessibility and connectivity: the infrastructure are there but probably they are congested. Other regions tend to be underconnected to the main transport networks, and some of them are also less accessible than the average.

**Indexes for the NUTS2 regions of Germany**

NUTS2 region	IUI	AI	CI	Summary
Stuttgart	39.1	128.1	2.0	3.08
Karlsruhe	43.2	126.1	1.8	2.87
Freiburg	39.4	122.1	1.8	2.96
Tübingen	41.7	117.0	1.9	2.90
Oberbayern	36.3	120.2	1.5	2.87
Niederbayern	36.3	102.8	1.2	2.54
Oberpfalz	31.9	96.2	1.5	2.82
Oberfranken	35.0	98.2	1.6	2.78
Mittelfranken	36.2	123.1	2.1	3.17
Unterfranken	33.2	117.2	1.6	2.98
Schwaben	36.4	98.3	1.6	2.73
Berlin	54.8	151.5	3.2	3.63
Bremen	48.9	117.5	5.7	4.72
Hamburg	52.7	149.0	25.0	14.82
Darmstadt	43.1	168.0	2.0	3.33
Gießen	36.5	133.6	1.6	3.02
Kassel	30.9	103.4	1.8	3.03
Braunschweig	40.6	101.2	2.0	2.82
Hannover	38.7	119.9	2.2	3.16
Weser-Ems	33.7	98.3	2.8	3.45
Düsseldorf	46.0	161.9	2.9	3.68
Köln	45.0	145.5	2.6	3.41
Münster	44.7	134.6	2.6	3.35
Detmold	42.6	109.4	1.9	2.82
Arnsberg	43.1	135.2	2.2	3.14
Koblenz	38.8	127.0	1.7	2.95
Trier	31.0	112.6	1.9	3.19
Rheinhessen-Pfalz	40.9	128.9	1.7	2.93
Saarland	40.6	110.8	2.1	2.96
Schleswig-Holstein	34.1	101.3	3.4	3.72
Median	39.2	120.1	1.9	3.14
St. Dev.				0.42



## ANNEX III: Telecom indicators levels

### *Sources and definitions*

The source is: ESPON project 1.2.2 Telecommunication Services and Networks: Territorial Trends and Basic Supply of Infrastructure for Territorial Cohesion.

Main telephone lines per 100 inhabitants:

Level 1 = >70

Level 2 = 60-69

Level 3 = 50-59

Level 4 = 40-49

Level 5 = 30-39

Level 6 = <30

Cellular mobile subscribers per 100 inhabitants:

Level 1 = >90

Level 2 = 80-89

Level 3 = 70-79

Level 4 = 60-69

Level 5 = 50-59

Level 6 = <50

Estimated PC per 100 inhabitants:

Level 1 = >50

Level 2 = 40-49

Level 3 = 30-39

Level 4 = 20-29

Level 5 = 10-19

Level 6 = <10

Internet (users per 10000 inhabitants):

Level 1 = >5000

Level 2 = 4000-4999

Level 3 = 3000-3999

Level 4 = 2000-2999

Level 5 = 1000-1999

Level 6 = <1000

# ANNEX IV: Methodology for environment indicators

## Sources and definitions

### Indicators at regional level Nuts II

#### 1-Energy

Indicator	Definition	Year	Source
EN1	GDP / total electricity consumption	2000	EUROSTAT – New Cronos (Regio)
EN2	Total electricity production capacity/ total electricity consumption	2000	EUROSTAT – New Cronos (Regio)
EN3	(Total electricity production capacity – Thermal power – Nuclear power)/ Total electricity production capacity	2000	EUROSTAT – New Cronos (Regio)
Energy sustainability	Energy sustainability indicator + Energy efficiency indicator	2000	EUROSTAT – New Cronos (Regio)

#### 2-Transport

Indicator	Definition	Year	Source
TR1	Vehicles Density: Total Number of Vehicles/Total Area	2000	EUROSTAT – New Cronos (Regio)
TR2	Non-fuel Transportation: Electricity Consumption in the Transport Sector/ Total Electricity Consumption	2000	EUROSTAT – New Cronos (Regio)
TR3	Traffic Intensity: (Total number of driven intra-regional trips/Total Area) + (Total number of kilometres made by journeys produced-generated by the region/Total Area)	2001	EUROSTAT – New Cronos (Regio)
Transportation impact	Traffic intensity sustainability indicator – Clean transportation indicator		EUROSTAT – New Cronos (Regio)

**3 - Natural resources**

Indicator	Definition	Year	Source
NA1	Degree of protection: Area under Nature Protection/Total Area	2003	Irena Database
NA2	Wilderness degree: (Forest Area + Semi-Natural Area)/ Total Area	1996	Espon Corine Landcover Database
NA3	Anthropic degree: Artificial surface/ Total Area	1996	Espon Corine Landcover Database
NA4	Urban-Rural typology	1996	Espon Corine Landcover Database
Natural/rural assets indicator	$(\text{factor score} - \text{lowest score}) / (\text{highest score} - \text{lowest score}) * 100$		

**4 - Natural hazard and Technological risk**

Indicator	Definition	Year	Source
RK1	Natural hazards with anthropic implications-1: Regional flood hazard potential	1996-2002	Espon Database
RK2	Natural hazards with anthropic implications-2: (Size of burnt areas/Total area)*1000	2000	Espon Database
RK3	Polluting Sites Density: Number of Installations under IPPC obligation (IPPC Sites)/Total Area (hundreds Km <sup>2</sup> )	2000-2001	Eper-EEA
Natural risk indicator	$[(\text{RK1} - \text{lowest value}) / (\text{highest value} - \text{lowest value}) * 100] + [(\text{RK2} - \text{lowest value}) / (\text{highest value} - \text{lowest value}) * 100]$		

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