

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**

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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 Region: Prague

- *General Economic Conditions*

Prague region is limited to the city area, and consequently shows high population density, negligible share of employment in the primary sectors, and a share of manufacturing only one half below the benchmark of EU eligible regions. In terms of economic performance the overall ranking is high, because GDP per capita is 20% higher than the benchmark. Prague shows a high growth of GDP per capita, and per employee, while unemployment is lower than the benchmark. Recent trends confirm the positive dynamics, lead by foreign investment, real estates, tourism, and services. However, GDP per capita figures may be overestimated due to the capital effect.

- *Innovation and knowledge economy:*

Despite strong traditions, the innovation potential is not fully developed because of the structure of the economy and lack of funds. This is reflected in R&D expenditure over GDP below the benchmark as also number of patents applications, low employment in hi-tech

services and also low share of firms of turnover due to new products. In contrast, tertiary education indicator is higher than in the EU eligible regions average. Thus the region ranks Intermediate in comparison to the innovation performances of the overall eligible regions.

- *Accessibility*

While in general transport conditions are good, there is a missing connection of Prague to the TEN-T, incomplete radials, and inadequate link with Kladno, the second largest city in the metropolitan region.

ICT/TLC indicators are high for the Prague metropolitan region, even if the country sources are less optimistic than the ESPON database, particularly for firms with a website and households with internet access (but show a higher broadband access, however still limited in comparison to other metropolitan regions).

- *Environment and risk prevention*

Electricity efficiency is one of the worst among the eligible regions. Renewable resources are one half of the benchmark. The environmental impact of transport seems to be high, basically because of vehicle density and traffic intensity well in excess of the EU eligible regions average, while non-fuel transport is in a better situation. For the indicators of natural/rural assets the situation is quite poor, There is no indication of widespread technological risk, but a very high risk of floods of the Vltava river, and high air pollution mainly caused by transport.

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

In 2004-2006 an Objective 2 programme has been approved, with two priorities. First priority (75% of funds) is the revitalisation of the urban environment, including transport and social infrastructures measures. Second priority concerns measures for the business environment, including support to SMEs and information society. Implementation is gradually improving, but project selection in site rehabilitation, because of legal limitations, has skipped a number of critical areas under private ownership, and focussed on the more limited publicly owned sites. In the business sector the awareness of potential use of structural funds is limited.

- *Policy priorities for discussion*

The very key priority is the upgrading of the urban environment, including treatment of some polluted land sites, greater energy efficiency, alternative transport modes to decrease the impact of car traffic.

The second priority should be Innovation, where the key concept is to help Prague to move away from a traditional pattern of development based on tourism, construction, traditional services, towards a better exploitation of its well educated human capital. This implies above all enhancing regional R&TD potential and –second- stimulating innovation in SMEs.

Assuming that some transport infrastructure can be financed by the Cohesion Fund, the role of the ERDF in this area is quite limited, or marginal, perhaps targeted to a small number of specific local measures,

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

Prague is the only region of the Czech Republic eligible for the competitiveness objective for 2007-13; it represents a considerable share in the overall national population (more than a tenth). As for many capital city regions, the population density is very high while the economic structure is heavily dependent on services (table 1). The latter aspect is due to the localization in the capital city region of public offices and headquarters of the main private firms; by contrast, the presence of manufacturing is marginal, amounting to a tenth of regional employment.

Tab. 1 Structural indicators

	Population (thousands)	Population density	Share of primary sectors on total employment	Share of manufacturing on total employment	Rural/urban classification	Presence of manufacturing
Prague	1,169	2,358	0.58	10.37	Urban	Low
EU eligible regions	313,711	129	3.34	20.18		

Source: Eurostat and our proceedings - see vol. I

Concerning the degree of competitiveness (table 2), Prague exhibits an excellent performance, in particular for the growth of real GDP and GDP per employed person. Overall, for these indicators, the new eligible regions of Eastern Europe show high values because of the catch-up process towards the levels of the most advanced areas of Western Europe. In terms of level of per capita GDP, Prague stands in the middle-top ranking; this achievement is remarkable, even in comparison to the more developed financial and administrative centres of Inner London, Bruxelles and Luxembourg.

In 2003, the level of per capita GDP in terms of PPS in the Czech Republic reached 68.8% of the EU 25 average. Nevertheless, in comparison with the other new Member States, the Czech Republic had practically made no progress in catching up with the level of the EU25 average (in

terms of per capita GDP in PPS)¹ in the period of 1991 – 2003 whereas all the other countries, except for Latvia and Lithuania, had achieved substantial progress on this indicator²

Growth and overall economic development considerably differs across regions. There is immense disparity between Prague and the other NUTS 2 regions in terms of per capita GDP. In 2003, the per capita GDP of Prague significantly exceeded both the EU 15 and EU 25 average while the income levels of the other regions were well below even this level, ranging in comparison with EU 25 average from 56.6% for Central Moravia to 65.6% for Southwest Bohemia. However, the Prague's GDP is rather overestimated due to some methodological problems with measuring of GDP, while the opposite would be true for other regions, especially for Central Bohemia, which forms a natural hinterland of Prague³.

Tab. 2 Economic performance indicators

	GDP per capita	Rate of unemployment	Growth of GDP	Growth of GDP per employed person	Economic performance ranking
Prague	30,107	3.92	3.89	3.15	High
EU eligible regions	24,162	6.42	2.34	0.99	

Source: EUROSTAT and DG Regio - see vol. I

It is evident that in Prague the rise in the occupational basis is less pronounced than the average of 168 eligible EU regions as witnessed by the larger gap in the labour productivity relative to GDP growth (table 3). However, this does not mean that the labour market conditions of such a region are negative. Indeed, Prague presents the lowest unemployment rate across all EU capital city regions, closely behind Noord-Holland (Amsterdam) and Stockholm and half of that recorded by the region of Bratislava in Slovakia (Bratislava).

¹ In 2003 the reached level of per capita GDP in PPS compared to the EU25 average is nearly the same as in 1991. However, it is expected that after implementing necessary reforms, the following pace of catching up will be stronger.

²European Commission, 2004

³ For further details see Hampl et al, 2001

Tab. 3 Trends of rate of unemployment and of GDP in Prague

Year	1999	2000	2001	2002	2003	2004
GDP (% of national average)	211,1	214,6	226,0	226,0		
Rate of unemployment (December of respective years)	3,52	3,42	3,39	3,73	4,02	4,16*
National rate of unemployment	9,4	8,8	8,9	9,8	10,3	9,5*

*Note: since July 2004 the methodology of calculation of rate of unemployment was changed in order to eliminate those who are not able to take up a job due to illness or other reasons. Consequently, the rate of unemployment dropped nearly by 10%.

Tab. 4 Economic performance indicators (European eligible regions=100)

GDP per capita	Rate of unemployment	Growth of GDP	Growth of GDP per employed person
125	61	166	317

Source: EUROSTAT and DG Regio.

The period of 1990s was characterised by initial economic downturn followed by relatively strong growth until 1996. When the first stimuli of the transition to the market economy were exhausted, the Czech Republic plunged again into recession mainly due to improper institutional and legal framework and misbehaviour of many actors during privatization process and of weakly regulated capital market⁴. In 1997, this led to fall of right-wing government chaired by V. Klaus, and its replacement by temporary government which implemented several needed measures including an introduction of the standard package of investment incentives for foreign investors. Consequently, since 2000 the country has recorded steady economic growth, though its growth rate remains lower than in Poland or Slovakia.

Currently, the Czech Republic is not confronted with excessive external imbalance. The deficit of trade balance is rapidly improving and is more than compensated by high and relatively stable inflows of foreign capital. Inflation rate is achieving historically low levels in spite of increasing prices of commodities on the world markets. Continuing economic restructuring is accompanied with substantial productivity gains. The country has been receiving relatively large amounts of foreign direct investment since 1998. By the end of 2003 the stock of FDI amounted 1161,8 billions of CZK – 45.9% of the country's GDP. More than 80% originated in EU15 countries. Inflow of FDI has been the crucial factor of economic restructuring. Large amounts of FDI helped to mitigate huge underinvestment from the past and provided access to

⁴ For more see - e.g. Mičoch, 2000

world markets and transfer of know-how and technology. However, current economic situation has also several weaknesses. Consequently, the Czech economy is considerably dependent on the activities of foreign firms. Results of a recent analysis performed by Czech Statistical Office (2004) showed that companies under foreign control perform much better in comparison to indigenous companies. They massively contribute to the increasing export (since the accession, the Czech export increased by 20%). Nearly 70% of country's exports are oriented into the EU15 countries.

Within the context of a need for a gradual switch from low-road to high-road strategy of competitiveness, the current emphasis of the state policy for inward investors should refocus from traditional investment incentives firstly to after-care programmes aiming at maximising positive effects of existing foreign investments and secondly, at improving their structure towards the industrial branches with higher added value and with more sophisticated production requiring high-quality human capital⁵. This policy shift is to certain extent already going on, and consequently Prague recently succeeded in attraction of several prestigious investments like one of DHL global centres.

Recent data confirm a clear position of Prague as a leading centre of the Czech Republic. There are no official forecasts of future development on the regional level, but available information support the opinion that the Prague is going to sustain its lead or even enlarge it even further in medium term. The main arguments are continuous attractiveness of Prague for foreign businesses (a new trend is attraction of several FDI's in high-tech or medium high-tech sectors) and tourists, expected further increase of wage differentiation according to level of qualification (favouring Prague due to its well educated labour force) and continuous growth of employment in progressive tertiary sector.

⁵ Blaijak, 2003

3. Innovation and knowledge economy

The intermediate score of Prague with respect to the indicators of the innovation potential mirrors perfectly the nature of a capital city region (table 5). It presents a low intensity in R&D and patent activities as compared to the average value of the EU eligible regions; indeed, these are typically good measures of the innovative effort of manufacturing industries that, as mentioned above, are relatively marginal in this area.

The presence of academic centres and headquarters of private and public firms could explain the above-average share of population with tertiary education. More specifically, similarly to Bratislava, Prague is characterized by one of the largest shares of employment in high-tech services (almost twice of the EU average), remarking the relatively high concentration of communications, computers services and R&D firms in this area. It is possible that, in the transition from a planned to an open market economy, fiscal incentives may have encouraged the localization of this kind of activities in this region where the population with tertiary education is relatively more abundant (and less expensive) than the western NUTS2 regions. In this respect, Prague as well as Bratislava exhibits a soft development path, strongly focused on knowledge-intensive services activities.

Tab. 5 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
Prague	1.13	86	0.68	6.44	28.48	15.00	Intermediate
EU eligible Regions	1.70	136	1.49	3.23	24.81	35.21	

Source: EUROSTAT and Community Innovation Survey.

Relatively strong R&D tradition as well as relatively good qualification of labour force represents significant potential of the Czech Republic. The development/exploitation of this potential is undermined by the lack of funds and by missing links between basic and applied research. Basic research is carried on primarily by public institutions, where the lack of funds is

most serious. Many researchers engaged in academic sector are facing considerably low level of living standards, which impel them to leave the country.

Applied research on the other hand is the domain of private sector. However, the research and development in business sector was considerably undermined during the transition period. The need of additional public sources should be carefully considered, because their developmental effect would be minimal without gradual evolution of institutional capacity (e.g. evaluation systems of education and of R&D efficiency are at their infancy).

Box 1. Bohemian Regional Innovation Strategy (BRIS)

City of Prague has recently finalized drafting of Bohemian Regional Innovation Strategy⁶. It is the first attempt to systematically address innovation and knowledge economy in Prague bringing together all major relevant actors (public administration, research institutes, universities, innovative firms, science and technology parks, etc.). The BRIS provides a thorough analysis of key weaknesses (lack of cooperation, lack of proper financial instruments, and insufficient demand for innovation among firms) and outlines the strategy how to address some of them. However, it was concluded that many factors could be changed only from national level (esp. weaknesses and failures of institutional context and administrative issues). There is a chance that these would be addressed as a result of adoption of national "Strategy of Economic Growth" by Government (Summer 2005). The BRIS should be also one of the key documents used for drafting of the new programming documents for the next programming period (2007-2013).

⁶ See also www.bris.cz.

4. Accessibility

4.1. Access to transport infrastructure

The Czech Republic is covered by dense transport network, however, generally not of sufficient standard. There are not enough funds not only for new construction and upgrading but even for the very maintenance.

Nevertheless, the construction of new roads, upgrading and maintenance is one of the most important priorities of the national public policy. Every year there are significant changes in transport facilities.

Overview of main infrastructure

The construction and modernization of roads and motorways is based on aims set in the transportation policy of the Czech Republic in the years 2005–2013 (priorities include: completion of the development of the relevant sections of TEN-T Network, connection of all regions to a quality network of motorways and expressways, ensuring a better solution of transit traffic through towns and villages, ensuring a sufficient capacity of road infrastructure in border and structurally affected areas, etc.). Financial support from Cohesion Fund, Structural Funds and Phare is being utilized. The total sum allocated from EU sources in the period 1993-2005 amounted to 40 millions EURO. These funds are used for the continuing development of TEN_T transports.

Average traffic volume and transportation outputs in the motorway and road network are growing constantly. Especially the growth of heavy freight traffic on motorways and expressways is highly significant since the accession to EU. The lack of funds for general maintenance and repairs in recent years has had a negative impact on technical conditions of road pavements and bridges in the case of roads and, partially, in the case of motorways.

Prague has 10 km of motorways and 76 km of expressways. The total number of motor vehicles registered on the Prague territory has been continuously growing and so the degree of motorization of the territory. In Prague, there is one car per 1.8 inhabitants and Prague has overcome the most motorised cities of Western Europe where the degree of motorization is usually within the range one car per 2.1-2.3 inhabitants. As an example, on motorway D1 (Prague-Chodov) traffic volumes exceeding 90,000 vehicles per 24 hours were recorded in 8 days in 2000 compared to 163 days in 2004. As compared to the whole country Prague

recorded jump growth in the freight traffic in 2004 (by 18%) due to the accession to EU, while stagnating in 1990-2000. The growth of the automobile traffic in 1991-2004 was in Prague 1,5% higher in comparison with the Czech Republic.

Recent investments in transport network in Prague include underground extension, road tunnel Mrazovka and extensive repairs after floods.

Infrastructure usage

Prague suffers considerably from heavy traffic. Uncompleted outer ring road is the main problem of Prague transport. It is necessary to complete it as soon as possible, because all freight traffic cross the inner city and the capacity of roads is insufficient. The short part of this ring road will be financed from Cohesion Fund (agreed in 12/04). Another priority is the construction of fast rail connection to the Prague airport. Railway network is not used as intensively as in other cities in Europe; nevertheless it is undergoing some improvements.

Recent trends in modal split with growing preference for individual cars and declining use of public transportation have negative influence on the city environment and quality of life (pollution, congestions). The road network is overloaded in some parts of the city.

Prague participates in the "Trendsetter" project (Setting Trends for Sustainable Urban Mobility) which concentrates on the higher use of the public transport and sustainable environment in the cities (Stockholm is the leader of 5 cities)⁷.

4.2. Access to telecommunications and information technologies

The Czech Republic is a strong investor in ICT, it devotes to ICT a large part of its GDP (9.20%), and it is actively seeking to leverage those investments. Overall the country does not show a good performance yet, but in mobile telephony: it is at the 5th level⁸ for fixed, but at the 1st for mobile telephony; at the 5th for PC availability and at the 4th for Internet access (with respectively, 30 to 39 fixed lines, more than 90 subscribers, 10 to 19 PCs, and 20 to 29 users per 100 inhabitants). But the country is still marked by a lot of heterogeneity, where

⁷ Roads and motorways in the CR 2005, www.rsd.cz.

⁸ See Annex II.

advanced and more traditional contexts still coexist, and the former have reached a position of excellence.

The region of Prague stands out for a large development and deployment of ICT (table 6, first row); indeed, it presents the highest percentage estimated of firms with a web site and Internet access, together with Brussels and the most innovative regions of Germany (Hamburg, Darmstadt and Oberbayern). The performance of households is less brilliant, in particular for the connectivity to the web. Nevertheless, it is important to remind that such values are imputed through the coefficient arising in the regression of the home penetration rate of ICT on the share of firms with a web site estimated by ESPON. This means that if ESPON values are overestimated, there will be an upward bias in the percentage of home adoption as well. Moreover, the roll-out of the broadband had not yet started in the Czech Republic in 2002 so that the share of households with broadband Internet access should be interpreted as a measure of the ICT potential of this region.

Due to the likely bias of these data, we also present national figures (table 6, second row) collected by the national expert. These data come from two national surveys updated to 2003 and suggest an inferior ranking for Prague, scoring at a high/intermediate level⁹.

Tab. 6 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
Prague*	99.0	99.0	56.9	40.7	5.8	High
Prague**	95.0	70.0	37.5	29.3	10-15	Intermediate
EU eligible Regions	86.01	56.33	49.29	35.19	5.05	

*ESPON data. **Estimation methodology and data come from the Czech Statistical Office Survey on ICT usage and e-commerce in enterprises, 2003 and Survey on ICT usage and e-commerce in households, 2003.

⁹ Our recommendation is based on the Czech Statistical Office Survey on ICT usage and e-commerce in enterprises 2003 and Survey on ICT usage and e-commerce in households 2003. The methodology and content of those surveys stem from the EU Community survey on ICT usage and e-commerce in enterprises and has been in line with the action plan *eEurope +* (its aim is to fulfill the Lisbon agenda. The data were presented also in the comparative study *eEurope 2003+* (the report of progres).

The financial support should be allocated preferably to wide and affordable broadband internet connection which would then lead to the Europe leardeship in knowledge economy.

To summarize, Prague access to TLC/ICT is fairly good, although not comparable to that showed by EU leading regions. Considering the possible policy-interventions, a particular priority should be paid to the promotion of cheap and affordable broadband internet connection, which could pose Prague among the high performers in the field of knowledge economy.

5. Environment and risk prevention

5.1 General analysis

The examination of environment and risk prevention indicators reveals a problematic profile for Prague (tables 7-9). This region is a low performer in terms of energy sustainability, especially because of its very low efficiency performance (one of the worst among European regions).

Tab. 7 Indicators of energy sustainability

	Electricity efficiency	Electricity self-sufficiency	Renewable sources of electric energy	Overall ranking
Prague	2.112	0.265	0.101	Low
EU eligible Regions	3.646	0.254	0.202	

Source EUROSTAT and New Cronos (Regio).

Tab. 8 Indicators of transportation impact

	TR1 Vehicles density	TR2 Non-fuel transportation	TR3 Traffic intensity	Overall ranking
Prague	1.195	0.044	7.653	High
EU eligible Regions	0.218	0.031	0.400	

Source EUROSTAT and New Cronos (Regio).

1) Every transport indicator - TR1, TR2 and TR3 - should be interpreted according its own dimension (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 kilometres made by journeys produced-generated by the region/Total Area). Values produced by normalization are relative and not absolute values.

The regional conditions seem rather worrying in terms of transportation impact as well. Aside from the non-fuel transportation, Prague shows values of vehicle density and traffic intensity lined up to the biggest metropolitan areas of Europe such as Berlin, London, Brussels and Vienna. One of major negative environmental aspects connected to transport stems from intensive transit transport (after the accession into the EU in last May the number of trucks on

Czech motorways and other major roads increased by 50%). The quality of regional and local public transport (especially coverage and number of connections) is still decreasing especially in peripheral regions. This concerns both road and rail networks.

The indicators related to the endowment of natural assets are particularly low. Albeit we are in the case of a strong metropolitan area, some interventions on this issue should be taken into account, at least as a secondary priority.

Tab. 9 Indicators of natural/rural assets

	Degree of protection	Wilderness degree	Anthropic degree	Urban/Rural typology	Overall ranking
Prague	4.3 ¹⁰	0.098	0.465	1.000	Low
EU eligible Regions	0.088	0.310	0.103	2.819	

Source: IRENA Database and ESPON - CORINE Database.

Flood protection measures are being applied along the river banks in inner city since the floods in summer 2002.

Tab. 10 Indicators of natural risk

	Natural risk		
	Flood hazard potential	Share of burnt areas	Overall ranking
Prague	1.000	0.000	Intermediate
EU eligible Regions	0.763	1.622	

Source: ESPON Database and EPER-EEA.

With respect to natural risks (no information is available for technological risk) Prague scores as an intermediate region, so that no strong suggestions for policy interventions in this area arise from the statistical analysis.

¹⁰ European Common Indicator, protected areas as a percentage of total territory area. Source: Prague Environment 2003

5.2 Specific Features

Electricity efficiency and renewable energy

Prague demonstrates a quite low *electricity efficiency*, relatively to the Union average (around 2 million euros GDP produced for every *gigawatt* hour consumed), while *electricity self-sufficiency* is very close to the (poor) EU average performance. Furthermore, the share of *renewable sources* in the electricity production capacity is half the EU average one.

Summing up, in terms of energy sustainability, Czech Republic ranks low.

Transport and environment

Vehicles density (1.19) and *traffic intensity* (7.65 like in Slovakia) are rather high, compared to the Union ones. *Non fuel transportation* is more developed than in other European regions, but the electricity consumed in the transport sector do not reach 5% of the total electricity consumption.

The composite indicator of transportation impact on environment shows, therefore, a high value.

Natural resources assets and management

In Prague there are 9 sites under "Natura 2000" project (out of 863 sites in the Czech Republic). Natura 2000 is a system of locations in the EU protecting the most endangered animal and plant species and natural locations (for example peatbog). In addition, in Prague there are 87 areas of special protection of the City.

However, the *wilderness degree* is very low (9.8%), while the *anthropic degree* is high (46%), belonging Prague to an Urban typology.

According to the value registered by the indicator of natural/rural assets endowment, Prague is attributed to the intermediate group.

Risk Prevention

Because of the presence of Vltava River, *floods hazards potential* is highly relevant in Prague (the value of the indicator is twice the Union average), while the size of *burnt areas* is equal to zero. The City of Prague belongs, in terms of air pollution, to long-term heavily loaded areas of the Czech Republic. Therefore, in 2000, the Prague City Hall made an assignment to develop

“Long-term concept of air pollution control on the territory of the City of Prague” as an integrated strategy for the improvement of current conditions. The concept was completed in 2002 and includes the evaluation of all groups of air pollution sources in Prague, detailed analysis of the current air quality and the analysis of the quality assessment processes, defining of objectives in the area of emissions and immissions and instruments and measures to attain the objectives, etc. The major outcome of the project is a set of 64 instruments for air pollution control. On the basis of the evaluation results priority groups of sources were identified – transport (has the highest share), small sources (solid fuel fired combustion sources – local fireplaces, sources of volatile organics compounds, and sources of secondary dust) and extremely large sources (Prague Environment Yearbook, 2003).

In 1997 and 2002 the Czech Republic experienced devastating floods. In 2002, the range of damage induced by floods exceeded 100 billions CZK, and lack of anti-floods infrastructure and missing organizational measures has been fully revealed. The anti flood prevention is one of most urgent priorities for Prague as 2002 flood caused huge economic loses and affected the very functioning of the city for a period of several months (mainly due to the fact that all 3 lines of Prague underground have been flooded in the central areas of the city).

6. Implementation of Structural Funds

6.1. The 2000-2006 Structural Funds Programming period

In the 2004-2006 period Czech Republic as a whole receives Structural Funds under Objective 1 national or multi-regional programmes, except for Prague which benefits from an Objective 2 regional programme and will be the only Regional Competitiveness and Employment region in the 2007-2013 programming period.

Prague regional programme focuses on two priority areas:

- the first one is the revitalisation of the urban environment and includes transport and social infrastructures measures and rehabilitation of rundown areas. Financial contributions to this area amount to €53.6 million, which represent 75% of total contributions.
- The second priority area encompasses interventions aimed at improving the productive environment, as partnerships between the public and the private sector, research and development, support to SMEs through technology transfers, direct aid for investment, loans, etc. and urban services for the information society. Financial contributions to this area amount to €15.9 million, which represent 22% of total contributions. Remaining resources (€1.8 million) are allocated to technical assistance.

Current programming period

The current programming period is very short and an effective assessment is rather difficult at present. First calls for applications were launched only in the second half of 2004. There is limited experience with application procedure both among potential applicants and within the newly established bodies of implementation system. In addition, there are also many operational aspects concerning the financial issues – those range from eligibility questions to the details of financial flows. The implementation is rather complicated for applicants, there are many institutions involved in the process. Moreover, not all needed supplementary documents are of sufficient quality.

There are substantial problems with co-financing of the projects. The financial support from EU comes only after the implementation of the projects; therefore, the project applicants have to secure other financial sources for actual implementation.

One major current disadvantage in the implementation procedures is that there is no link between ERDF and ESF programmes; consequently, two applications are needed for the projects that are covering both human resources and infrastructure.

Prague single programming document

In Prague Single Programming Document (SPD 2) three calls were announced in total. There are large differences in the demand for individual priorities. For instance, there has been up to now a low interest for measure "Regeneration of damaged and unused sites" within the first priority. The second call for the the first priority even has not included two measures of brownfields and transport as there were no projects ready for the application process. One of the important reasons of this situation is that the applicants can be only the City of Prague, selected city boroughs and organizations established by the City of Prague. But these subjects often do not own the land or the property on which the potential project would focus so they are not allowed to apply.

Box 2. Examples of unexploited projects

The land in the large brownfield sites in Vysocany in Prague 9 is in private ownership, which is not under current conditions allowed to apply for EU funds to help with the regeneration of these problem areas. Another example is a high interest for measure "Public infrastructure improving the quality of life in large housing estates") from the first priority "Revitalization and development of the city's environment" which largely exceeds the amount of available resources. Interestingly, most of the submitted projects do not focus on the core and most problematic areas within housing estates localities. This is again because only the city organizations are eligible for the EU funding, while most of the land and property is owned by private actors. Therefore, the projects focus on projects where financing is feasible despite there is higher need in other areas, where the financing is not eligible for non-public actors.

Finally, there was a low number of applications in the second priority "Building up the future prosperity of the selected area" that was probably caused by the limited level of subsidy (maximum 30%) and complicated preparation of the projects.

The number and specification of current priorities is adequate. Higher number of priorities would demand more funding. The quality of projects is improving in both formal aspects of project processing as well as in the content itself. The application process is complicated and demanding on time and expertise in the preparation phase. The applicants underrate the amount of time needed for completion of all required supplements to the application (such as the feasibility study, land permission, the proof of 100% financial coverage and confirmation of ownership).

Prague City Hall and organizations established by the City of Prague have not been very active at the beginning of the process due to inexperience but their activity is increasing. The key projects fulfilling expectations of the city are still under preparation. Some projects that are under preparation for long time could not apply because of the new law about public procurement, that changed conditions and the whole process has to be adapted. Finally, the co-funding by the city and its organisations must be secured within the city budget and approved by city council, which itself is quite a complicated and lengthy process.

The largest project recently prepared for funding from Cohesion Fund by the City of Prague is extension and intensification of Prague's waste water treatment plant worth over 100 mil. Euro.

The city boroughs have been very active in the application process in comparison to the Prague City Hall. Their main problems include insufficient human resources for the project preparation and coordination and the approval of co-financing from the city borough budgets. Moreover, the city boroughs do not have sufficient financial sources for instance for involving external experts that would help with the application.

6.2. Implementation of regional policies: lessons learnt

In the Czech Republic, there are several major deficiencies in the system of support programmes. The most important are an excessive fragmentation of programmes and public policies in general, insufficient focus or unclear guidance for potential applicants within the programmes, and finally institutional shortcomings and inadequacies within the process of programming¹¹. These difficulties concern practically all programmes irrespective of their purposes, regardless their Czech or EU origin. The dominating features of Czech programmes are their re-active (as opposed to pro-active) nature and supportive/subsidizing (as opposed to development).

In order to achieve substantial synergy effects, there is a challenge to reconsider existing Czech policies and support programmes in the context of implementation of comprehensive EU policy of economic and social cohesion. Closer tying up of national policies and programmes with the EU policy of ESC would make the whole system of support programmes more

¹¹ Blažek, Vozáb, (2004).

transparent, less administratively demanding for both programme administrators and project applicants and consequently more efficient and effective¹².

The most important issue limiting the absorption capacity is low readiness of the final beneficiaries and of end users to prepare and implement suitable projects and the relationships between those delivering the programmes and those generating and implementing the projects. The guidance to final beneficiaries and end users (final recipients) as provided for by the Operational Programmes is often insufficient in the Czech Republic especially due to following weaknesses:

- programming framework describing desirable interventions is often rather weak and not particularly targeted;
- implementation structures for EU programmes were designed as separate structures, parallel to national ones, and rather complicated;
- “enabling” nature of measures did not provide enough information to lower levels of implementation of what interventions are required¹³.

Since the SFs programmes brought in very new types of interventions there was very limited awareness about the demand for these interventions as well as about possible outcomes of such interventions. According to latest data available (end of March 2005), there are significant discrepancies among financial allocation to operational programmes, demand for outlined measures and amount of financial resources already committed to particular projects. In case of three out of five Czech OPs, the amount of support requested by applicants has already exceeded the available resources (these are Joint Regional Operational Programme, OP Industry and Enterprise, and OP Infrastructure). However, even within these OPs, there are measures facing insufficient demand from potential applicants. Currently, the biggest problems can be identified in case of OP Industry and Enterprise where only small fraction of money available were allocated to particular projects (despite existence of significant demand among firms and other subjects) and especially in case of OP Human Resource Development where not only the amount of money already allocated to projects is negligible but until now there is even insufficient interest among potential applicants (available sources several times exceed demand from project applicants).

¹² Blažek, (2000).

¹³ Blažek, Vozáb, (2004).

These problems illustrate that the need to shift the priorities of cohesion policy away from technical infrastructure in favor of business environment and human resources should be gradual and should proceed in line with gradual formation of not only demand side for outputs of these projects (e.g. life-long learning) but even with the development and cultivation of supply side (i.e. existence of subjects capable of delivering high quality outputs). Consequently, premature and sudden shift of priorities in favor of soft measures would be neither effective nor efficient.

7. Policy priorities assessment

7.1. Findings from the statistical analysis

In order to perform a combined analysis of the indicators of economic performance and those relative to the other thematic areas, we separate the exam of environment and risk prevention variables from that related to other issues of innovation & knowledge economy and access to ICT and transport infrastructure.

Tab. 11 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
High	Intermediate	Uncorrelated	Intermediate	Uncorrelated		Non problematic region

The brilliant economic performance is positively associated to the good level of access to TLC infrastructure as well as to the high level of connectivity, especially by firms. By contrast, we find no correlation between the degree of regional competitiveness and the innovative effort of the region. This may be partly due to the nature of the indicator on innovation potential that overweighs the activities typically carried out by manufacturing firms (R&D and patent). As above illustrated, instead, Prague stands out mainly for a high share of employment in high-tech services, which is a common feature of many capital city regions.

Tab. 12 Economic performance versus environment and risk prevention

Economic performance	Energy sustainability	Transport impact	Natural/rural assets	Natural risk
High	Low	High	Low	Intermediate

The comparison between economic performance and the environmental indicators shows the problematic implications of the recent, sustained development that has been not accompanied by a satisfactory degree of sustainability (in terms of energy and transportation impact). In short, concerning the quality of life Prague is becoming a vulnerable area (i.e. its growth potential could be undermined by critical environmental conditions) and, thus, should ascribe a high priority to this kind of measures.

7.2. Findings from the field analysis

As far as the outlook for the new programming period is concerned it is necessary to stress that no decision has been taken concerning the number and focus of future programming documents. Nevertheless, in March the Czech government adopted a resolution specifying the five key priorities for the next programming period. These are:

- 1) Enterprise, 2) Human resources and Universities, 3) Innovations and knowledge economy, 4) Accessibility and infrastructure and 5) Reduction of regional disparities.

Concerning the number of programming documents is quite likely that instead of one Joint Regional Operational Programme, seven or eight regional operational programmes will be prepared. In the same time there is considerable pressure from the Czech self-governing regions (NUTS III) to reconsider existing delineation of NUTS II regions. More real picture might be obtained only after the July meeting of Managing and Coordinating committee CSF. In case of Prague, it seems likely that two OPs will be prepared (one for ESF and one for ERDF).

The following recommendations could be formulated:

Innovation and the Knowledge Economy

1. Given the specific role of Prague as the dominating economic centre of the Czech Republic, that influence the competitiveness and economic development of the whole country, innovation and knowledge economy is one of the most important priorities. The current economic growth in Prague is to a large extent still based on rather traditional economic sources, which are not enhancing the national competitiveness. It is therefore necessary to support the change from more traditional economy to the knowledge economy.

2. Prague has strong innovation potential but so far the role of Prague as an innovative and initiatory centre for the whole country has not been fully accomplished. The number of patents is disappointing as a consequence of limited access of SME to innovation sources such as research and development, financial support of innovation implementation, traditional focus of public research institutes on basic research without commercial ambitions. In Prague, there is not a real Science Park (just two BICs with European accreditation) and non-sufficient supply of incubation facilities. Moreover, existing incubators are focused more on provision of subsidised renting than on high quality consultation services. Also the lack of finance is among the most important barriers in the development of innovation of SME.
3. The updated version of Prague Strategic Plan, which presents the long term goals of the city, emphasizes the innovation role of the city. All the interviewed experts agreed that Prague should strongly concentrate on the knowledge economy and innovation in the next programming period.

Environment and Risk Prevention

1. The upgrading of urban environment thus enhancing the quality of life is the key priority for the city of Prague as well as its boroughs. Within this area public transportation is still the major issue especially in the context of increasing individual automobile traffic. In the context of the metropolitan growth the railway transportation shall play a more important role for inner city transportation between central and outer city parts.
2. Another important priority is the regeneration of unused and contaminated land in brown-field sites. Their presence in the city negatively impact on surrounding neighbourhoods and their further degradation strengthening existing disparities. Furthermore, without the public support to regeneration, investors prefer to locate on green-field sites outside the city of Prague thus undermining city economic growth and competitiveness, producing unsustainable sprawl like metropolitan growth and spatial mismatch in the location of jobs and residences. There are limited possibilities to use renewable energy sources within city territory, however, there are still large deficiencies and potential for the improvement in the area of energy efficiency.

Accessibility

In Prague there is missing connection to the network of TEN-T. There is a need for the completion of radials within Prague main road network and the improvement of the link between Prague and Kladno (the second largest city in the Prague Metropolitan Region, whose inhabitants are commuting for work to Prague). The share of this potentially important priority depends on the maximum financial limit for the project supported from ERDF and on the possibility to finance some of these transportation projects from Cohesion Fund.

Implementation issues

As a first step, the updated Strategic plan of Prague and recently drafted Bohemian Regional Innovation Strategy for Prague must be approved by Municipal Assembly to be ready for adoption for the next programming period of 2007-2013. These documents will set up clear priorities in the sphere of streamlining the implementation and focus of the programmes and create the basis for the new Single Programming Document for the period 2007-2013.

The main positive change in the implementation will be that the whole territory of Prague will be eligible to receive the support from ERDF (in comparison to the current programming period when only part of the city territory is eligible for the support).

The recommendation for the implementation improvements will result from the evaluation of the previous period which should be finished in Autumn. Based on the consultations with experts we can summarize what should be considered as priority changes in the next programming period:

- Re-definition of eligible applicants for some priorities (allowing inclusion of private sector bodies)
- Limit number of subjects involved in the administration / implementation process
- Provision of co-financing before obtaining the endowment
- Simplification of the application process
- Enhanced cooperation with the Central Bohemian Region

ANNEX I: Bibliography and sources of information

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