Czech Republic
Ministry of Education, Youth and Sports

Operational Programme

Research and Development for Innovations

Version as at 31 October 2006

Ministry of Education, Youth and Sports

Research and Development for Innovations

Contents

Introduction

The policy of economic and social cohesion of the European Union (hereinafter referred to as "EU") helps to reduce the differences between the economic and social development of individual regions, and support their advancement and structural changes that lead to desirable economic and social transformations. The current form of the European regional policy places a great emphasis on strengthening competitiveness and its closer interlinking with the Lisbon Strategy.

Upon accession to the EU, the Czech Republic (hereinafter referred to as "CR") has become one of the Member Countries drawing on targeted aid within the European regional policy. For the 2007 – 2013 period, all of the Czech regions except for the City of Prague are classified under the Convergence objective[1]. In accordance with the objectives of the European regional policy, one of the CR's greatest priorities is to reinforce the growth of the country's competitiveness and the focus on a knowledge economy.

The "Research and Development for Innovations" Operational Programme (hereinafter referred to as "R&DI OP") is one of the significant operational programmes contributing to the fulfilment of this objective. Together with the Enterprise and Innovation Operational Programme (hereinafter referred to as "EI OP") and the Education for Competitiveness Operational Programme (hereinafter referred to as "EC OP"), the R&DI OP represents an interlinked set of priority axes and areas of intervention that will lead to the sustainable competitiveness of the Czech economy supported by the targeted and effective support of the cohesion.

Three core starting points were taken into account during the preparation of the R&DI OP. First of all, specific policies and the orientation of the support at European level were reflected. These, in particular, include the Community Strategic Guidelines, 2007-2013, and the R&DI OP will significantly contribute to the implementation of the second Guideline, i.e. "Improving Knowledge and Innovation: The way to growth", and Article 4 of Council Regulation (EC) No. 1083/2006 of 11 July 2006 laying down general provisions for the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No. 1260/1999 (hereinafter referred to as "General Regulation").

At national level, the core starting point for compiling the R&DI OP was the 2007 - 2013 CR National Strategic Reference Framework, laying down the strategic objectives for utilizing EU funds in the CR. The R&DI OP contributes in particular to the implementation of the strategic objective "A Competitive Czech Economy", which should among other things promote an improvement in the CR's research, development and pro-innovative potential. A primary task of the R&DI OP itself is also to assist in the implementation of one of the most important activities of the 2005-2008 National Lisbon Programme – CR National Reform Programme, which is to create an environment stimulating research, development and innovations. The R&DI OP has been drawn up to promote supply on the part of research and development activities, especially the availability of universities, research institutions and other entities to be engaged in research and development (hereinafter referred to as "R&D"), and to assist in successful transfer of the knowledge and application of the knowledge in the industrial and non-industrial sectors.

---

[1] NUTS II regions, whose GDP measured in terms of parity of purchasing power per capita is lower than 75% of the EU-25 average, are classified under the Convergence objective.

Last but not least, the results of many analyses of the environment, as well as research and development results obtained in the CR were taken into account when compiling the R&DI OP, and its priority axes and specific objectives. The opinions of experts from universities, research, development and innovation institutions, companies, regions, central bodies of state administration, and of economic and social partners were all considered. Evaluation of the application of the research and development policy, including funds provided from the national budget and experience gained during the implementation of existing programmes linked with innovation activities (especially EI OP), was an integral part of the input information. For a list of strategic, legislative and analytical materials used for preparation of the R&DI OP refer to Annex 5.

With respect to the facts as above, a global objective was defined for the R&DI OP, i.e. to strengthen the CR's research, development and pro-innovative potential ensuring the growth, competitiveness and creation of jobs in the regions[2] so that the CR can become a significant location in Europe where these activities are concentrated, namely via universities, research institutions and other relevant entities.

The fulfilment of the R&DI OP global objective is reflected in specific objectives of the Operational Programme, which will be implemented through the individual priority axes. The first specific objective is to strengthen capacities, especially targeted research in regions, and to ensure their fast and efficient use at regional, national and European levels. This specific objective will be implemented via Priority axis 1 – **Development of research and development capacities.** The second specific objective is to strengthen the capacities of technically oriented research necessary for cooperation between the public sector and the private sector, and for the fast and effective transfer of research and development results. This objective will be implemented via Priority axis 2 – **Development of capacities for the cooperation of the public sector and the private sector in research and development.** While Priority axis 1 is designed to strengthen R&D capacities leading to the production of knowledge to be used for the development of the economy and regions, and involvement in international cooperation, Priority axis 2 is aimed at supporting the initial stages of R&D innovation processes. Priority axis 3 – **Strengthening of university capacities for tertiary education** is focused on strengthening the educational capacities of universities to ensure the competitiveness of the CR.

Technical assistance represents a separate priority axis (Priority axis 4) that will contribute to the improvement of the quality of measures to be taken, including R&DI OP promotion.

The principle of partnership was applied throughout the whole preparation process of the R&DI OP. For the purpose of the preparation and compilation of the R&DI OP, a broad working team was established, comprising representatives of competent bodies of state administration and local governments, as well as economic and social partners. During the preparation, the R&DI OP was subject to a detailed examination by the working team, and the team's objective comments were taken into account. The R&DI OP has also undergone an ex-ante evaluation.

Throughout the course of the preparation of the R&DI OP, consultations and meetings were held with representatives of the teams engaged in the preparation of two other thematic operational programmes (Education for Competitiveness OP and Enterprise and Innovations

---

[2] NUTS II regions.

OP) to ensure that they are interlinked in terms of logic and content, and thus providing for a desirable synergy effect of all three programmes. The Education for Competitiveness OP supports activities aimed at human resource development in the field of research and development. The Enterprise and Innovations OP covers the area of business entities, and promotes their interest in the results of research and development and innovative solutions.

R&DI OP has been prepared in compliance with Council Regulation (EC) No. 1083/2006 and Council Regulation (EC) No. 1080/2006 and is fully in compliance with Czech Republic Government Resolution No. 175/2006 of 22 February 2006.

R&DI OP has passed both internal and external amendment procedure. It was adopted by Czech Republic Government Resolution No. 821 of 28 June 2006 and was approved by Czech Republic Government Resolution No. 1302 of 15 November 2006.

1. Current Economic and Social Situation in Research and Development

1.1 Research, Development and Innovations in the Context of the EU

Upon accession to the EU, the Czech Republic has involved itself in the process of integrating the national policies of research, development and innovation and related areas (education, business, employment, etc.) expressed in the Lisbon Strategy[3]. Like other EU Member Countries, the CR believes that the key to the growth of its own competitiveness lies in research and development, innovative capabilities of companies, increasing quality of human resources, and information and communication technologies.

The significance of research and development for the successful implementation of the Lisbon Strategy is clearly declared in several important EU documents. Along with the European Commission (hereinafter referred to as "Commission") Communication "More Research for Europe: Towards 3% of GDP", a fundamental document promoting investments into research is the Communication from the Commission "Investing in Research: An action plan for Europe" (hereinafter referred to as "Action Plan for Europe"), which deals with many measures supporting R&D.

Based on the proposed R&DI OP, the Czech Republic has been fulfilling its obligations towards the EU and its recommendations:

(1) By having approved the Lisbon Strategy (Spring session of the European Council in 2000), and the objectives as accepted in Barcelona (Spring session of the European Council in 2002), the updating of the Lisbon Strategy in 2005, adoption of the EU budget perspectives for the 2007-2013 period at the European Council session in December 2005 in Brussels, and many other documents by EU bodies as adopted in 2004 and 2005, where there were substantial changes in terms of the concept of a knowledge economy and the strengthening of its tasks, innovations, and the role of R&D.

(2) The roles of research, development and innovations to ensure growth and employment in the EU have strongly increased. A considerably increase in support for R&D from EU structural funds is planned.

(3) Repeatedly and beyond any doubt its has been stressed and proven that the involvement of research and development in meeting the requirements of the business sector is not sufficient to ensure the competitiveness of companies in the EU Member Countries or in the EU as a whole, or to provide sufficient quality jobs. Such involvement based on the demand by companies can only ensure some innovations (e.g. Open Innovation System). In order to solve the problem of most EU countries lagging behind the USA and Japan a considerable increase in the supply of knowledge by academic circles is required for application in higher-level innovations, i.e.:

a) by a dynamic increase in support for R&D (a known and repeatedly confirmed objective set in Barcelona in 2002; expenditure on R&D in 2010 at a level of 3% of

---

[3] Conclusions of the European Council revising the Lisbon Strategy, Brussels, 22-23 March 2005.

GDP, of which one third is to be from public sources and two thirds from private ones [companies]);

b) by developing the research and development base through the establishment of new R&D facilities and poles;

c) by increasing the quality and productivity of R&D, extending the professional knowledge of R&D workers (business essentials, protection of intellectual property rights, etc); and increasing their mobility;

d) by increasing the quality of R&D management and administration.

(4) Here are some instances of where the significance of the role of R&D for developing EU competitiveness has been referred to:

a) Conclusions of the Council session on "Competitiveness" held in Brussels, 28-29 November 2005 [points 3, 4, 5, 12a), e) and f), and 13 b) and c)];

b) Conclusions of the Council session held in Brussels on 11-12 December 2005 (e.g. point 10);

c) Document by the EU Council "Financial Outlook for 2007-2013", Brussels, 19 December 2005, 1591505, CARDREFIN 268, as discussed during the European Council session on 11-12 December 2005 (e.g. point 8 and Action 1);

d) Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee, and the Committee of the Regions "Implementing the Community Lisbon Programme: More Research and Innovation – Investing for Growth and Employment: A Common Approach"; COM (2005) 488, 12 October 2005 (Part 1.2, Chapter 2, Part 2.1, Part 2.2);

e) Communication from the Commission for the 2006 Spring session of the European Council "Time to Move Up a Gear: The new partnership for growth and jobs"; COM (2006) 30, 25 January 2006 (e.g. Part 3.1 and Action 1).

1.2 Current Situation in Research, Development and Innovation in the CR

1.2.1. Concept of research, development and innovation in the CR

The strengthening of the Czech economy's competitiveness by developing a knowledge economy with innovation activities is conceptually based on six basic and interconnected documents:

- The Economic Growth Strategy ("EGS") under Government Resolution No. 1500 of 16 October 2005,
- The National Innovation Policy ("NIP") under Government Resolution No. 851 of 7 July 2005,
- The National Research and Development Policy ("NRDP") under Government Resolution No. 5 of 7 January 2004,

- The National Lisbon Programme – Czech Republic National Reform Programme ("NRP") under Government Resolution No. 1200 of 14 September 2005
- CR National Strategic Reference Framework for 2007-2013
- Community Strategic Guidelines, 2007-2013

The EGS forms the basic strategic framework for bringing the Czech Republic closer to the economic standard of economically more developed EU Member Countries. In this document, R&DI is one of five pillars forming the cornerstone of the Czech Republic's vision of becoming a knowledge technology pole in Europe with a rising standard of living and high employment. Innovations in the EGS are connected with two principal activities – R&D, the results of which are a source of innovation, and enterprise, which implements innovations in the form of products and services.

The NRDP has been drawn up in accordance with Act No. 130/2002 on aid for research and development from public resources and amending certain related acts (the "Research and Development Aid Act"). This document formulates the Czech Republic's relationship with R&D and determines the basic thematic and systemic priorities of R&D over the medium term. The NRDP takes into consideration a number of the objectives laid down in the Action Plan for Europe, and in accordance with the priorities it proposes measures that will apply the strategy set out in the Action Plan for Europe under Czech conditions.

The NIP forms the strategic framework for the whole area of technical and non-technical innovations. The NIP and NRDP are harmonized with each other in the document Harmonization of the 2004-2008 Czech Republic National Research and Development Policy with the National Innovation Policy and Other Relevant Documents of the Czech Republic and the European Union – Government Resolution No. 178 of 22 February 2006.

The NRP defines the obligations stemming from the incorporation of Lisbon Strategy principles into Czech conditions. The priorities, objectives and measures mentioned in the above strategic documents are in line with current developments in the EU as declared in the Lisbon Strategy and other related EU documents.

The links between R&DI OP, EGS and NRP are captured by the following text:

ECONOMIC GROWTH STRATEGY

- To increase public expenditure on R&D by 20 to 25% annually until 2010 in order to achieve public expenditure on R&DI equalling 1% of GDP.
- To change the structure of channelling public expenditure to R&D, particularly to strengthen purpose-specific financing at the expense of institutional financing. To channel the increase in public expenditure to industrial research programmes as a priority.
- To apply long-term basic research directions (hereinafter referred to as "LBRDD") as approved by the Government as a priority when preparing new programmes and activities.
- To effectively support as yet unprotected R&D results by an intellectual property protection programme. To increase the knowledge level of graduates from natural science and technical study programmes at universities concerning intellectual property protection and its economic utilization.
- To publish programmes supporting the mobility of workers between the academic and private spheres.
- To publish a programme supporting the transfer of technologies and knowledge acquired within the scope of public support for R&D to a broad circle of users.

- To motivate interest in completing natural science and study programmes at universities, particularly by improving the material and technical conditions of the education, as well as the material conditions for the study of such branches (scholarships, etc).
- To publish educational programmes oriented towards research and development workers and R&D managers. The aim is to increase the level of their knowledge and competencies for utilising and expanding R&D results.

NATIONAL LISBON PROGRAMME FOR 2005–2008 (Czech Republic National Reform Programme)

- To increase annual public expenditure on R&D.
- To change the structure of channelling public expenditure on R&D.
- To support private investments in R&D through indirect support instruments.
- To increase the intensity of use of intellectual property protection instruments by research institutions and companies.
- To develop an innovative infrastructure.
- To improve the access of innovative companies to financial resources.

The link of the National Innovation Policy of the Czech Republic for the period of 2005-2010 (NIP 2005-2010) can be stated in terms of significant R&DI OP links with other documents at national level. This document defines four basic strategic objectives, the implementation of which should ensure the fulfilment of the NIP 2005-2010 vision:

- To strengthen R&D as a source of innovations
- To establish functional cooperation of the public and the private sectors
- To secure human resources for innovations
- To make the performance of the state administration in the area of research, development and innovations more effective.

Furthermore, the link between the presented document and the Czech Republic National Strategic Reference Framework for the period of 2007-2013 must be mentioned. The content of the presented R&DI OP document complies primarily with:

- Strategic goal/priority of the CR National Strategic Reference Framework for the period 2007-2013, i.e. A Competitive Czech Economy
    - Support of R&D capacities for innovations
        - To increase public investments in R&D each year
        - To support investments into research
        - To increase the intensity of use of intellectual property protection instruments by research institutions
        - To develop an innovative infrastructure

In addition to this, the presented R&DI OP document is used for implementing the other strategic objectives of the CR National Strategic Reference Framework for the period of 2007-2013, specifically:

- Strategic objective – Open, flexible and cohesive society
    - Cooperation of R&D institutions with other entities in supporting the growth of competitiveness
- Strategic objective – Attractive environment
    - Support for creating suitable conditions for the development of eco-industry and environmentally friendly technologies by promoting development of R&D activities in given areas
- Strategic objective – Territorially balanced development
    - Support for developing the regional capacities and total potential of R&D.

The linkage between the contents of the R&DI OP document and the Community Strategic Guidelines 2007-2013 can mainly be identified within the Guideline: Improving Knowledge and Innovation: The way to growth. The general principles in the area of research and technological development can be defined as:

- Improving the services provided in research and technological development at research institutions financed by public funds
- Supporting the development of cooperation of public research/university institutions through promoting the establishment of regional and supra-regional poles of excellence
- Supporting regional cross-border and supranational initiatives oriented towards strengthening research cooperation and building capacities in priority areas of EU research policy
- Strengthening the building of R&D capacities, including information and communication technologies, and research infrastructure

The presented R&DI OP document is aimed at developing the content of the four general principles stated above in the field of research and technological development at research institutions financed by public funds.

Last but not least, links can be shown between the R&DI OP and the Czech Republic National Research and Development Policy document for the 2004-2008 period. The following areas have been chosen as system priorities for the implementation period of the document:

- Human resources
- International cooperation in R&D
- Regional aspects of R&D
- Application of R&D results in practice
- Research evaluation

For better transparency it can be pointed out that the total concept of the research, development and innovations in the Czech Republic is based on a system of interconnected documents, which can be divided into the following levels:

SUPRANATIONAL:

- Lisbon Strategy

- Community Strategic Guidelines, 2007-2013

NATIONAL STRATEGIC:

- National Lisbon Programme – CR National Reform Programme
- CR National Strategic Reference Framework for 2007-2013

NATIONAL SPECIFIC:

- National Innovation Policy of the Czech Republic for 2005–2010
- National Research and Development Policy of the Czech Republic for 2004–2008
- Other relevant documents concerning the given issue

With respect to the selected strategy and definition of individual priority axes we can say that the suggested content of the R&DI OP complies with the objectives and priorities as set forth in the documents covering the research and development issues at both the supranational and national level. In other words, the suggested content of the R&DI OP consistently completes and further develops the current concept of research, development and innovations in the Czech Republic.

1.2.2 Competitiveness of the CR in the field of R&D and innovations

The competitiveness of the CR within the EU in the field of R&D and innovations is appropriately characterized by an evaluation system called the European Innovation Scoreboard (EIS)[4], which is focused on assessing the innovation strategy and performance of a country. The standing of the CR according to the latest publication of the EIS[5] is described by the Summary Innovation Index (SII). According to the SII, the CR has an index of 0.26 and lags significantly far behind the EU-25 average (0.42), the leader Sweden (0.72) and Switzerland (0.71), and is in 25th place out of the 33 countries assessed (see Graph 1.2.2-1).

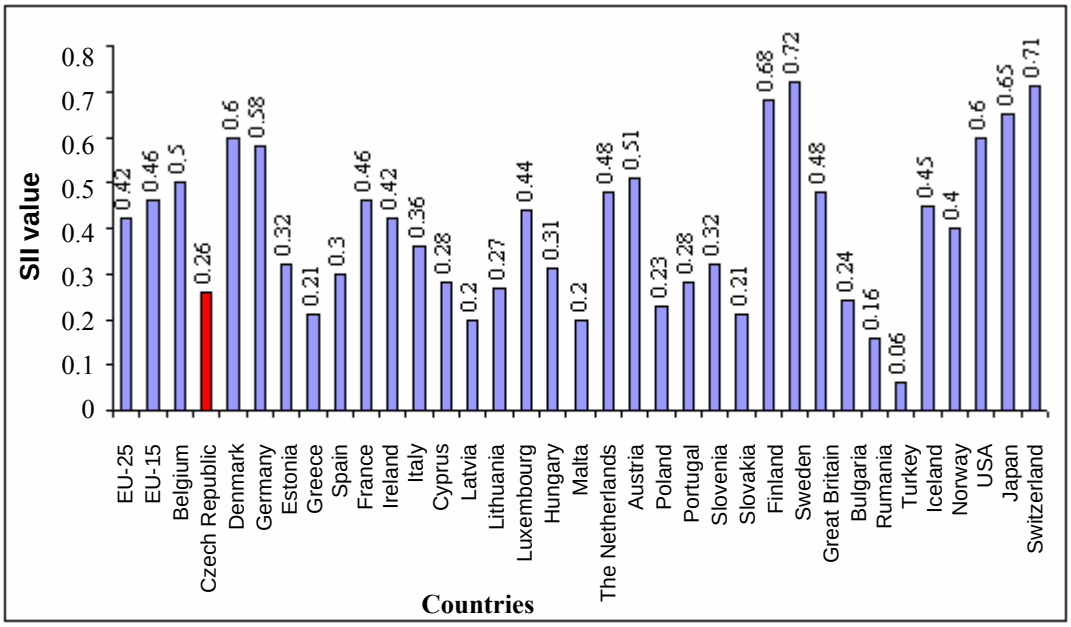
The CR lags behind mainly in the development and use of human resources, expenditure on R&D, creation of knowledge including patent activity, transfer of technology and knowledge, intensity of innovative activities at company level, and cooperation of the research sector with industry. It also has insufficient capital resources for the establishment of technologically oriented companies (including spin-off companies), and has an insufficient and low utilisation of risk capital.

---

[4] The EIS, an instrument drawn up by the European Commission designed to assess and compare the innovation schemes of individual countries in the context of the Lisbon Strategy.

[5] European Innovation Scoreboard 2005, European Trend Chart on Innovation, http://trendchart.cordis.lu.

Graph 1.2.2–1: Summary Innovation Index 2005



Data source: EIS

In 2005, the EIS evaluation system identified the following greatest weaknesses in the Czech innovation environment:

- The Czech Republic is well below the EU average in all areas of intellectual property; the comparison of the number of patent applications submitted, regardless of the type of patent, returned the worst result (only four out of 100 in the case of patent applications submitted simultaneously to the American, European and Japanese patent offices;
- The support of companies in their early stages of development, e.g. spin-offs, is woefully inadequate (four out of 100);
- Another weakness is the relatively low share of the business sector's expenditure on R&D (14 points out of 100).

Not even a longer-term view of the compared indicators bodes well for developments in the CR. The overwhelming majority of monitored indicators have shown values below those of the EU-25 average for a long time. **"A dynamic comparison for 2005 classifies the CR into the group of countries that have gradually been approaching the EU-25 performance in the long-term"**.

The unsatisfactory competitive position of the CR in the field of R&DI is a reflection of many factors. The results of expert analyses focused on this issue[6] have relatively clearly identified deficiencies of the entire system and highlighted the causes hindering the process of creating, spreading and making practical use of knowledge. Barriers have been identified in

---

[6] These, in particular, include the study 'Barriers Preventing Growth in the Competitiveness of the Czech Republic', carried out for the Ministry of Regional Development, and the document 'Analysis of the State of Research and Development in the Czech Republic, and Comparisons with Other Countries in 2005'.

human resources and in the financing of research, development and innovation activities. Many elements of an innovative infrastructure and its integration into a functioning system, which is common in developed countries, are missing. The resources available for financing the initial stage of innovative companies are absolutely insufficient. Further deficiencies can be found in the areas of legislation and the business environment. The R&D financed from public funds is not incorporated into the innovation process, the share of R&D results to be used in practice is low[7], and the results are not sufficient to improve the competitiveness of the CR[8].

For better clarity we can define the major barriers within individual stages as identified by the expert analyses stated above:

STAGE 1: Process of result creation

- An insufficient number of qualified R&D workers, especially in the field of technical and natural sciences
- Poorer quality of instrumentation.
- Undeveloped infrastructure – insufficient capacities for R&D development.
- Insufficient financial resources, i.e. both of an investment and non-investment nature.
- Low motivation and conservative thinking of R&D workers.

STAGE 2: Transfer of technologies

- Missing agencies and insufficient services of agencies for transfer of technologies.
- An insufficient number of qualified workers for transfer of technologies.
- High charges for international patent protection.
- Low intensity of cooperation between research and industry.

STAGE 3: Process of results handover by companies

- Barrier preventing the establishment of innovative companies (e.g. spin-off) at R&D institutions – bad access to financing
- Insufficient quality business incubators
- Insufficient awareness of achieved results in the field of R&D

Although the total competitiveness of the Czech Republic in the field of R&D is relatively low, it can be deemed as positive that we can identify facilities or individual teams of experts in the CR showing such results within their activities that are fully competitive even in terms of international comparisons.

1.2.3 Expenditure on research and development

The current R&D situation in the CR, within the context of fulfilment of the Lisbon Strategy objectives, is appropriately characterized by the following expenditure indicators:

---

[7] For example, the Evaluation of Research and Development indicates that out of the 162,205 recognized results from 2000-2004, there were only 299 patents and 1,051 technologies. For more details on R&D results see Chapter 1.2.7.

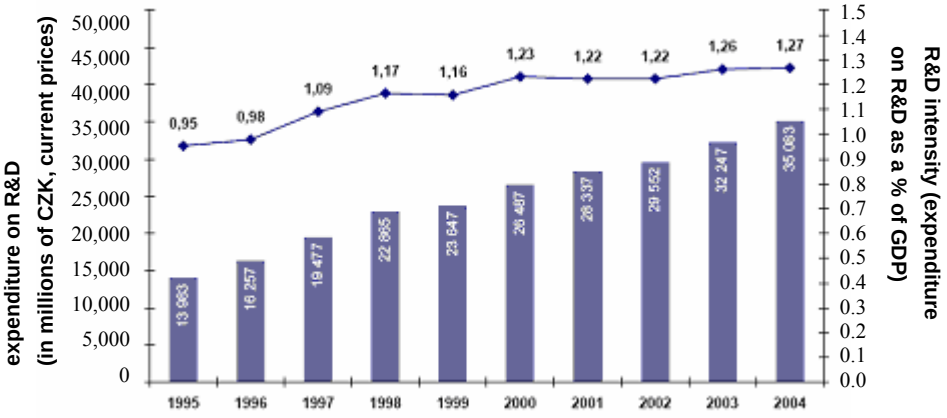
[8] Barriers Preventing Growth in the Competitiveness of the Czech Republic.

a) Total expenditure on R&D (GERD)[9];
b) Total expenditure on R&D as broken down into individual sources of financing: public, private and foreign;
c) Expenditure on R&D according to use in individual sectors.

Total expenditure on research and development

At present, total expenditure on R&D in the CR amounts to approximately 1.3% of GDP. In order to maintain their own competitiveness, the developed countries support expenditure on R&D at a level of 2-3% of GDP per year. The characteristics of development are represented in Graph 1.2.3-1, which shows the total expenditure on R&D in the CR and its share of GDP. The value of 1.27% of GDP in 2004 is low when compared to the EU-15 average (1.95%)[10].

Graph 1.2.3-1: Total expenditure on R&D (GERD) in the CR and its share of GDP in 1995-2004



Data source: Czech Statistical Office

Expenditure on R&D by source

In terms of the distribution of sources, the private sector is the most important source of financing supporting R&D activities in the CR (see Table 1.2.3-1). The public sector is the second most significant financial contributor. Foreign and other sources account for a low share in R&D funding.

---

9 The principal internationally monitored indicator in the field of R&D is Gross Domestic Expenditure on R&D (GERD).

10 Source: Eurostat.

Table 1.2.3–1: Expenditure on R&D in the Czech Republic by sector (source) of financing in 2003-2004

Source of financing	2002		2003		2004	
	CZK milions	%	CZK milions	%	CZK milions	%
Private	15,876	54.5	16,590	52.6	18,530	53.7
Public	12,433	42.7	13,488	42.7	14,695	42.6
Foreign	802	2.8	1,473	4.7	1,297	3.8
Other	442	1.5	696	2.2	561	1.6
Total	**29,111**	**100**	**31,551**	**100**	**34,522**	**100**

Data source: Czech Statistical Office

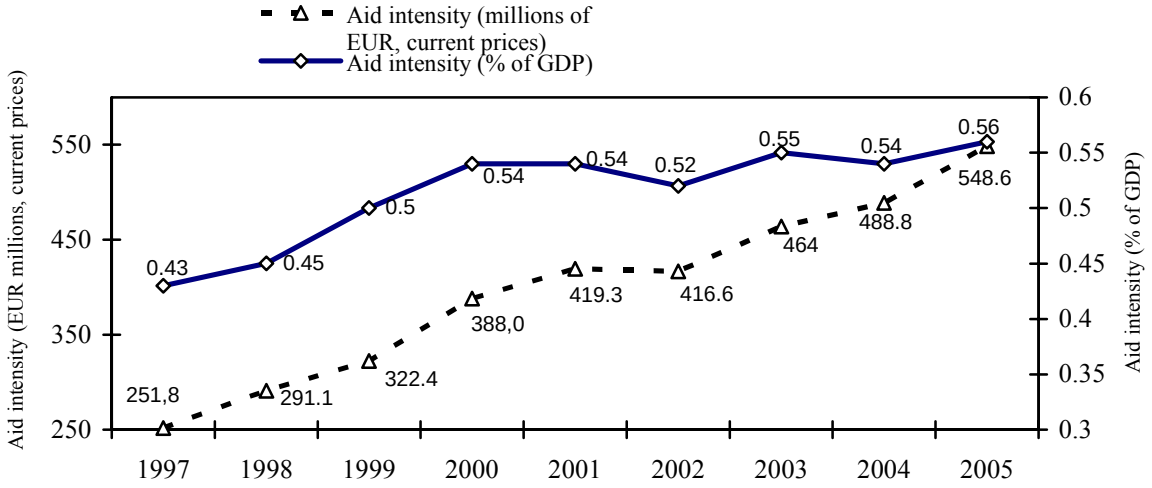
The share of expenditure on R&D by private sources in the Czech Republic, amounting to 53.7% in 2004, comes close to the values reported for the EU-15 (55%). Even so, from the perspective of the Lisbon Strategy, this value is still not optimal; the aim for the future remains to attain a situation where private resources will account for two thirds of R&D financing.

The share of public resources in gross expenditure on R&D is approximately 43%. This value is higher than for the EU-15 (around 34%) and is not in line with the optimal one-third of gross expenditure implied by the Lisbon Strategy. This difference between the Czech Republic and the EU-15 is caused primarily by the low levels of foreign and other resources in the Czech Republic.

A positive trend is the gradual increase in public funds figuring in R&D financing (see Graph 1.2.3-2). A negative aspect is that the majority of growth has been channelled into institutional expenditure, which does not support cooperation between institutions and therefore does not support technology transfer either.

To increase R&D performance in the forthcoming years it will be important to achieve a gradual year-on-year rise in public expenditure so that by 2010 public expenditure on R&D is equivalent to 1% of GDP and there is a strengthening of targeted aid as opposed to institutional support.

Graph 1.2.3–2: Total R&D aid from public funds (millions of EUR and % of GDP) [11]



Data source: **Czech Republic** National Budget, 1997-2005

Foreign resources used for the financing of R&D make up a small share of gross expenditure on R&D. Compared to the EU-15 average (8.6%)[12] this share is very low.

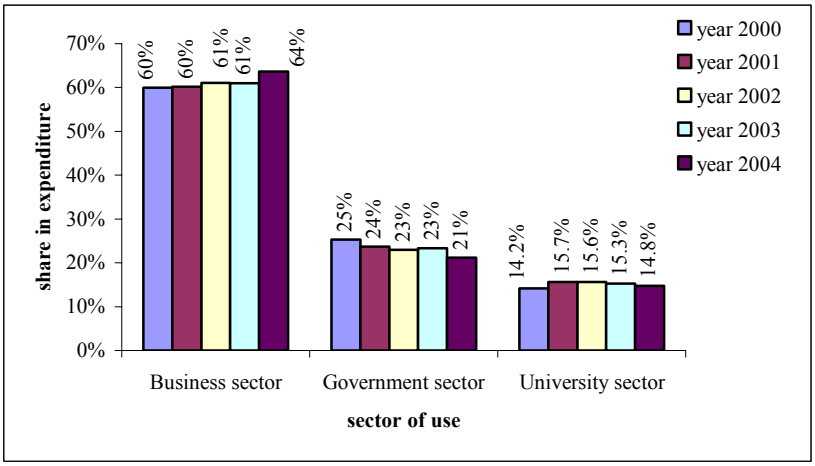
Expenditure on R&D according to use in sectors

The breakdown by use of expenditure offers a different view of the evaluation of expenditure on R&D.

[11] The figures on GDP and R&D expenditure from the national budget are taken from documentation produced by the Ministry of Finance. Information on R&D expenditure differs from the Czech Statistical Office data used above.

[12] Share of foreign R&D financing like the EU-15 from 2002.

Graph 1.2.3–3: Gross expenditure on R&D by sector of use[13]



Data source: Czech Statistical Office

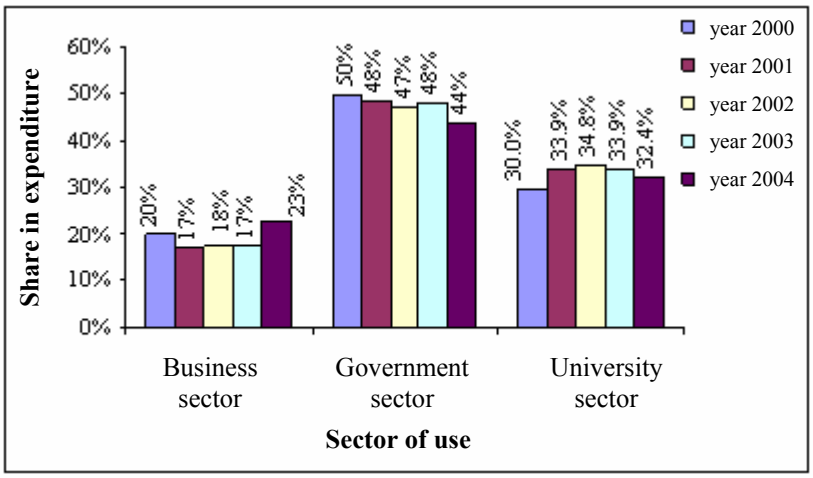
It is clear from Graph 1.2.3-3 that most expenditure is channelled into the business sector, which is in line with trends in other developed countries (the EU-15 average is approximately 64%). These funds mainly come from business sources (see Graph 1.2.3-4). In the Czech Republic, the share of R&D funds in the business sector is rising slightly, from 60% in 2000 to 64% in 2004.

In the Czech Republic, the Czech Republic Academy of Sciences institution and departmental research institutions are part of the government sector. The Czech Republic is a country where the government sector has a relatively high share of expenditure on R&D (the EU-15 average in 2003 was 12.8%); it is mainly financed from public funds (see Graph 1.2.3-4). Nevertheless there is an evident downward trend here – from 25% in 2000 to 21% in 2004. The same trend is shown by the EU-15 average.

Universities are significant sectors implementing R&D throughout the world. Compared to the EU-15 average (the EU-15 average was almost 22% in 2002), the share of total expenditure on R&D at universities in the Czech Republic is lower.

[13] The graph does not include the use of expenditure on R&D in the private non-profit sector because the values are negligible.

Graph 1.2.3–4: Public expenditure on R&D by sector of use



Data source: Czech Statistical Office

The proportion between the government sector and the university sector in terms of public expenditure on R&D is the same as it is with regard to gross expenditure (Graph 1.2.3-4).

Summary

We can draw the following conclusions from the facts discussed above about expenditure on R&D in the Czech Republic:

- Compared to developed countries, long-term expenditure on R&D in the Czech Republic has been low;
- There is a positive trend of rising overall expenditure on R&D from public resources;
- The share of total expenditure on R&D at universities is low compared to the EU-15.

In addition to maintaining the current positive trends (e.g. the total share of expenditure on R&D has been increasing as a percentage of GDP for a long time; 0.95% in 1995, 1.27% in 2004), the following are the main things that should be done in future:

1. Increase the share of private sector expenditure on R&D. With respect to the orientation of the R&DI OP this can primarily be achieved by taking the following steps:
   - Strengthening the capacities and total potential of the R&D institutions in the Czech Republic
   - Creating suitable conditions to establish mutual cooperation of the R&D institutions with the business sector, and especially:
     - Improving the transfer of information about achieved results in the field of R&D
     - Ensuring adequate forms of support for the transfer of technologies

2. Increase the share of foreign resources in the total expenditure on R&D. With respect to the orientation of the R&DI OP this increase can primarily be achieved by taking the following steps:
   - Building an infrastructure to ensure the conditions for developing the cooperation of domestic and foreign R&D institutions and entities.

1.2.4 Regional distribution of research and development

R&D facilities exist practically throughout the whole country. However, the distribution is not uniform. Based on R&D expenditure (see Table 1.2.4-1), we can state that the research and development base is primarily concentrated in three regions of the CR. Two of them (Central Bohemia and South Moravia) are among the regions with approved support; the City of Prague is the third one. By contrast, the smallest research and development base can currently be found in the Karlovarsko and Vysocina regions.

Table 1.2.4–1: Expenditure on R&D broken down into gross and public[14] expenditure in individual regions in 2002-2004

Region (NUTS 3 region) / type of expenditure	2002		2003		2004	
	total	public	total	public	total	public
Prague	34.5%	58.3%	36.8%	60.9%	37.9%	58%
Central Bohemia	25.8%	6%	21.6%	6.5%	20.6%	8.3%
South Bohemia	2.9%	4%	3.2%	4.1%	3.3%	4.6%
Pilsen region	2.8%	3.2%	2.2%	1.4%	2.4%	1.2%
Karlovarsko region	0.3%	0.1%	0.3%	0.1%	0.3%	0.2%
Ustecko region	1.5%	0.4%	1.9%	0.4%	1.5%	0.4%
Liberecko region	2.6%	0.8%	2.5%	1.3%	2.5%	0.9%
Kralovehradecko region	2.2%	1.8%	2.4%	1.5%	3.4%	3.9%
Pardubicko region	3.4%	0.8%	3.9%	0.9%	3.9%	0.8%
Vysocina region	1.4%	0%	1.3%	0%	1.5%	0.1%
South Moravia	10.6%	16.8%	10.8%	16.2%	11.3%	15.6%
Olomouc region	3%	2.1%	2.8%	1.8%	3%	2%
Zlin region	4.2%	2.7%	2.8%	1.3%	2.2%	0.5%
Moravia-Silesia region	4.8%	2.9%	7.5%	3.4%	6.3%	3.6%

Data source: Czech Statistical Office

The region of Prague and its surroundings play a dominant role in the field of R&D. One of the reasons for this fact is that Prague has a high concentration of educational institutions at university level and research facilities.

Another region with developed R&D is South Moravia (especially Brno where universities and research institutions are concentrated like in Prague). Regions with R&D that is developed but to a lesser extent are Central Bohemia, which has several strong growth-promoting and industrial centres, and whole districts, e.g. Mlada Boleslav, Prague-East, and Prague-West.

---

[14] Public expenditure on R&D includes government expenditure and expenditure by the sector of post-secondary vocational training and universities.

In contrast, the low R&D concentration in the Karlovarsko and Vysocina regions has primarily resulted from the absence of public universities and from a small number of research institutions and larger industrial companies in these regions.

Summary

The information above outlines the different R&D concentrations in individual regions with approved support. In this regard, the regions can be divided into three groups:

- Regions with a high R&D concentration in terms of the CR – Central Bohemia and South Moravia;
- Regions with a low R&D concentration in terms of the CR – Karlovarsko and Vysocina;
- Regions with a medium R&D concentration in terms of the CR; these are the remaining regions of the CR not shown above.

In general, the high concentration of R&D activities within a limited group of regions of the Czech Republic and in contrast their insufficient, nearly non-existent distribution in other regions represents a significant limiting factor for the long-term successful total economic and social development of the Czech Republic.

If the outlined disproportion continues to exist or even increases, then there can be worries not only for the economic and social development of the regions with insufficiently developed activities in the field of R&D but also for the effectiveness of other support to be channelled to such regions from EU structural funds and other sources.

Therefore, one of the objectives when implementing the R&DI OP should be:

- Strengthening the regional R&D capacities including their ability of cooperation with business sector by using the financial means intended for the 2007-2013 planning period**.**

1.2.5. Human resources in research and development

One of the most serious obstacles hindering the development of R&D and a subsequent increase in the intensity of innovation processes in the Czech Republic is currently the lack of well-prepared, motivated people with initiative.

The total number of employees in R&D[15] in the Czech Republic in 2000-2004 is illustrated by the following Table 1.2.5-1.

[15] The number of R&D employees is calculated in most international comparisons in accordance with the methodology laid down in the Frascati Manual, as the full-time equivalent (FTE). The definition of R&D employee includes research workers who are directly responsible for R&D, as well as ancillary, technical, administrative and other employees working at R&D centres. R&D employees also include employees who are responsible for direct services related to research and development activities, such as R&D managers, administrative officials, and secretaries.

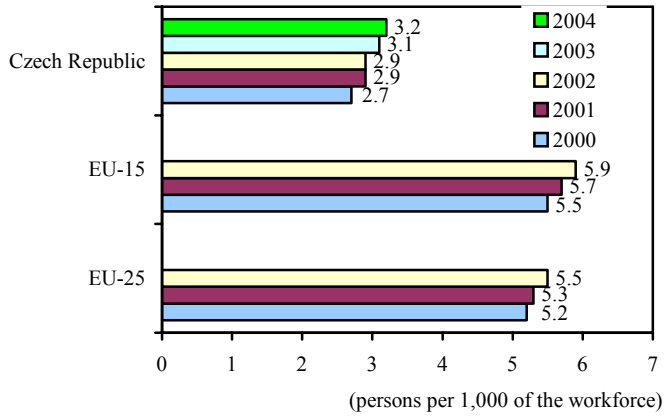
Table 1.2.5–1: Number of R&D employees (FTE) in 2000-2004

R&D employees	2000	2001	2002	2003	2004
Researchers	13,852	14,987	14,974	15,809	16,300
Technical workers	7,319	8,109	8,090	9,001	9,446
Other	3,027	3,011	2,968	3,147	3,020
Total number of R&D employees	**24,198**	**26,107**	**26,032**	**27,957**	**28,765**

Data source: Czech Statistical Office

The most important group of R&D employees is made up of research workers who are involved in the concept or creation of new knowledge, products, processes, methods and systems, and who manage these projects. The relative number of research workers per 1,000 members of the workforce in the Czech Republic is half the EU-15 average (see the Graph 1.2.5-1), and the Czech Republic even lags well behind the EU-25 average and the new EU Member Countries - Graph 1.2.5–1: Number of R&D employees (FTE) (persons/1,000 of the workforce).

Graph 1.2.5-1: Number of R&D employees (FTE) (in persons per 1,000 of workforce)



Data source: Analysis of the state of research and development in the Czech Republic and comparisons with other countries in 2005 (primary source); OECD, Main Science and Technology Indicators, May 2005, and *Czech Statistical Office* 2005 (secondary source)

Besides the lower level of expenditure on R&D, the unfavourable situation is also compounded by the much lower share of the population aged 25-64 holding a university degree, and by the low absolute numbers of graduates of natural-science and technical study programmes (see Table 1.2.5-2). In these indicators, the Czech Republic lags far behind the EU-25 average. The share of the population holding a university degree is 60% of the EU-25 average; the share of graduates of natural-science and technical study programmes is approximately 55% of the EU-25 average. The main cause lies in the limited capacities of universities with the respective orientations.

Table 1.2.5–2: Number of graduates of natural-science and technical study programmes at universities as a percentage of the total number of inhabitants in the 20-29 age category (%)

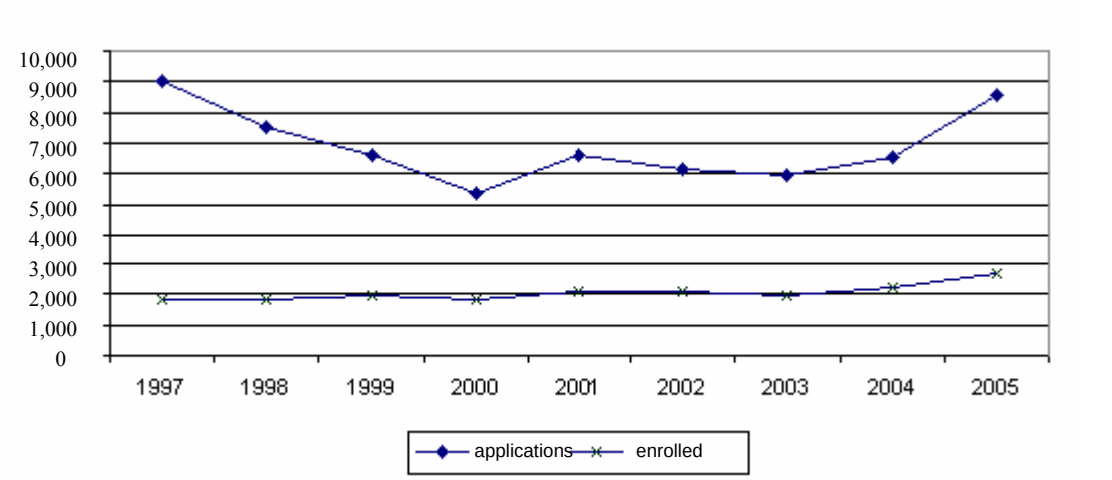
	EU 15	EU 25	FI	DK	FR	DE	NL	AT	GR	UK	CZ	HU	SK	SI	US	JP
Graduates of natural-science and technical subjects	12.4	11.3	17.2	12.2	20.2	8.1	6.6	5.3	3.7	19.5	5.7	4.8	7.8	9.5	10.2	13

Data source: Analysis of the state of research and development in the Czech Republic and comparisons with other countries in 2005 (primary source)

In practice, the limited capacity and equipment of laboratories at the technical and natural-science universities are some of the reasons for disproportions between the interest in such schools (expressed by the number of applications submitted) and the number of students who start studying (the number of enrolled students). The situation is illustrated by the three examples shown below:

- **Liberec Technical University (TUL)**

Number of applications submitted and students enrolled at TUL in 1997 – 2005

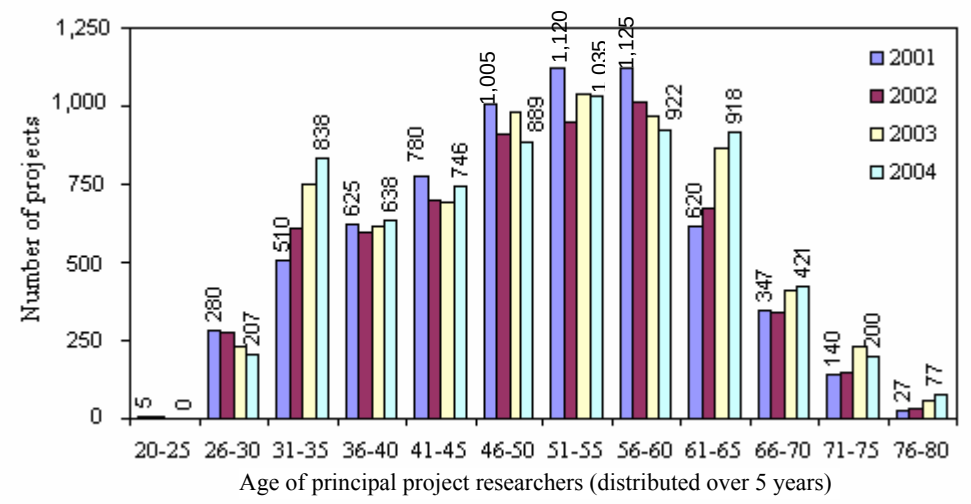


- **Brno University of Technology (VUT)**
  - Number of applications submitted in 2005 (technical subjects and sciences): 12,664
  - Number of students enrolled in 2005 (technical subjects and sciences): 6,530

- **Czech Technical University in Prague (ČVUT)**
  - Number of applications submitted in 2005 (technical subjects and sciences): 12,859
  - Number of students enrolled in 2005 (technical subjects and sciences): 6,240

A very serious problem is the high average age of research workers, with a significant peak in the 50-60 category[16] (see Graph 1.2.5-2).

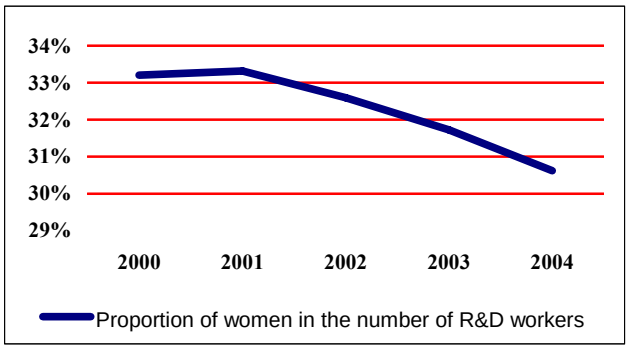
Graph 1.2.5–2: Number of research projects by age of principal researchers in 2001-2004



Data source: Analysis of the state of research and development in the Czech Republic and comparisons with other countries in 2005 (primary source); R&D Information System, subsystem: Central Register of Research Projects

The current number of human resources in R&D is characterized by a relatively low proportion of women working in R&D (see Graph 1.2.5-3).

Graph 1.2.5-3: Number of women working in R&D as a proportion of the total number of R&D employees in 2000-2004



Data source: Czech Statistical Office

A positive factor of the current state of human resources in R&D is the existence of quality scientists and research teams in certain scientific fields who are capable of standing their ground in the face of international competition (e.g. in medicine, biochemistry and molecular biology[17]). Based on Resolutions No. 661 (18 June 2005) and No. 1192 (18 October 2006), the Government approved eight long-term basic directions for research and development

[16] Analysis of the state of research and development in the Czech Republic and comparisons with other countries in 2005.

[17] Analysis of the state of research and development in the Czech Republic and comparisons with other countries in 2005.

in the CR (LBRDD): 1. Sustainable development, 2. Molecular biology, 3. Energy sources, 4. Material research, 5. Competitive engineering, 6. Information society, 7. Security research and 8. Social science research.

Summary

The following basic conclusions follow from the above-mentioned information concerning human resources in the field of R&D:

- Low number of qualified R&D workers in comparison with the EU-15. As two main causes of this situation we can identify:
  - Overall under-financing of R&D in the Czech Republic, manifested in:
    - A difficult situation in the effort to keep up with the current level of R&D in the respective field at international level, and the subsequent decrease in interest of workers in being engaged in the field of R&D for the long-term, caused by insufficient facilities and spatial capacities.
    - A low interest by young people in getting engaged in the field of R&D due to financial reasons
  - Insufficient development of regional R&D capacities, which subsequently results in a reduction in the total R&D capacities in the Czech Republic.
- Unsatisfactory age structure of research workers. A change in this situation will occur only when:
  - There is a considerable increase in the motivation of young research workers for further engagement in the field of R&D, and the long-term development of related activities is ensured.
- Unsatisfactory structure of university graduates, in particular an insufficient number of graduates from natural-science and technical universities. The current situation can only be resolved only by:
  - Strengthening the existing capacities and developing new ones (of a regional nature) in the area of technical and natural-science branches.
- Low number of women engaged in R&D with a downward trend. This problem does not only concern R&D issues but also the employment of women in general. One of the possibilities for a solution is to find suitable motivation programmes and instruments similarly as in the case of young research and development workers.

1.2.6 Cooperation between the public sector and the private sector in R&D for innovations

One of the causes of the current situation, characterized by limited cooperation between the public and the private R&D sectors, is the low availability of programmes to promote such cooperation. The other causes have already been outlined and assessed in the previous text. They include a limited R&D capacity (including regional differentiations) and the related limited availability of results for cooperation, a limited and insufficient R&D awareness, limited spatial capacities to establish mutual cooperation, deficiencies in the system ensuring the transfer of technologies and innovations, and a relatively lower share of private sector expenditure in total R&D expenditure as a proportion of GDP in the CR.

As for the creation and implementation of the programmes of cooperation, above all there are programmes missing that should be focused on supporting the transfer of scientific knowledge directed at applications, e.g. programmes supporting the establishment of technologically oriented companies (including spin-off companies) at educational and research institutions, etc. Limiting factors are also the insufficient infrastructure to support such cooperation and the insufficient appropriate material background.

However, on the other hand the increasing number of direct national and foreign investments in the high-tech branches and in the associated research and development can be deemed as a positive feature.

The standard of high-tech innovations in the Czech Republic is currently unsatisfactory. Besides the lack of funding, this can be attributed to inadequate cooperation between experts. Actual poles of excellence utilizing academic and company capacities for the development of high-tech branches are missing in the CR. One of the causes is also the insufficient awareness of Czech companies with regard to the quality of scientific facilities, their achievements and availability.

A significant barrier preventing further development is the lagging behind in the instrumentation at R&D centres. Public and most private institutions have been facing problems related with investments in expensive instruments[18].

So far, insufficient attention has been paid to the fostering of conditions for the horizontal mobility of research workers, university teachers, students and specialists from the business community between the research and university sector on the one hand and the business sector on the other.[19]

Summary

Cooperation between the public sector and the private sector in the field of R&D in the CR has primarily shown problems related to the insufficient transfer of R&D knowledge. The current situation can be improved by:

- Creating new programmes of cooperation between R&D institutions and companies.
- Creating conditions for commercial application of the R&D results, including the establishment of technologically oriented companies (including spin-offs) at universities and research institutions.
- Establishing and developing the missing poles of excellence.
- Improving material equipment of the research and development facilities.
- Creating programmes and instruments to develop horizontal mobility of the R&D workers between the public sector and the private sector.
- Increasing awareness about R&D facilities in terms of their achievements and availability.

---

[18] Barriers Preventing Growth in Competitiveness in the CR.

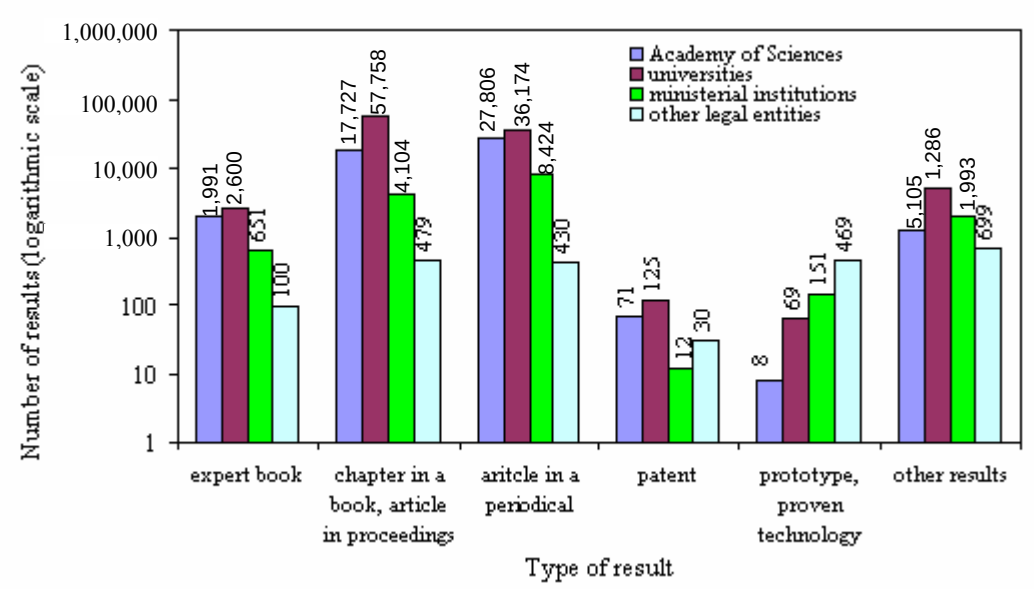
[19] National Innovation Policy of the Czech Republic for 2005-2010.

1.2.7 Results of public research and development

Public R&D in the Czech Republic (or R&D supported from public funds) currently provides blanket coverage of almost the whole sphere of scientific fields. However, the Czech Republic lags well behind developed EU countries in terms of R&D output such as scientific publications, articles, citations in expert periodicals, and patents. The least favourable situation is that concerning the number of patents among Czech authors. Of the total number of recognized results of projects and plans completed in 2000-2004, patents accounted for just 0.01% (see Table 1.2.7.-1).

The basic results of research work generated by public R&D in the 2000-2003 period are illustrated by the bar Graph 1.2.7-1.

Graph 1.2.7–1: Number of registered results in 2000-2003, broken down by beneficiary category and type of result



Data source: Analysis of the state of research and development in the Czech Republic and comparisons with other countries in 2005 (primary source); R&D Information System, subsystem: Register of Information on R&D Results

Table 1.2.7-1: Number of projects and research plans with a year of completion between 2000-2004 and their results

Number of projects and plans	Total recognized results	Peer-reviewed periodicals	Other periodicals	Books	Chapters in books	Articles in proceedings	Patents etc.	Techno-logy etc.	Unreco-gnized results
8,054	162,205	24,383	42,599	5,872	11,536	76,464	299	1,051	10,680

Data source: R&D Information System, data source: CEP, Central Register of Research Projects, Register of Information on R&D Results 2005

Patents [20]

The number of patents is a significant indicator in the evaluation of R&D results. This indicator reflects the ability to transform research and development activities into expedient results suitable for further commercialization. The very low number of patent applications submitted by all the different types of Czech authors is currently the greatest weakness in the Czech innovation environment. The worst position is with top-class patents, so-called "triads" (patents submitted concurrently to the American, European and Japanese patent offices), where the Czech Republic was awarded just four points out of a hundred in the EIS 2005 evaluation.

The main causes of the undesirable patent situation in the Czech Republic are as follows:

- The absence of research and development results that could be patented and used further.
- Insufficient motivation at the public research and development facilities to have the R&D results patented.
- Inadequate managerial knowledge or ability to manage intellectual property efficiently among the workers of academic and research institutions, as well as among staff at firms.

Other major weaknesses of the Czech innovation environment are the standard and activity in the field of non-technical innovation; in these indicators the Czech Republic places between 11th and 18th out of the 25 EU Member Countries[21].

Summary

The stated basic information on the results of public research and development in the Czech Republic has, in principle, only confirmed the fact that the international competitiveness of the Czech Republic in the given area is low.

The current situation can improve only when the main barriers and other obstacles that prevent the development of R&D activities and mutual cooperation between R&D institutions and the private sector, as outlined earlier, are removed.

Last but not least, the whole system of R&D results evaluation will have to be reviewed, especially in favour of such results that have more of a practical applicability.

---

[20] The term 'patents' means results protected in accordance with separate regulations, e.g.: Act No 527/1990 Coll. on inventions and improvement proposals, as amended.

Act No 529/1991 Coll. on the protection of topographies of semiconductor products, as amended by Act No 116/2000 Coll.

Act No 478/1992 Coll. on utility designs, as amended by Act No 116/2000 Coll.

Act No 206/2000 Coll. on the protection of biotechnological inventions and amending Act No 132/1989 Coll. on the protection of rights to new varieties of plants and breeds of animals, as amended by Act No 93/1996 Coll.

Act No 207/2000 Coll. on the protection of designs and amending Act No 527/1990 Coll. on inventions, designs and improvement proposals, as amended.

Act No 408/2000 Coll. on the protection of rights to plant varieties and amending Act No 92/1996 Coll. on varieties, seeds and seedlings of cultivated plants, as amended (Act on the Protection of Rights to Varieties)

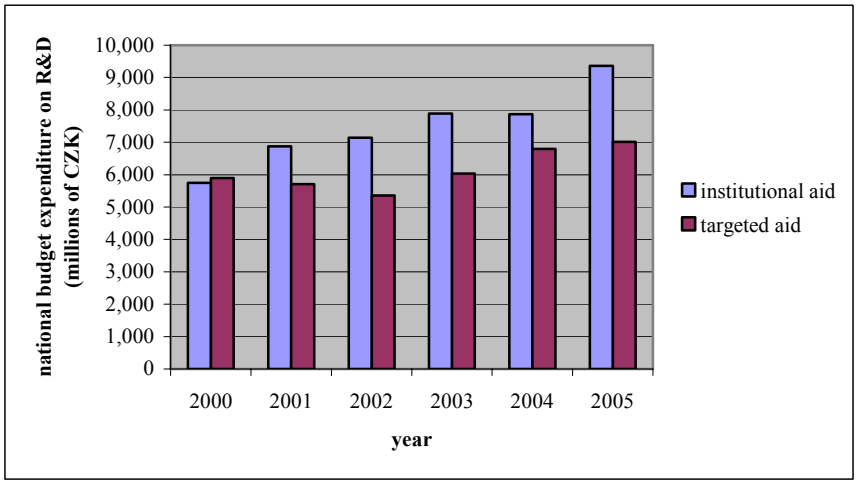
[21] European Innovations Scoreboard 2005.

1.3 Aid Programmes for Research and Development in the CR

1.3.1 Aid Programmes from the CR National Budget

Under the Research and Development Aid Act, two basic types of direct aid can be obtained – institutional and targeted. An overview of national budget expenditure on R&D, broken down into institutional and targeted aid, is provided in Graph 1.3.1-1.

Graph 1.3.1–1: National budget expenditure on R&D, broken down into institutional and targeted aid, in 2000-2005.



Source: Czech Republic national budget

Institutional aid is intended for basic and applied research (except industrial research) that ensures the scientific development of a certain field[22]. Scientific institutions and private companies that meet the criteria laid down by law may apply for institutional aid.

Targeted financing focuses on support for a solution to an individual project. Targeted aid can be used for three types of R&D projects:

- Programme project – the beneficiary states how and under what conditions the beneficiary will contribute to the implementation of programme objectives,
- Grant project – the beneficiary sets the objectives and implementation methods in basic research,
- Public R&D contract – the beneficiary carries out R&D for the requirements of the aid provider, who is the sole user of the results.

National research programmes and other R&D-related activities

The thematic and systemic priorities declared in the NRDP are realized via National Research Programmes in the form of thematic and cross-sectional programmes. The

[22] Besides the Research and Development Aid Act, institutional aid also regulated by Implementing Governmental Order No 462/2002 Coll. on institutional aid for research and development from public resources and on an evaluation of research plans.

coordinator and main provider of National Research Programmes is the Ministry of Education, Youth and Sports.

National Research Programme I covers the 2004-2009 period. It comprises five thematic programmes and three cross-sectional programmes. Approximately EUR 103.4 million is spent on National Research Programme I every year.

National Research Programme II covers the 2006-2011 period. National Research Programme II contains four thematic programmes and three cross-sectional programmes. Throughout the duration of National Research Programme II, approximately EUR 313.8 million will be released for projects implemented in accordance with the programme.

At present, National Research Programme III (controlled by the Ministry of Education, Youth and Sports) is under preparation. It should, among other things, complete the R&DI OP starting from 2009.

Assisted by the CzechInvest agency, 65 technological poles of both foreign and Czech companies were established in the Czech Republic from 2000 to August 2006. The Czech companies (i.e. companies without foreign capital) have built 22 technological poles, while 35 technological poles have been built by Czech subsidiaries of foreign companies and 8 technological poles have been established by foreign companies that had no production activities here before.

Indirect aid

In cases where projects are implemented via the implementer's own research capacities, a significant part of R&D support in the CR comes from indirect instruments, especially in the form of tax breaks. At present, taxpayers may deduct 100% of expenditure on the implementation of an R&D project reported in the given tax period from their taxable earnings[23]. Tax relief for R&D donations is also available in the Czech Republic.

Summary

The hitherto experience in the implementation of programmes has shown that the demand for programmes, the orientation of which reacts to the existing barriers and obstacles preventing the development of R&D activities and cooperation between R&D institutions and the business sector, is sufficient in the Czech Republic.

We can show the programmes implemented within NRchP I and II as examples.

- A programme called “PROGRESS” was implemented within NRchP I in 2004 and 2005. More than 60 projects were registered in it each year. The projects were presented in cooperation between R&D institutions and the business sector. Due to the limited amount of finances the total number of supported projects was 26 in 2004 (allocation of CZK 300 million) and 18 in 2005 (allocation of CZK 130 million).
- In 2006, 143 project applications were registered with the programme “PERMANENT PROSPERITY” launched under the NRchP II; these are now being assessed. When compared to the previous years, the allocations have

[23] Act No 669/2004 Coll. amending Act No 586/1992 Coll. on income tax.

considerably increased, i.e. to CZK 2.708 billion, and despite this the total size of funds required by the project applications is higher than the amount of funds allocated for the programme.

- In addition to the programme "PERMANENT PROSPERITY", another two programmes of R&D institution and business sector cooperation were implemented in 2006, i.e. TANDEM and IMPULSE (also in the framework of NRchP II). In the case of these programmes the number of project applications and the required allocation of finances related to them have also exceeded the amount to be allocated for both the programmes.

The hitherto experience in the programme implementation has shown not only the demand for programmes creating conditions to develop R&D activities and the cooperation of R&D institutions and the business sector, but also (based on the evaluation of already implemented projects) the role of the programmes in removing some barriers as mentioned in the previous text.

An essential positive feature of implementing the projects launched under the programmes stated above lies in the fact that they create a real space for mutual cooperation that, based on experience, is in most cases also developed within the framework of other joint projects. At the same time, the R&D activities of all entities involved are reinforced.

The hitherto experience in the development of technological poles has shown that this area too has potential for further development in the Czech Republic. However, an important prerequisite for that is the existence of an appropriately set up supporting programme.

1.3.2 Aid from EU Structural Funds

During the current programme period EU Structural Funds are supporting R&DI activities. In the Czech Republic, during the current shortened 2004-2006 period, sub-programmes – PROSPERITY and INNOVATION, used in part to support R&DI projects – are being implemented within the scope of the Industry and Enterprise Operational Programme (financed from the ERDF). [24] Unlike certain EU Member Countries (e.g. Hungary and Slovenia), however, these programmes support innovation process activities only to a very limited extent. Therefore, no activities directly linked to the R&DI OP are assisted from the Structural Funds in the 2004-2006 period.

The Operational Programme financed from ERDF resources is complemented by the Human Resources Development Operational Programme (financed from the ESF), the aim of which is to increase the prospects of graduates from all types of study programmes and lifelong learning programmes on the labour market and to increase the professional standards of workers at R&D institutions.

In the 2007-2013 period, aid within the scope of the Enterprise and Innovation OP will follow up on the aid granted under the PROSPERITY and INNOVATION programmes. The

[24] The Industry and Enterprise Operational Programme is intended for regions falling under Objective 1 for the 2004-2006 period. Similar programmes have been drawn up for the City of Prague: Single Programming Document 2, Measure 2.1 Increasing the quality of partnership between the public sector, private sector, non-profit sector, science and research, and Single Programming Document 3, Measure 4.2 Cooperation between research and development centres and the business community, promotion of innovations; the total allocation for both measures is EUR 26,059,584.

Education for Competitiveness OP will be linked to measure 3.2 within the scope of the Human Resources Development OP (HRD OP).

Summary

The hitherto experience in this area has also shown a high level of effectiveness of providing the means for the development of R&D activities. 401 applications were registered altogether with the programmes PROSPERITY and INNOVATION under the 2004-2006 Industry and Enterprise OP (IE OP) by the application submission deadline. Submission of projects into both of the programmes was conditioned by the cooperation of one or more R&D institutions with one or more business entities.

Like in the case of national programmes, the following ex-post evaluation of the projects implemented within the PROSPERITY and INNOVATION programmes has shown a high level of satisfaction of all parties involved in the project, as well as their interest in further cooperation in the development and transfer of technologies and knowledge related to R&D issues. Therefore, it is essential to support the parties providing the supply, i.e. public R&D facilities and universities.

1.3.3 Research and development aid from EU programmes

R&D cooperation in the EU takes place in the form of Framework Programmes. In 2002, two programmes were launched:

1. The Sixth Framework Programme for Research, Technological Development and Demonstration, contributing to the creation of the European Research Area and to innovation[25] ("EU Sixth Framework Programme") and
2. The EURATOM Sixth Framework Programme for Nuclear research and Training Activities, contributing to the creation of the European Research Area [26] ("EURATOM Sixth Framework Programme").

Both programmes are intended for the 2002-2006 period. Representatives from the Czech Republic can take part by cooperating with an entity from another Member Country or affiliated country within a consortium.

Three systems are used for financing the projects within both programmes, i.e. a grant for budget, a grant for integration, and a "flat-rate" (a lump sum). In general, the aid amount depending on the activity type ranges from 25% to 100% of the total incurred project costs according to specific conditions of the programme.

---

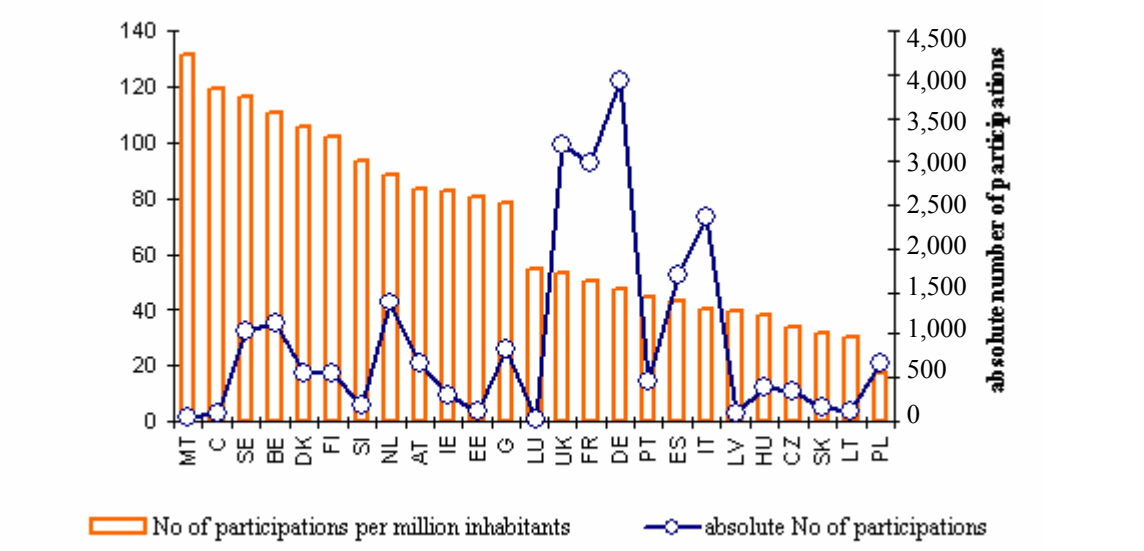
[25] Approved by the European Council and European Parliament on 27 June 2002; 1513/2002/EC.

[26] Approved by a decision of the European Council on 3 June 2002; 2002/668/Euratom.

Evaluation of the Czech Republic's participation in the EU and EURATOM Sixth Framework Programme

The Czech Republic takes an active part in both parts of the Sixth Framework Programme. A comparison of the participation of teams within the EU, including Czech teams, is given in bar Graph 1.3.3-1.

Graph 1.3.3–1: Participation of teams from the EU-25 Member Countries in the EU and EURATOM Sixth Framework Programme as a whole (number of participations, number of participants per million inhabitants[27])



Data source: Analysis of the state of research and development in the Czech Republic and comparisons with other countries in 2005 (primary source); database of contracted projects under the Commission's Sixth Framework Programme, July 2005

Of the 3,175 registered projects, 290 are projects that have received contributions from 348 teams from the Czech Republic. These data place the Czech Republic 22nd among the EU-25 Member Countries. If we were to rank the countries by absolute number of participations in projects under the Sixth Framework Programme, the Czech Republic would come 16th.

Czech participants claim aid from the Commission amounting to EUR 32.5 million. However, this amount does not include the requirements of Czech teams involved in "network of excellence" projects, as the aid allocated here is distributed by the actual share of a team in the network's activities.

Summary

The hitherto experience in the involvement of Czech teams in the EU framework programmes has shown a lesser ability to get involved in individual projects. One of the causes of this can be the fact that the conditions for the development of international cooperation in the Czech Republic have not reached a sufficient level.

---

[27] The graph contains figures registered as "successful" by the Commission as at 31 May 2005.

In this connection, it can again be stressed that there is a necessity of creating such system and infrastructure conditions that will increase the potential of Czech R&D teams and workers to cooperate at an international level.

1.4 SWOT analysis

SWOT analysis (an analysis of strengths and weaknesses in the field of R&DI in the CR and of the external opportunities and threats in the given area) is based on the existing knowledge stated in the text above in the analytical part and on the summary of it in four defined categories.

SWOT analysis

Strengths	Weaknesses
- Existence of high-quality scientific workers and scientific teams in selected scientific fields capable of standing their ground in the face of international competition - Developed R&D in certain aid regions (Central Bohemia and South Moravia Region) - Growing attractiveness of the Czech Republic for foreign direct investment in technology poles and other strategic services	- Long-term low expenditure on R&D compared to EU-15 countries - Insufficient capacities of most R&D facilities including materials and instrumentation - Low number of qualified R&D workers when compared to the EU-15, resulting in particular from limited capacities of universities with the respective orientations - Insufficiently developed managerial skills among workers from academic institutions - Insufficient motivation at R&D facilities to cooperate with the practical sphere - Low interest in cooperation expressed by the research and business communities - Unsatisfactory results of applied R&D when compared to the EU (in terms of lagging behind, especially in the number of patents registered with and granted by both national and international authorities) - Insufficient transfer of R&D knowledge into practice (e.g. insufficient number of new technologically oriented companies) and an insufficient number of poles of excellence at universities and research institutions - Insufficient awareness of R&D achievements and their application among entities within the academic and business spheres and the wider public too - Low concentration of R&D activities in most regions compared to Prague

Opportunities	Threats
- Increase in expenditure on R&D at least to the average level reported by developed countries - Creation of conditions for cooperation between regions in R&D - Development of cooperation with international (especially European) R&D structures - Improvement in the transfer of R&D results for practical use, as a result of the Czech Republic's focus on a knowledge economy - Motivation of the public sector to get more involved in R&D and to cooperate with the private sphere - Improving mobility between the R&D facilities and the private sphere - Expansion of indirect instruments for promoting private sector R&D to include cooperation with universities and public research institutions - Promotion of environmental protection as an incentive for the development of new technologies	- Insufficient increase in, stagnation of, or decrease in expenditure on R&D - Preservation of an unjustifiable number of R&D State aid providers - More favourable conditions for R&D activities in developed countries, leading to the draining of human and financial resources from the Czech Republic - Preservation of the current structure and evaluation of R&D organizations drawing on State aid - Increased regional disparities within the distribution of higher education, science and research potential, expenditure on R&D, and R&D employment in the CR

2. Strategy selected

The orientation of the 2007 – 2013 Research and Development for Innovations Operational Programme follows the priorities of the 2007 – 2013 Czech Republic National Strategic Reference Framework (hereinafter referred to as "NSRF"). Furthermore, the Operational Programme respects the Cohesion Policy to support growth and employment: Community Strategic Guidelines, 2007-2013 (hereinafter referred to as "CSG"), and the 2005-2008 National Lisbon Programme - the Czech Republic National Reform Programme (see Chapter 1.1).

The CSG general guideline "Knowledge and innovation for growth" encourages EU Member Countries to strengthen their R&D capacity building, including the research infrastructure and human capital, and to strengthen cooperation between firms and public/university institutions via support for the creation of regional and supra-regional poles of excellence (see Chapter 1.1).

In response to the Lisbon Strategy, the NRP identified the creation of an environment stimulating research, development and innovation as one of the priorities in the microeconomic sphere, and set specific measures in the field of R&D focusing on attainment of the objective.

One of the NSRF priorities is "Strengthening the Competitiveness of the Czech Economy", which covers support oriented towards completing the restructuring of the Czech economy, support for the development of progressive industries, and strengthening the links between applied research and development on one hand and business entities on the other.[28]

2.1 Global strategic objective of the R&DI OP

The global objective of the R&DI OP is to reinforce the Czech Republic's research, development and innovation potential, ensuring growth, competitiveness and the creation of jobs in the regions[29] (so that the Czech Republic can become a significant location in Europe where these activities are concentrated) via universities, research institutions and other relevant entities.

The global objective covers much of the Strategic Objective of the National Strategic Reference Framework "A competitive Czech economy" and fully complies with the second general principle of the CSG – "Knowledge and innovation for growth" – and with Article 4 of the General Regulation. The global objective of the R&DI OP also falls within the general framework of the reform steps laid down in the microeconomic sphere under the NRP.

[28] To highlight the links between the three operational programmes, i.e. R&DI OP, EI OP and EC OP, the strategy description is more comprehensive than the area covered by the R&DI OP itself. The relations to other programmes are described below.

[29] NUTS II regions.

2.2 Specific objectives of the R&DI OP

An analysis of the current economic and social situation in R&DI and a SWOT analysis identified a whole number of weaknesses in R&DI. However, they also identified the Czech Republic's major potential in the field of R&D. The specific objectives of the R&DI OP are a natural response to the strengths and weaknesses. They have been set up to eliminate factors that hinder development and growth on the one hand and to exploit the advantages offered by growth opportunities on the other.

The specific objectives represent methods that will lead to the achievement of the global objective. They are oriented towards the building of modern capacities within the public sector in areas that have sufficient sources established for it, providing modern technologies for them, ensuring suitable working conditions for the best scientists, and attracting the top experts from abroad for the purpose of experience transfer. An important aspect of this is enhancement of the prestige of science, which together with other instruments will lead to attracting the youngest generation of talents to research activity. At the same time, the specific objectives are intended for creating a suitable environment to transfer R&D results into practice, and for enabling the establishment of technologically oriented companies (including spin-off companies) at universities and research institutions. The effective interlinking of companies with the research environment will lead to economic growth and to growth in employment.

Specific objectives of the programme in the context as given above include:

1. Strengthening research capacities in regions focused particularly on targeted research and ensuring their fast and effective application at regional, national and European level.
2. Strengthening the capacities of technically oriented research essential for cooperation between the public sector and the private sector, and fast and effective transfer of R&D results.
3. Strengthening the educational capacities at universities to ensure competitiveness.

The specific objectives fall within the NSRF priority "Strengthening the Competitiveness of the Czech Economy". At the same time, both the objectives represent a basis for proposing R&DI OP priority axes.

1. Priority axis "Development of R&D capacities"

The priority axis is aimed at ensuring smooth and permanent creation of research knowledge in regions to be used for sustainable development of the economy, and to secure the fast and effective spreading of that knowledge at all levels. A condition for achieving the objective of the priority axis is the utilization of growth potential particularly for well-considered and targeted R&D capacity building at regional, national and European level to be oriented towards research priorities in selected branches.

2. Priority axis "Development of capacities for cooperation of the public sector and the private sector within R&D"

The priority axis is aimed at supporting permanent and effective cooperation between public research/university and other institutions and between companies, leading to the transfer of R&D knowledge to users. Progressive forms of support that have successfully been proven abroad will be used, e.g. the development of capacities for

technical research, support for establishing technologically oriented companies (including spin-off companies) at universities and research institutions, support of targeted awareness of R&D achievements for innovations, and development of a system (agency) support framework for the application of R&D results.

3. **Priority axis "Strengthening of university capacities for tertiary education"**

   The priority axis is aimed at increasing university capacities in the area of tertiary education to the required qualitative level; the new capacities will be used for growth and support of competitiveness and employment in regions.

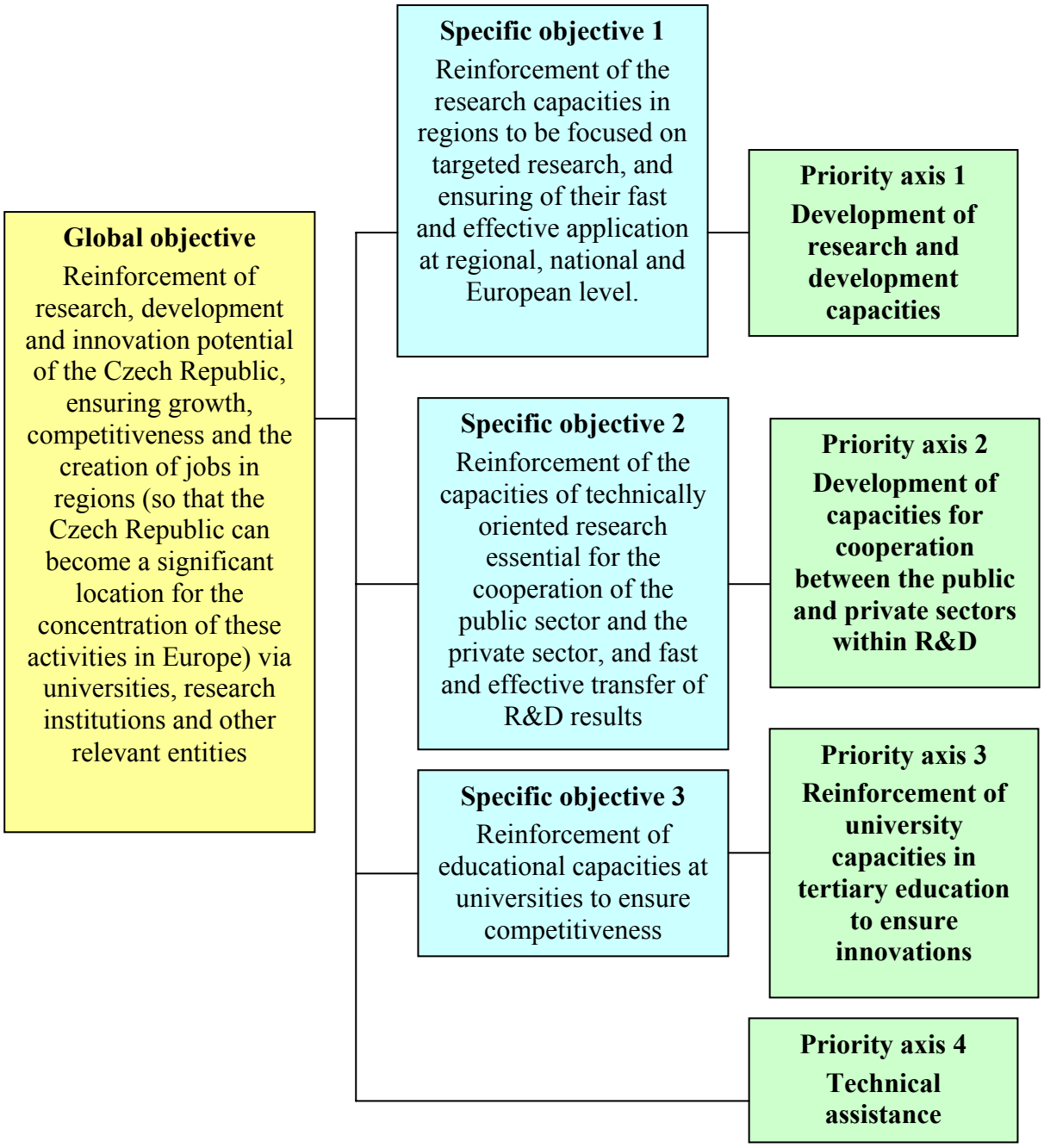
4. **Priority axis "Technical assistance"**

   Technical assistance is aimed at helping to improve the quality of the measures being taken, i.e. to ensure effective management of the operational programme, its promotion, assessment, including evaluation of development of a knowledge economy and innovations, and to suggest and implement corrective measures while using international benchmarking.

The R&DI OP is primarily focused on investments that will increase and modernize the Czech R&D capacities with the required concentration on priority areas of R&D (long-term basic directions of research and development, hereinafter referred to as "LBRDD"), and on a smaller number of key projects. The R&DI OP objectives, conditions and indicators have been selected so as to eliminate spending funds on small mutually unrelated projects. In areas of support that are decisive in terms of allocation of funds (1.3, 2.1 and 3.1), it is assumed that the average project size will approach EUR 17 million, while for area of intervention 1.2 only projects over EUR 50 million are to be implemented. Although area of intervention 1.1 covers smaller projects based on know-how to be distributed from the more developed regions, the input criteria will be much more demanding because they will consider both the actual need for investments in terms of innovations and cooperation with industry as well as long-term sustainability of the project in terms of personnel. Last but not least, the R&DI OP creates the conditions for future cooperation between the public sector and the private sector, based on developing the capacities of targeted and technically oriented research (essential for such cooperation) and the capacities of universities in selected technical and natural science branches from which graduates to establish such cooperation are missing. A thorough corroboration of both the history and future application of the graduates and the links between the educational activity and research and innovations will be an input condition for all projects in the area of intervention 3.1. The actual cooperation between companies, universities and research institutions in specific business activities is then addressed in the EI OP.

There is an overview of the R&DI OP objectives and priority axes in Figure 2.2–1.

Figure 2.2–1: R&DI OP objectives and priority axes



2.3 Coherence of the R&DI OP with Relevant National and European Strategic Documents

The R&DI OP strategy is in full compliance with the basic strategic documents of both the European Union and the Czech Republic.

1) Community Strategic Guidelines (CSG)

The Community Strategic Guidelines represent a fundamental strategic document of the Economic and Social Cohesion Policy of the EU. The R&DI OP takes part in the fulfilment of priorities of the "Improving Knowledge and Innovations" Guideline by supporting innovations, business and growth of economic knowledge using research and capacity innovations, particularly through investments in technological infrastructure. It also directly leads to job opportunities for highly qualified persons in the area of R&D. In addition, it indirectly assists in having more persons involved in employment and business, and in increasing investments in human capital through better education and qualification. The R&DI OP is fully consistent with the CSG.

Table 1: R&DI OP and CSG Links

Community Strategic Guidelines	Priority axes of R&DI OP		
	Priority axis 1 R&D capacity development	**Priority axis 2** Development of capacities for the cooperation of public and private sectors in R&D	**Priority axis 3** Reinforcement of university capacities in tertiary education
Guideline 1: Making Europe and its regions more attractive places to invest and work in			
To extend and improve transport infrastructures			
To strengthen the collaboration between environmental protection and growth			
To deal with the intensive exploitation of traditional energy sources in Europe			
Guideline 2: Improving Knowledge and Innovations: The Path to Growth			
To increase and improve the investments in research and technological development	XXX	XXX	XXX
To facilitate innovations and to support enterprise	XXX	XXX	XXX
To support an informational society for all	X	X	X
To improve access to finances			
Guideline 3: More and Better Jobs			
To attract more people to work, to ensure that they remain in employment, and to modernize social welfare systems	XX	X	XX
To increase the adaptability of workers and companies and the flexibility of labour markets			X
To increase investments into human capital through better education and qualifications		X	X

Administrative capacity			
To assist in maintaining a healthy labour force			

Notes: XXX OP priority is dominantly focused on achieving the objectives of the given CSG priority.

XX OP priority significantly assists in achieving the objectives of the given CSG priority.

X OP priority is not directly focused on achieving the objectives of the given CSG priority, but it vicariously assists in their achievement.

2) Economic Growth Strategy of the CR (EGS)

The Economic Growth Strategy objective is to set such priorities to ensure that the Czech Republic becomes a knowledge-technological pole of Europe with an increasing standard of living and a high employment rate, linked to the Lisbon strategy principles. It represents a starting point for coordination of economic policy and channelling finances from EU funds for the period of 2007 – 2013. In compliance with the EGS, the R&DI OP considerably helps fulfil the second, fourth and fifth pillars of growth. The quality preparation of absorption capacity increases readiness to draw on the funds for this OP, which develops the capacities for an effective partnership of the public and private sectors, and helps increase the level of education, employability and application of human resources by increasing and developing university capacities. In the field of research, development and innovations, the R&DI OP creates conditions for strengthening the R&DI by developing networks of research facilities and top poles of excellence, including capacities of targeted R&D in regions, and supports the protection and use of the intellectual property, cooperation between the public and private sectors, and increased awareness of R&D results.

Table 2: R&DI OP and EGS links

Economic Growth Strategy of the CR	**Priority axes of R&DI OP**		
	Priority axis 1 **R&D capacity development**	**Priority axis 2** **Development of capacities for cooperation between the public and private sectors in R&D**	**Priority axis 3** **Reinforcement of university capacities in tertiary education**
P 1: Institutional environment for business			
Favourable legislative environment and improvement of law enforceability			
To ensure an efficient and productive public service			
Competitive taxation system			
To improve the competitive environment and to remove barriers	X	X	
To efficiently use market-conforming supporting instruments			
P 2: Sources of financing			
To ensure sufficient resources from the EU	X	X	X

To maximize the flow of investments, and to efficiently privatize property in public ownership			
To create an environment for efficient partnership between the public and private sectors (PPP)	XX	XX	XX
To support commercial sources of financing			
To use public finances prudently			
P 3: Infrastructure			
To increase the mobility of persons, goods and information			
To accelerate the implementation of investment projects in the public and private sectors			
To accelerate the economic development of regions	XX	XX	XX
To ensure the protection of nature, the environment and cultural heritage			
To maintain competitive production and operating costs, to optimize the branch structure of comparative price advantages			
P 4: Development of human resources – Education and employment			
To increase flexibility of the educational system		X	XX
To increase the level of education of the older generation			XX
To ensure sufficient labour supply	X	X	XX
To increase labour market flexibility	X	XX	X
To ensure an employment policy that motivates people to work			
To improve the strategic management of human resource development	X	X	X
P 5: Research, development and innovations			
To strengthen research and development as a source of innovations	XXX	XXX	X
To establish functional cooperation between the public and private sectors in R&DI	XX	XXX	XX
To ensure human resources for R&DI	XX	XX	XXX
To make government administration in R&DI more efficient	X	X	X

Notes: XXX OP priority is dominantly focused on achieving the objectives of the given EGS pillar;

XX OP priority significantly assists in achieving the objectives of the given EGS pillar;

X OP priority is not directly focused on achieving the objectives of the given EGS pillar, but it indirectly assists in their achievement.

3) CR National Reform Programme (NRP)

The National Reform Programme is oriented to the revised Lisbon Strategy, which is focused on solving the long-term structural problems of the EU and of individual countries in macroeconomics, microeconomics and employment policy for the period of 2005–2008. The CR Strategy of Sustainable Development and the CR Economic Growth Strategy are based on Czech resources. The most important NRP steps, which are linked to the National Strategic Reference Framework, are as follows: to create an environment stimulating research, development and innovations, including their commercial utilization in economic practice, to modernize and develop the relevant networks, and to create a quality business environment. The R&DI OP, which is fully inter-linked with the "Research and development and innovations" priority measure and also helps implement the "Education" measure, is fully consistent with the NRP.

Table 3: R&DI OP and NRP links

National Reform Programme	R&DI OP priority axes		
	Priority axis 1 R&D capacity development	**Priority axis 2** Development of capacities for cooperation between the public and private sectors in R&D	**Priority axis 3** Reinforcement of university capacities in tertiary education
Business environment			
To simplify entry into business			
Research and development, innovations			
To increase the intensity of utilization of intellectual property protection instruments by scientific and research institutions and companies	X	XXX	
To develop innovative infrastructure	XX	XX	X
To improve access for innovative companies to financial resources			
Sustainable exploitation of resources			
To support environmentally friendly technologies	X	X	
Modernization and development of transport and ICT networks			
To support the development and efficient utilization of ICT	X	X	X
Integration into the labour market			
To reduce the unemployment of young people under 25			
To increase the participation of older persons on the labour market			
To simplify access for foreigners to the labour market	X	X	
Education			
To implement curriculum reform			
To extend access to advanced vocational education and to higher education			XXX

To support cooperation between employers, employees and educational and vocational and training institutions	X	XX	XX
To improve the inter-connection of the system of initial and further education		X	XX
To support permeability between individual stages of tertiary education		XX	XX
To increase the informational level of education	X	X	XX

Notes: XXX OP priority is dominantly focused on achieving the objectives of the given NRP priority measure;

XX OP priority significantly assists in achieving the objectives of the given NRP priority measure;

X OP priority is not directly focused on achieving the objectives of the given NRP priority measure, but it indirectly assists in their achievement.

4) Czech Republic National Development Plan for 2007–2013 (NDP)

The National Development Plan ensures a linkage between the Community Strategic Guidelines and other European and national strategic documents. It also represents a support for and a specific starting point of the preparation of the National Strategic Reference Framework for 2007–2013. Its objective is to identify the prerequisites for sustainable economic growth and employment by strengthening competitiveness in connection with the different needs and socioeconomic conditions of individual regions in the CR. It also outlines the scope of application of individual OPs. With regard to the close linkage between the NSRF and the NDP, the table below only shows the link at the level of priority axes. The R&DI OP assists in implementing the measures of the "Strengthening the competitiveness of the Czech economy" priority axis by supporting innovations and a knowledge economy, by strengthening research capacities, technological development, infrastructure for business, and innovative networks, including the use of new information technologies. The R&DI OP is fully consistent with the NDP.

Table 4: R&DI OP and NDP Links

CR National Development Plan	**Priority axes of R&DI OP**		
	Priority axis 1 **R&D capacity development**	**Priority axis 2** **Development of capacities for cooperation between the public and private sectors in R&D**	**Priority axis 3** **Reinforcement of university capacities in tertiary education**
Strengthening the competitiveness of the Czech economy	XXX	XXX	XXX
Development of a modern and competitive society	XX	XX	XX
Environment and accessibility			
Balanced and harmonic development of the CR	XXX	X	X

Notes: XXX OP priority is dominantly focused on achieving the objectives of the given NDP priority axis;

XX OP priority significantly assists in achieving the objectives of the given NDP priority axis;

X OP priority is not directly focused on achieving the objectives of the given NDP priority, but it indirectly assists in their achievement.

5) National Strategic Reference Framework (NSRF)

The National Strategic Reference Framework is based on the priorities defined in the National Development Plan. Its objective is to transform the socioeconomic environment of the Czech Republic in accordance with the principles of sustainable development so that the Czech Republic becomes an attractive place for investing into and for its inhabitants to work and live in. It defines a system of operational programmes for economic and social cohesion policy for 2007 – 2013 that will be used to implement individual priorities. The R&DI OP helps implement the "Competitive Czech economy" priority axis by supporting R&D capacities for innovations, and it significantly assists in achieving the objectives of the "Open, flexible and cohesive society" and "Balanced development of the territory" priority axes.

Table 5: R&DI OP and NSRF Links

National Strategic Reference Framework	Priority axes of R&DI OP		
	Priority axis 1 R&D capacity development	**Priority axis 2** Development of capacities for cooperation between the public and private sectors in R&D	**Priority axis 3** Reinforcement of university capacities in tertiary education
I. Competitive Czech economy			
Competitive business sector	XX	XXX	XX
Support of R&D capacities for innovations	XXX	XXX	XXX
Development of sustainable tourism			
II. Open, flexible and cohesive society			
Education	X	X	XXX
Increasing the employment rate and enhancing employability	X	X	XX
Strengthening social cohesion	X	X	X
Development of an information society	X	X	X
Smart public administration			X
III. Attractive environment			
Protection of the environment and improvement of its quality	X	X	X
Better accessibility by transport			
IV. Balanced development of the territory			
Balanced development of regions	X	X	X
Development of urban areas			
Development of rural areas			
Territorial cooperation	X	X	X

Notes: XXX OP priority is dominantly focused on achieving the given NSRF strategic objective;

XX OP priority significantly assists in achieving the given NSRF strategic objective;

X OP priority is not directly focused on achieving the given NSRF strategic objective, but it indirectly assists in its achievement.

6) CR National Innovation Policy for 2005–2006 (NIP)

The National Innovation Policy thoroughly analyzes the sources of the Czech Republic's competitiveness, particularly the situation in innovative activities, and devises four strategic objectives for their development and permanent growth. 48 specific measures, including respective responsibilities and deadlines, have been defined for their implementation. The R&DI OP is fully coherent in terms of its connection with the implementation of all four NIP strategic objectives, i.e. to strengthen research and development as a source of innovations, to establish functional cooperation between the public and private sectors, to ensure human resources for innovations, and to make the government's administration in research, development and innovations more efficient.

Table 6: R&DI OP and NIP Links

CR National Innovation Policy	Priority axes of R&DI OP		
	Priority axis 1 R&D capacity development	**Priority axis 2** Development of capacities for cooperation between the public and private sectors in R&D	**Priority axis 3** Reinforcement of university capacities in tertiary education
To strengthen research and development as a source of innovations	XXX	XXX	XXX
To establish functional cooperation between the public and private sectors	XX	XXX	XX
To ensure human resources for innovations	XX	XXX	XXX
To make the government's administration in research, development and innovations more efficient	X	X	X

Notes: XXX OP priority is dominantly focused on achieving the given NIP strategic objective;

XX OP priority significantly assists in achieving the given NIP strategic objective;

X OP priority is not directly focused on achieving the given NIP strategic objective, but it indirectly assists in its achievement.

7) CR National Research and Development Policy for 2004–2008 (NRDP)

The NRDP is the essential conceptual document of the country in the field of research and development administration and management, which is interlinked with other documents and legislative tasks in this field. It primarily addresses the effective utilization of R&D strategic instruments (financing, legal environment, organizational structure, informational and technological structure). The following areas have been selected as system priorities for the period of effect of this national policy: human resources, international cooperation in R&D, regional R&D aspects, utilization of R&D results in practice, and research assessment. The R&DI OP supports the mobility of R&D workers between sectors, and investments in infrastructure, which will lead to an improvement in working and material conditions and will

enhance the attractiveness of R&D work. The programme also supports the development of top poles of excellence to be incorporated into the European Research Area. Furthermore, it supports links between the public and private sectors in regions, conditions leading to the establishment of spin-off companies, and the utilization of intellectual property, including the utilization of all instruments of research evaluation. In terms of all of these support mechanisms, the R&DI OP is fully consistent with all the system priorities of the NRDP.

Table 7: R&DI OP and NRDP Links

National Research and Development Policy	Priority axes of R&DI OP		
	Priority axis 1 R&D capacity development	**Priority axis 2** Development of capacities for cooperation between the public and private sectors in R&D	**Priority axis 3** Reinforcement of university capacities in tertiary education
Human resources	XXX	XXX	XXX
International cooperation in R&D	XX	X	
Regional aspects of R&D	XX	X	X
Utilization of R&D results in practice	XX	XXX	X
Research assessment	X	X	X

Notes:
- XXX OP priority is dominantly focused on achieving the objectives of the given NRDP system priority;
- XX OP priority significantly assists in achieving the objectives of the given NRDP system priority;
- X OP priority is not directly focused on achieving the objectives of the given NRDP system priority, but it indirectly assists in their achievement.

8) National Research Programme II (NRchP II)

The National Research Programme II is an instrument implementing the Czech Republic National Research and Development Policy for the period of 2004-2008. It represents a set of programmes being approved by the Government, including the definition of specific objectives for supporting purpose-specific financing of research priorities in the Czech Republic to be implemented in 2006-2011. The NRchP II consists of 7 programmes in total, i.e. 4 thematic and 3 cross-sectional programmes, which are provided by the Ministry of Education, Youth and Sports and by the Ministry of Industry and Trade. The R&DI OP is fully consistent with the NRchP II.

Table 8: Consistency of the R&DI OP with the NRchP II

National Research Programme II	Priority axes of R&DI OP		
	Priority axis 1 R&D capacity development	**Priority axis 2** Development of capacities for cooperation between the public and private sectors in R&D	**Priority axis 3** Reinforcement of university capacities in tertiary education
NRchP II thematic programmes			
Permanent prosperity (TP1)	X		
Healthy and quality life (TP2)	X		
Information technologies for a knowledge society (TP3)	X	X	X
Socioeconomic development of Czech society (TP4)	X		
NRchP II cross-sectional programmes			
Human resources (CP1)	XXX	XXX	XXX
International cooperation (CP2)	XX	X	X
Support for preparation and implementation of national policy, including technical assistance (CP3)			

Notes: XXX OP priority is dominantly focused on achieving the objectives of the given NRchP II priority;

XX OP priority significantly assists in achieving the objectives of the given NRchP II priority;

X OP priority is not directly focused on achieving the objectives of the given NRchP II priority, but it indirectly assists in their achievement.

9) Council Regulation (EC) No. 1080/2006 on European Regional Development Fund (ERDF)

The Council Regulation (EC) on the European Regional Development Fund responds to EU enlargement, which has deepened the regional differences in the European Union and increased the number of regions lagging behind the EU average. The European Regional Development Fund should help such regions achieve convergence and at the same time strengthen the competitiveness of the most developed regions. The ERDF is focused on three objectives:

Regional competitiveness and employment - to support innovations and an economy based on knowledge, and access to transport services and information and communication technologies to reduce regional isolation from transport and digital networks.

Territorial cooperation – to support cross-border and supranational cooperation, development of exchange networks, and analyses and studies between regions and local authorities.

Convergence – within this objective to support activities that will enable the regions to mobilize and modernize resources, and to launch the process of integrated and sustainable regional development with an emphasis placed on research and innovations.

2.4 R&DI OP Link to the Other Operational Programmes

The R&DI OP and the other two thematic operational programmes complement one another. These are the Education for Competitiveness Operational Programme and the Enterprise and Innovations Operational Programme. These three OPs jointly respond to weaknesses identified in the analysis of the current social and economic situation in R&D. The response then results in a system of mutually related priority axes and areas of intervention that will lead to the long-term sustainability of the Czech economy's competitiveness supported by targeted and efficient cohesion aid.

The set of mutually linked OPs is a very important element for the fulfilment of the Lisbon Strategy objective consisting in strengthening the roles of a knowledge economy, innovations, and R&D. For the basic external and internal links, boundaries and synergy of the three OPs refer to chart 2.3-1 on the next page. In addition to the material definition of their boundaries, these OPs differ particularly by aid source (EC OP – ESF and R&DI OP – ERDF) and by the boundaries laid down in the Commission principles applicable to public aid – Community Framework for Public Aid for Research, Development and Innovations (R&DI OP – "non-profit research organizations" and EI OP – "enterprises").

2.4.1 Education for Competitiveness Operational Programme

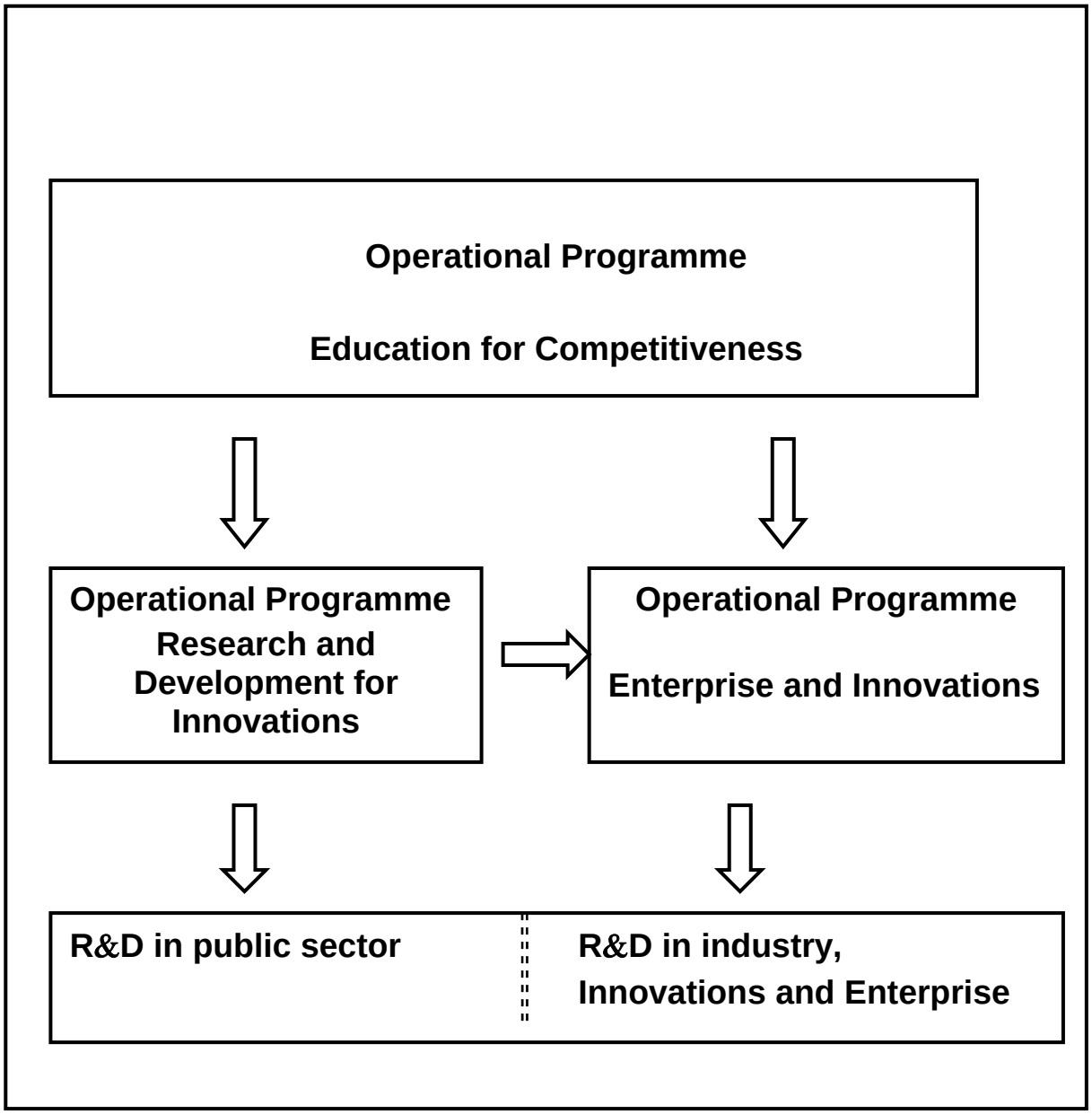
The Education for Competitiveness OP will be financed from the ESF, and its Managing Authority will be the Ministry of Education, Youth and Sports. The synergic effects of the Education for Competitiveness OP and R&DI OP will be achieved by a combination of ESF measures intended for human resources and ERDF measures supporting investments so that both of the project types can be linked one to another. In the Education for Competitiveness OP, the R&D is concentrated within Priority axis 2 – Tertiary education, and research and development in the 'Human resources in research and development' intervention area.

The Human resources in research and development intervention area is directly linked to the modernization and extension of research and development capacities. It covers several sub-programmes focused on support for increasing high quality human potential for R&D. Activities oriented towards establishing quality and prospective teams in R&D will be supported. Within this intervention area, young research workers starting up will be supported in order to increase their scientific skills, and so will scientific workers returning from a long professional stay abroad, as well as disadvantaged groups of workers in R&D. Another supported area covers the involvement of regional entities from the CR in the activities within European cooperation in the field of R&D, and in the activities supporting the horizontal mobility of workers between the public and the private sectors in R&D, which is a necessary prerequisite for successful research and development for innovations. Another significant inclusion in this support area will be educational programmes for workers in R&D aimed at improving their managerial skills and other skills.

R&DI OP Priority axis 3 – Reinforcement of the educational capacities at universities for competitiveness – is also supplemented by other areas of intervention from the EC OP. This regards the area of intervention focused on the modernization of higher education in order to

innovate and increase the capacity of university study programmes, and to enhance the application of their graduates on the labour market. Within the EC OP, systematic support will also be provided for the development of technical and natural sciences, including professional and research activities of youth.

Figure 2.3.–1: Basic Links between R&DI OP, EC OP and EI OP



2.4.2 Enterprise and Innovation Operational Programme

The "Enterprise and Innovation" Operational Programme (hereinafter referred to as "EI OP") is more focused on lower order innovations that use R&D results in a shorter and a medium-term time horizon, and on innovations arising mainly out of the initiative of enterprises. If the EI OP supports R&D, then this support covers the cooperation of existing R&D capacities with enterprises within the existing structure of the economy.

The R&DI OP, on the other hand, is more focused on R&D support for higher order innovations that rather use R&D results with a long-term time horizon, primarily based on the supply of research organizations. Even in this case, however, the suggested priority axes and intervention areas rely on close cooperation with users of the results in the business sphere within the gradually restructuralized economy.

The Enterprise and Innovation OP is generally focused on improving the conditions for the business environment and on supporting innovations. The Program will be financed from the ERDF, and its Managing Authority will be the Ministry of Industry and Trade (MIT). The synergy of programmes lies in the combination of R&D results as generated by the R&DI OP in accordance with the Community Framework for Public Aid for Research, Development and Innovations, and their utilization ensured by the EI OP, including their transfer to the other stages of innovations. The EI OP covers several priority axes, which are directly linked to the supports provided within the R&DI OP.

Priority axis 1 "Establishment of companies"

This priority axis covers two intervention areas, focusing on creating conditions for the establishment of new companies, with an emphasis placed on aid to innovation-oriented companies. Here, attention is paid to the issues related with the availability of suitable financial resources, including the production of new financial instruments with a pro-innovative effect to facilitate access to capital for entrepreneurs starting up, and thus to increase the possibilities of financing their business plans and submitted projects.

These activities will be linked to those within intervention area 2.2 of the R&DI OP.

Priority axis 2 "Development of companies"

This priority axis covers two intervention areas, focusing on supporting the implementation of development business projects submitted by competitive small and medium-sized enterprises, which are prevented from obtaining external sources of financing due to lower own capital availability or limited ability of ensuring credit coverage. Emphasis is placed not only on improving the technical facilities of the enterprises by purchasing new modern technologies, but also on strengthening the sector of information and communication technologies, on utilizing ICT in enterprises, and on developing selected strategic services.

These activities will be linked to those within intervention areas 1.1., 1.2., 2.1., 2.2., and 2.3. of the R&DI OP.

Priority axis 4 “Innovations”

The priority axis covers two intervention areas, focusing on supporting both technical and non-technical innovations in enterprises, including growing their cooperation with research and development organizations, and on supporting their own internal capacities for R&D, especially in the sector of small and medium-sized enterprises so that the innovative activity and the number of enterprises conducting their own research and development can be increased. In this regard, the priority axis is primarily focused on the commercialization of R&D results that can direct, expedite and improve the quality of innovative processes towards a higher competitiveness of the industry and services sector. Within this priority, attention is also paid to the activities related to the protection of industrial property.

These activities will be linked to those within the intervention areas 1.1., 1.2., 2.1., 2.2., and 2.3. of the R&DI OP.

Priority axis 5 “Environment for business and innovations”

The priority axis covers three areas of intervention and monitors the creation of an environment suitable for the establishment and development of innovative enterprise. It is focused on creating the necessary infrastructure for entrepreneurs starting up (especially for innovationally oriented projects) in the form of business incubators, and on enlarging and improving the quality of cooperation between the business sphere and educational institutions from the area of research and development to support and expedite innovative processes in enterprises. Within its framework, all forms of effective cooperation between enterprises, especially SME, and other entities will be supported.

The priority axis is focused on supporting the establishment and development of cooperation branch clusters, poles of excellence and technological platforms, as well as on supporting the establishment, activities and further development of the entities within the infrastructure for industrial research, technological development and innovations (establishment and development of scientific and scientific-technical parks, and poles for the transfer of technologies).

This priority axis is also focused on creating a quality infrastructure for education and development of human resources in the business sphere and in institutions providing services for business entities in the field of further education of employees. In addition, attention is paid to the issues related to improving the quality of infrastructure for business, especially in the form of creating and developing real estate for business activities at the level of European standards, particularly in the form of brown-field regeneration.

These activities will be linked to those within intervention areas 1.1., 1.2., 2.1., and 2.2. of the R&DI OP.

2.5 Ex–ante Evaluation of the R&DI OP

2.5.1 Introduction

Pursuant to the European Union requirements, the ex-ante evaluation of programme documents is an integral part of their preparation. The ex-ante evaluation of the Research and Development for Innovations Operational Programme that was prepared by the Centre of Regional Sciences and Public Administration of the Faculty of Economics and Public

Administration, University of Economics, Prague, has been conducted in accordance with the given requirement of the European Union. The ex-ante evaluation was carried out in four stages, and the respective outputs were submitted as at 18 April, 4 May, 30 June, and 31 October.

In accordance with the rules and regulations applicable to the ex-ante evaluation of programme documents, two basic principles were primarily applied during its conducting and processing:

1) Principle of continuity, i.e. the evaluation team assessed individual parts of the document being prepared on a continuous basis, while taking partial standpoints to them. These standpoints contained their recommendations for amending, editing or modifying the document under preparation. The standpoints were presented in the form of both written materials and verbal comments.

2) Principle of cooperation, i.e. the evaluation team's activity was not conducted separately from that of authors of the programme document, but both groups of experts worked in close collaboration, i.e. within working groups, through individual personal communication of individual team members or via electronic communication.

3) Principle of active assistance – the evaluation team formulated many recommendations and alternatives that have helped overcome initial problems concerning the definition of the OP's contents and its links to other programmes.

The evaluation team is to confirm that the programme document contains, at least in a certain form, all of the relevant parts required by the European Commission. However, it would be appropriate to further strengthen the extent as well as the contents of some parts. This mainly refers to the area of hitherto results and experience and to the description of R&DI OP implementation in the period of 2007–2013.

As a result of the application of the above-mentioned principles, we succeeded in having the programme document, i.e. the Research and Development for Innovations Operational Programme, prepared in such a form that, in principle, reflects the views of the evaluation team as to its contents.

2.5.2 Standpoint of the Evaluation Team on the Main Attributes of the Programme Document

a) Assessment of the overall consistency of the document

The Research and Development for Innovations Operational Programme is primarily focused on the general strengthening of capacities, including at a regional level, in the field of research and development in the Czech Republic.

The evaluation team is to confirm that the data contained in the analytical part of the R&DI OP have, in principle, documented the need for capacity development on the part of supply in the field of R&D (especially in the public sector)[30]. The low level of cogency of the assessment of hitherto results and experience in the exploitation and development of capacities

[30] The evaluation team is to draw attention to possible pitfalls in supporting the private entities – private universities.

in the field of R&D has somewhat limited the infomative power of analyses conducted within the R&DI OP.

The strategic part and the definition of R&DI OP priority axes reflect the real needs of the CR. The evaluation team is to appreciate the endeavour to concentrate the support on selected projects that will have an evident territorial dimension. The R&DI OP strategy tries to take into account the different levels of development potential of regions or towns, but only at a general level. The territorial (regional and urban) dimension should reflect regional priorities of the NSRF and of the Regional Development Strategy of the CR; the interventions should be supported by complementary projects of the ROP.

The R&DI OP is primarily focused on strengthening supply in the field of R&D, and on the closely associated EI OP operational programme, which is oriented to the application and commercial utilization of R&D knowledge, also in the form of innovations, i.e. on demand. This setting requires a close interconnection and a coordination of the intervention provided through both programmes, including creation of a mechanism for systematic monitoring of the real fulfilment of links (interconnection of the projects of the above-mentioned programmes). The evaluation team suggests that a coordination body at the level of Managing Authorities of the above-mentioned OPs should be established.

b) Assessment of the compliance of the presented programme document with respective documents at supranational and national level

The evaluation team is to confirm that the presented R&DI OP complies with the Lisbon Strategy and its associated documents, especially with the 2005 – 2008 National Lisbon Programme – the CR National Reform Programme. It also complies with strategic documents of the economic and social cohesion policy, at European level with the Community Strategic Guidelines (CSG), and at national level with the CR National Strategic Reference Framework for the period of 2007-2013.

The R&DI OP also becomes an instrument to be used for the implementation of long-term national concepts and strategies such as the National Innovation Policy and National Research and Development Programme.

The successful implementation of the intervention to be provided through the R&DI OP requires a close interconnection, particularly with the EI OP, as well as with the EC OP, which supports the development of human resources for R&D. A detailed description should be an integral part of the Implementing document to the R&DI OP.

c) Setting-up of indicators

The evaluation team is to confirm that the setting-up of indicators complies with the contents of the R&DI OP. The R&DI OP context and impact indicators are contained within the text of the document, while the indicators at the level of priority axes are given in the Annex.

d) Financial plan

The spread of draw-down of financial resources over individual years is characterized by their gradual increase. The evaluation team respects the wide consensus achieved on the distribution of finances among individual R&DI OP priority axes.

e) Implementation

The programme document implementation is set in accordance with current rules and regulations. The evaluation team recommends stating the manner of cooperation and coordination of activities of the managing and intermediate entities for the implementation of the R&DI OP and associated OPs.

f) Conclusion

The R&DI OP may be instrumental in fulfilling the objectives of the economic and social cohesion policy expressed through the CSG and the NSRF of the CR for the period of 2007-2013 in the field of development of innovation potential of the CR and its regions.

2.6 Strategic Environmental Impact Assessment

Pursuant to Act No. 100/2001 Coll. on environmental impact assessment, as amended (hereinafter referred to as "Environmental Impact Assessment Act"), which complies with Directive No. 2001/42/EC of the European Parliament and of the Council[31] on the assessment of the effects of certain plans and programmes on the environment, an expertise has been conducted as to the impact of the R&DI OP on the environment.

According to the expert opinion of the Ministry of the Environment,[32] the content of the R&DI OP is not subject to Section 10a of the Environmental Impact Assessment Act, and therefore the programme does not have to be assessed from the aspect of its environmental impact. Considering this opinion, no SEA evaluation was conducted.

2.7 Application of the Principle of Partnership

The principle of partnership was applied in accordance with the General Regulation during preparation of the R&DI OP. A large working party, comprising representatives of the respective state administration bodies and economic and social partners (hereinafter referred to as "Working Party") was established.

Besides the Managing Authority, the Working Party also comprised representatives from universities, research facilities, other branches, all regions[33] and relevant economic and social entities (e.g. trade unions, the Economic Chamber, the CR Industry and Transport Union, the Association of Non-governmental and Non-profit Organizations, and the Union of Towns and Municipalities).

The Working Party participated in preparation of the R&DI OP, regularly discussed and made comments and suggestions on the working versions of the document, and checked and approved the outputs of the R&DI OP author. The discussions within the Working Party have resulted in the presented R&DI OP.

---

[31] Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001, on the assessment of the effects of certain plans and programmes on the environment.

[32] Opinion of the Ministry of the Environment of 21 February 2006

[33] At NUTS II level.

The principle of partnership will continue to be applied during the implementation, monitoring and evaluation of the R&DI OP.

2.8 Horizontal Themes of the R&DI OP

2.8.1 Equal opportunities

The principle of equal opportunities was respected in all priority axes during the preparation of the R&DI OP. Projects will be assessed with regard to ensuring an equal approach to the opportunities offered. The target solution is to support projects that will help eliminate barriers that prevent the target groups from participating in projects and are related with discrimination on the grounds of gender, race and ethic origin, handicap, age, religion or sexual orientation.

Within the application of the principle of equal opportunities, special attention shall be paid to the position of women. The position of women on the labour market is currently usually characterized by lower wages, a lower number of women in leading positions, and the ongoing feminization of certain branches.

2.8.2 Sustainable development

The basic value framework of the proposed R&DI OP strategy is sustainable development in all its dimensions, i.e. economic, social and environmental. The R&DI OP has been compiled so as to ultimately fuel the economic growth of the CR and to strengthen its competitiveness in a significant manner. The Programme will also have a direct positive impact on the social area as it will lead to a strengthening of the employment rate in the field of R&D by creating specialized jobs for qualified workers.

The environmental dimension of sustainable development will indirectly be fulfilled by launching cutting-edge technologies that are environmentally friendly. The principle of sustainable development will be respected during project selection. One of the seven priorities of R&D in the CR is the LBRDD – Sustainable development. With respect to the R&DI OP orientation to R&D priorities (see Chapter 3) its implementation will become a significant impetus for sustainable development in the CR. A specific description of this area will be provided in the implementing document to the R&DI OP.

3. Priority Axes, Intervention Areas, and Indicators

The SWOT analysis shows that on one hand there are quality workers and research teams able to hold their own in the face of international competition, but on the other hand that the respective workers, teams and institutions have insufficient material equipment and instrumentation, and in particular abilities enabling the transfer of R&D results into practical utilization.

The selected priority axes respond to the principal deficiencies of R&D in the Czech Republic and lead to the attainment of the R&DI OP global objective. The first of these priority axes will promote the building of R&D capacities in regions oriented to targeted (non-technical) research that will lead not only to an increase in the number of R&D workers in the CR but also to the improvement of their professional and age structure and to the incorporation of R&D capacities into the European Research Area (hereinafter referred to as "ERA"). It will also increase regional competitiveness. In relation to the implementation of the OP in Czech aid regions, there will be an increase in the concentration of R&D in individual regions and a partial equalization of current differences. The increased standard of R&D will kindle interest in the transfer of knowledge and technology among national and international companies.

The next priority axis offers direct instruments to support the cooperation of the public sector and the private sector in R&D. Emphasis will be placed on both a purpose-specific increase in capacities, including equipment for technically oriented research, and on support for commercial utilization of the research and development results, including establishment of new technologically oriented companies (also spin-offs) at universities and research institutions, and on selling the intellectual property licences in the public R&D sector. Successful implementation of the whole OP is also conditioned by a good mutual awareness of the R&D facilities and their potential partners and, last but not least, by the development of system (agency) support for utilization of the R&D results.

The third priority axis is focused on the development of capacities within higher education, which represents one of the main barriers preventing research and development, innovations, competitiveness and employment in the CR. This will cover a targeted development of capacities in the branches that are focused on the first two priority axes.

3.1 Priority axis 1 – R&D Capacity Development

The SWOT analysis of the current social and economic situation in the field of R&D has revealed an insufficient level of equipment at R&D facilities, and a mediocrity of the results being achieved in most R&D branches on a global scale. There is also a trend evident in R&D consisting in the need to build more and more demanding facilities as to their material and organizational background without which it will not be possible to keep pace with the development in the world, including the maintenance of competitiveness and social stability.

It is the existence of well-equipped and efficient teams in appropriately selected areas of R&D that is a fundamental prerequisite for the attractiveness of the region concerned for investors and their support for R&D[34].

The objective of Priority axis 1 is to ensure a continuous and permanent creation of research knowledge in regions, which can be used for sustainable development of the economy, and its fast and effective distribution at all levels. To achieve this priority axis objective, the growth potential must be exploited, particularly for a well-considered and targeted building of capacities in research and development at regional, national and European levels.

Within the solution of this priority axis, primarily during the development of poles of excellence, research priorities shall be strengthened, particularly in the long-term basic research directions (LBRDD) approved by the Government of the CR. In the Czech Republic these are currently the following:

1. Sustainable development,
2. Molecular biology,
3. Energy sources,
4. Material research,
5. Competitive mechanical engineering,
6. Informational society,
7. Security research and
8. Social science research.

The specific objectives of Priority axis 1 are:

1. Strengthening the capacities of research and development in CR regions by building a network of research facilities to increase the supply of these institutions and their integration into an innovative process assisting in an increase in the level of CR regions.
2. Developing the poles of excellence as top European centres engaged in the long-term development of certain branches (LBRDD), and their incorporation into the European Research Area.
3. Ensuring the smooth and constant creation of targeted research knowledge in selected research priorities[35] so as to be exploitable for sustainable development of the economies of regions and ensuring their fast and efficient growth.

The specific objectives of Priority axis 1 are based on the possibilities of input and output parameters of supported projects listed below:

As to 1. – on input, a great difference in R&D capacities among regions, measured by the expenditure on R&D; the output will show itself as a considerable increase in R&D performance in regions with the least developed research and development;

---

[34] See the conclusions of the 'Evaluating and Comparing the Innovation Performance of the United States and the European Union' expert study, drawn up for the purposes of the European Commission by Giovanni Dosi, Patrick Llerena, Mauro Sylos Labini, 29 June 2005.

[35] Primarily in LBRDD 1. Sustainable development, 2. Molecular biology, 6. Informational society, and 7. Security research.

As to 2. – on input, the possibility of establishing a pole of excellence with results in an international context, including their applicability, and the need to secure the further investment-based technical and organizational equipping of such a centre; the output will be the development of the relevant centre's R&D and its involvement in international cooperation;

As to 3. – on input, the existence of a research facility with applicable results of the targeted research, and the need to increase the quality of technical and organizational background; the output will show itself as an increase in results to be exploitable for sustainable development of the economies of regions, and ensuring their fast and effective growth.

The cases as above determine the necessary instruments to achieve the set objectives and, therefore, three areas of intervention have been formulated for this priority axis.

1.1 Development of a network of research facilities in regions with development potential.

1.2 Development of top European poles of excellence for ERA.

1.3 Development of capacities of targeted research and development in regions.

Priority axis 1 will fully be financed from public funds, i.e. 85% from the ERDF and 15% from funds provided by the CR national budget. For the 2007-2013 period, 46.9% of total expenditure on R&DI OP (from EUR 2,070,680,884) will be allocated for this priority axis, i.e. EUR 971,191,034 altogether. Within Priority axis 1, 10% flexibility will be used for the actions that fall within the ESF and are necessary for and directly related to the successful implementation of the operation (e.g. increasing the adaptability and ensuring the mobility of workers for these capacities, defining the future job and qualification requirements and the development of specific services for such capacities, etc.).

The target groups of beneficiaries of interventions under Priority axis 1 are, in particular: public universities, state universities, private universities, public research institutions (institutes of the Czech Republic Academy of Sciences, and a part of departmental research institutes), departmental research institutes, non-profit organizations and legal entities established by them, and other entities complying with the Community Framework for Public Aid for Research, Development and Innovations (i.e. all “non-profit research organizations” according to section 2.2. d) of the Framework).

This priority axis will be implemented through individual projects and large projects (with total costs per project of more than EUR 50 million).

Result and output indicators are set for Priority axis 1 for monitoring and evaluation purposes (see Table 3.1-1). These indicators express the quantification of the direct and immediate impact of the intervention on users (the result type) and information on the effects of individual intervention areas within the programme (the output type).

Table 3.1–1: Result and output indicators for Priority axis 1 - Research and development capacity development

Description	Type	Indicator	Unit of measurement	Baseline data (2004)	Target	Source
Priority axis 1	Impact	Number of new R&D jobs	Number	0	2,365	R&DI OP monitoring system
		Increase in the expenditure on R&D/year	EUR mil	0	215	R&DI OP monitoring system
		- Of which: Increase in the expenditure on R&D of beneficiaries from EU FP/year	EUR mil	0	40.5	R&DI OP monitoring system
		Total increase in R&D knowledge	Number	0	4,750	R&DI, R&D IS OP monitoring system
		- Of which: Increase in the number of CR publications on Web of Science/year	Number	0	2,750	Thomson ISI® NSI
	Result	Capacities built and reconstructed	m^2	0	250,000	R&DI OP monitoring system
	Output	Number of projects	Number	0	100	R&DI OP monitoring system

3.1.1 Intervention Area 1.1 – Development of a network of research facilities in regions with development potential

Focus and justification of the Intervention Area

This intervention area responds to the consequences of the long-term underfinancing of R&D in the CR and the related low level of technical and organizational background of facilities and outdated general infrastructure for R&D despite of the high concentration of quality teams with internationally recognized results in R&D in some regions of the CR. The intervention is focused on the building of a network of facilities to be based on human resources and know-how provided by a parent institution from another region or microregion, and on related growth in the performance and development of the regions.

Objective of the Intervention Area

The objective of intervention area 1.1 is to strengthen R&D capacities and know-how based on the building of remote facilities so that the conditions for fast and efficient utilization of R&D results can be created in other regions.

Operation type

Individual projects, or large projects.

Form of aid

Grants of up to 100% to be provided from public resources (85% from Community resources and the remaining part from national resources) according to the Community regulations.

Implementing body

The Managing Authority for this area of intervention is the Ministry of Education, Youth and Sports. The intermediate body is a directly controlled organization of the Ministry of Education, Youth and Sports.

Beneficiaries

In particular, public universities, state universities, private universities, public research institutions (institutes of the CR Academy of Sciences, a part of departmental research institutes), departmental research institutes, non-profit organizations and legal entities established by them, and other entities complying with the Community Framework for Public Aid for Research, Development and Innovations (i.e. all "non-profit research organizations" according to section 2.2. d) of the Framework).

Operational objectives

- Reconstruction and expansion of capacity – activities aimed at the renewal of research and development laboratories and at equipping them with modern instruments.
- Construction of new capacity – activities aimed at building new research and development laboratories, and new institutes or institutions, including the construction of new premises and equipping them with modern instruments.
- Support of further activities aimed at achieving the operational objectives of the intervention area.

Indicators

The indicators describe an increase in R&D capacities in aid regions and their contribution to growth, competitiveness and employment in the regions:

- Number of new jobs in R&D.
- Increase in total expenditure on R&D/year.
- Increase in R&D knowledge/year to be exploitable for growth, competitiveness and employment in regions (patents, new methods, procedures, technologies, etc) within three years after having completed the project.
- Number of new publications on Web of Science/year within three years after having completed the project.
- Capacities (in square metres of area) of newly built, reconstructed and extended laboratories, facilities, etc.

Conditions

- Know-how shall be provided by the parent institution and used by a remote facility in another region or microregion.
- A long-term project of R&D development and incorporation into the innovation process, preferentially in LBRDD (projects covering the LBRDD issues will be given priority during ex-ante evaluation).
- A benefit for development of the region.
- A proven functional system of technology and knowledge transfer.

- A proven method of financing the operation and staffing of these capacities after completion of the project (construction).

Impact

Establishment of new R&D facilities as poles of research and innovations in regions with less developed research using know-how provided by parent institutions.

3.1.2 Intervention Area 1.2 – Development of poles of excellence for incorporation into ERA

Focus and justification of the Intervention Area

Recently, well-composed teams with a clearly profiled professional orientation, pronounced incorporation into the ERA and demonstrable interest in the application of results have been formed in regions with approved aid. To maintain and further develop their position in a European context, the teams will need to be equipped with materials and instrumentation.

Objective of the Intervention Area

Development of poles of excellence as top centres engaged in the long-term development of priority branches (LBRDD), and their incorporation into the European Research Area.

Operation type

Large projects.

Form of aid

Grants up to 100% to be provided from public resources (85% from Community resources and the remaining part from national resources) according to the Community rules.

Implementing body

The Managing Authority for this intervention area is the Ministry of Education, Youth and Sports. The intermediate body is a directly controlled organization of the Ministry of Education, Youth and Sports.

Beneficiaries

In particular, public research institutions, public universities and legal entities established by them, complying with the Community Framework for Public Aid for Research, Development and Innovations.

Operational objectives

- Construction, reconstruction and expansion of the capacity of poles of excellence – activities aimed at establishing and reconstructing or expanding existing poles of excellence in applied research and at equipping them with modern instruments.
- Support of further activities aimed at achieving the operational objectives of the intervention area.

Indicators

The indicators reflect an increase in top-class R&D capacities in aid regions and their contribution to growth, competitiveness and employment, and incorporation into the European Research Area:

- Number of new R&D jobs.
- Increase in total expenditure on R&D/year.
- Increase in expenditure on R&D/year from EU FP and other forms of ERA aid.

- Increase in R&D knowledge/year that can be used for growth, competitiveness and employment in regions (patents, new methods, procedures, technologies, etc) within three years after having completed the project.
- Number of new publications on Web of Science/year within three years after having completed the project.
- Capacities (in square metres of area) of newly built, reconstructed and extended laboratories, facilities, etc.

Conditions

- A proven benefit for cooperation in the European Research Area at a global level.
- High professional level of R&D on an international scale as for the priority direction (LBRDD).
- A long-term project of development of R&D.
- A project for a long-term use of capacities leading to the incorporation of these capacities into the ERA.
- A benefit for the development of regions.
- A proven method for financing the operation and staffing of these capacities after completion of the project (construction).
- Minimum project size: EUR 50 million.

Impact

Establishment of several top poles engaged in the development of priority research branches, and their incorporation into the European Research Area.

3.1.3 Intervention Area 1.3 – Development of capacities of targeted R&D in regions

Focus and justification of the Intervention Area

This intervention area responds to the consequences of the long-term underfinancing of R&D in the CR and the related low level of technical and organizational background of facilities and the outdated general infrastructure for R&D. In the Czech Republic, the sphere of R&D application has been underrated for a long time. Therefore, conditions must be created for an increase in capacities for targeted R&D (in the health service, agriculture, environment, security, research for public administration, etc.), and thus to promote a growth in applicable results that can be used for the sustainable development of the economies of regions and ensure their fast and efficient growth. This intervention area covers non-technical (non-industrial) research branches.

Objective of the Intervention Area

To ensure the smooth and constant creation of targeted research knowledge that can be used for innovations in regions, and to ensure its fast and efficient growth.

Operation type

Individual projects or large projects.

Form of aid

Grants up to 100% to be provided from public resources (85% from Community resources and the remaining part from national resources) according to the Community Rules.

Implementing body

The Managing Authority for this intervention area is the Ministry of Education, Youth and Sports. The intermediate body is a directly controlled organization of the Ministry of Education, Youth and Sports.

Beneficiaries

In particular, public universities, state universities, private universities, public research institutions (institutes of the CR Academy of Sciences, a part of departmental research institutes), departmental research institutes, non-profit organizations and legal entities established by them, and other entities complying with the Community Framework for Public Aid for Research, Development and Innovations (i.e. all "non-profit research organizations" according to section 2.2. d) of the Framework).

Operational objectives

- Construction, reconstruction and extension of R&D capacities and equipping them with modern instrumentation.
- Support of further activities aimed at achieving the operational objectives of the intervention area.

Indicators

The indicators are a measure of increased R&D capacities in regions with approved aid, and of their contribution to the growth in competitiveness and employment in the regions concerned:

- Number of new R&D jobs.
- Increase in total expenditure on R&D/year.
- Increase in expenditure on R&D/year from the EU FP and other forms of ERA aid.
- Increase in R&D knowledge/year that can be used for growth, competitiveness and employment in regions (patents, new methods, procedures, technologies, etc) within three years after having completed the project.
- Number of new publications on Web of Science/year within three years after having completed the project.
- Capacities (in square metres of area) of newly built, reconstructed and extended laboratories, facilities, etc.

Conditions

- A proven functional system of technology and knowledge transfer to innovations in the health service, agriculture, environment, security, research for public administration, etc.
- A benefit for the development of regions.
- A long-term project of R&D development and incorporation into an innovation process, preferentially in the non-technical LBRDD (projects covering the LBRDD issues will be given preference during the ex-ante evaluation).
- A proven method of financing the operation and staffing of these capacities after completion of the project (construction).

Impact

Establishment or modernization of R&D facilities as poles of research and innovations in regions to be target-focused on innovations in selected branches.

3.2 Priority axis 2 – Development of Capacities for Cooperation between the Public and Private Sectors in Research and Development

The SWOT analysis of the current social and economic situation in the field of R&DI has referred to several significant problems related to cooperation between the public sector and the private sector. The insufficient equipment of the applied research facilities and the lack of facilities with effectively working systems for the transfer of R&D results when compared to the EU-15 countries prevent the effective utilization of R&D results, including establishment of technologically oriented companies (also spin-off companies) at universities and research institutions. Opportunities for improvement also exist in communicating the information on R&D results and the possibilities of their utilization, both for professionals and the general public, and last but not least, in the development of a system (agency) framework of support for the utilization of R&D results.

A summary of the problems connected with the transfer of knowledge and technologies from the public R&D sphere to the field of practical application has referred to three basic directions requiring support in the period to come. The first of them is the stimulation of development in areas where both the exceptional performance in technical branches and the interest in the direct takeover of results for practical application are available. However, an obstacle hindering the actual establishment of cooperation with strong industrial partners is the lack of facilities with quality material equipment and instrumentation. Another direction is the direct support of processes in the public R&D sector leading to the efficient utilization of R&D results, e.g. the establishment of spin-off companies at universities and research institutions, and to the protection of intellectual property as a condition for commercialization of R&D results. At the same time, a targeted and coordinated system of transferring the information on R&D and its results between the public sector and the private sector must be established, including the development of a system (agency) framework of support for the utilization of R&D results.

The objective of Priority axis 2 is to promote continuous and efficient cooperation between public research/university institutions and other institutions and between enterprises, leading to the transfer of R&D knowledge to users. To this end, progressive forms of aid that have proven their worth in other countries will be used, e.g. the development of capacities for technical cooperation, support for the establishment of technologically oriented companies (including spin-offs) at universities and research institutions, support of targeted awareness of information on the results of research and development for innovations, and the development of a system (agency) framework of support for the utilization of R&D results.

The specific objectives of Priority axis 2 are as follows:

1. Ensuring conditions for the continuous and permanent creation of targeted research knowledge in technical branches[36] to be used for sustainable development of the economy in regions and ensuring their fast and efficient growth.
2. Fostering conditions for the protection of intellectual property in research/university institutions to create an environment (laboratories etc.) for their students, workers and teams leading to the establishment of technologically oriented companies[37] (including spin-off companies), long-term cooperation with them, and sale of intellectual property licences.
3. Ensuring the mutual exchange of targeted information between the public sector and the private sector concerning R&D, its results and possibilities of their utilization, spreading of the information to the public, and the development of a system (agency) framework of support for the utilization of R&D results.

Priority axis 2 will be implemented through the following areas of intervention:

2.1. Development of capacities for technical research in regions.

2.2. Protection of intellectual property at universities and in research institutions.

2.3. Increase in the targeted spreading of information on R&D and its results for innovations.

Priority axis 2 will be fully financed from public resources, i.e. 85% from ERDF resources and 15% from the CR national budget. In the 2007-2013 period, 26.6% of the total allocation for the R&DI OP (of EUR 2,070,680,884), i.e. a total of EUR 550,794,915, will be spent on this priority axis. Within the scope of Priority axis 2, 10% flexibility will be applied to projects that fall within the ESF and that are necessary for and directly associated with the successful implementation of the operation (e.g. increasing the adaptability and ensuring the mobility of workers for these capacities, defining future job and qualification requirements, and development of specific services for these capacities, etc.).

The target groups of beneficiaries in respect of the interventions under Priority axis 2 are, in particular: public universities, state universities, private universities, public research institutions (institutes of the CR Academy of Sciences, a part of departmental research institutes), departmental research institutes, non-profit organizations and legal entities established by them, and other entities complying with the Community Framework for Public Aid for Research, Development and Innovations (i.e. all "non-profit research organizations" according to section 2.2. d of the Framework). For intervention area 2.3, the beneficiary shall be CzechInvest, while, besides the entities listed above, the users shall also include regional and national development agencies, expert scientific societies, trade and industry associations, and other legal entities.

---

[36] Particularly in LBRDD 3. energy sources, 4. material research, and 5. competitive mechanical engineering.

[37] The aid is intended for the creation of conditions in a research institution; after establishment the technologically oriented company will be supported under the EI OP.

The priority axis will be implemented through individual projects, or large projects with total costs per project exceeding EUR 50 million.

Results indicators are set for Priority axis 2 for monitoring and evaluation purposes (see Table 3.2-1). These indicators express the quantification of direct and immediate impacts of the intervention on users (result type) and information on the effects of individual intervention areas within the scope of the programme (output type).

Table 3.2–1: Result and output indicators for Priority axis 2 – Development of capacities for cooperation between the public sector and the private sector in research and development.

Description	Type	Indicator	Unit of measurement	Baseline data (2004)	Target	Source
Priority axis 2	Impact	Number of new jobs in R&D	Number	0	1,350	R&DI OP monitoring system
		Increase in expenditure on R&D/year	EUR (millions)	0	115	R&DI OP monitoring system
		Of which: Increase in expenditure on R&D from private resources/year	EUR (millions)	0	35	R&DI OP monitoring system
		Total increase in applicable R&D knowledge	Number	0	1,500	R&DI OP, R&D IS OP monitoring system
	Result	Capacities built and reconstructed	m^2	0	100,000	R&DI OP monitoring system
	Output	Number of entities using supported services of targeted information on R&D and its results in regions	Number	0	500	Research
		Number of supported projects	Number	0	90	R&DI OP monitoring system

3.2.1 Intervention Area 2.1 – Development of technical research capacities in regions

Focus and justification of the Intervention Area

There are many strong industrial partners in the CR, but the public R&D sector does not have sufficient technical facilities or R&D infrastructure for successful cooperation. Therefore, at the same time an increase in technical preparedness for technically oriented research must be supported. While the support of direct takeover of results for practical application falls within the scope of the EI OP, this intervention area is intended for stimulating the technological development within the public R&D sector, leading to establishment of the actual cooperation with strong industrial partners. The intervention area is designed as a preparatory step for the linked projects within the EI OP. This intention will be taken into account during project selection.

Objective of the Intervention Area

To increase the number of R&D institutions in the public sector with demonstrable participation in extensive and long-term cooperation with business entities regarding specific technologies.

Operation type

Individual projects or large projects.

Form of aid

Grants up to 100% from public resources (85% from Community resources and the remaining part from national resources) according to the Community rules.

Implementing body

The Managing Authority for this intervention area shall be the Ministry of Education, Youth and Sports. The intermediate body shall be CzechInvest.

Beneficiaries

In particular, public universities, state universities, private universities, public research institutions (institutes of the CR Academy of Sciences, a part of departmental research institutes), departmental research institutes, non-profit organizations and legal entities established by them, and other entities complying with the Community Framework for Public Aid for Research, Development and Innovations (i.e. all "non-profit research organizations" according to section 2.2. d of the Framework).

Operational objectives

- Reconstruction and extension of capacities – activities aimed at the renewal of research and development laboratories and at equipping them with modern instrumentation in connection with the future development of new technologies.
- Construction of new capacities – activities aimed at building new research and development laboratories, and new institutes or institutions, including the construction of new premises, and equipping them with modern instrumentation in connection with the future development of new technologies.
- Support for the other activities aimed at achieving the operational objectives of the intervention area.

Indicators

The indicators are a measure of the increase in R&D capacities in aid regions and their contribution to the growth of competitiveness and employment in the respective regions:

- Number of new jobs in R&D.
- Increase in total expenditure on R&D/year.
- Increase in expenditure on R&D for beneficiaries from private resources.
- Increase in R&D knowledge/year that can be used for growth, competitiveness and employment in regions (patents, new methods, procedures, technologies, etc.) within three years after completion of the project.
- Capacities (in square metres of area) of newly built, reconstructed and extended laboratories, facilities, etc.

Conditions

- A long-term project of the development of technically oriented research leading to its incorporation into an innovation process, preferentially in technical LBRDD (projects covering the LBRDD issues will be given preference to during evaluations).
- A proven functional system of technology and knowledge transfer to industrial innovations – cooperation in the research of technologies to be used by more enterprises, or participation in a technological platform.
- A benefit for regional development.
- A proven functional system of technology and knowledge transfer to industrial innovations – cooperation in the research of technologies to be used by more enterprises, or participation in a technological platform.
- Demonstrable results in applied research and development.
- A proven method of financing the operation and staffing the capacities after completion of the project (construction).

Impact

Establishment or modernization of R&D facilities as poles of research in regions target-oriented to technical research leading to their incorporation into the innovation process.

3.2.2 Intervention Area 2.2 – Protection of Intellectual Property at Universities and Research Institutions

Focus and justification of the Intervention Area

Processes leading to the protection and use of intellectual property represent a weakness of the CR. Therefore, one of the forms of aid in this intervention area will be targeted at the protection of intellectual property. Analyses concerning this issue have revealed the key significance of support for the public R&D sector in the utilization of R&D results, e.g. through the establishment of new organizations (spin-offs). That is why the aid is aimed at supporting the public R&D sector prior to the actual establishment of a new legal entity (e.g. a spin-off), but property purchased using public resources cannot be used as pre-seed capital. Further support for technologically oriented companies, or SMEs, is a matter for the EI OP.

Objective of the Intervention Area

To create conditions in research/university institutions that will ensure an environment (laboratories, etc.) for their students, workers and teams leading to the establishment of technologically oriented companies (including spin-off companies) and to the protection of their results enabling the sale of patents, licences and other rights to use the R&D results.

Operation type

Individual projects.

Form of aid

Grants up to 100% from public resources (85% from Community resources and the remaining part from national resources) according to the Community rules.

Implementing body

The Managing Authority for this intervention area shall be the Ministry of Education, Youth and Sports. The intermediate body shall be CzechInvest.

Beneficiaries

In particular, public universities, state universities, private universities, public research institutions (institutes of the CR Academy of Sciences, a part of departmental research institutes), departmental research institutes, non-profit organizations and legal entities established by them, and other entities complying with the Community Framework for Public Aid for Research, Development and Innovations (i.e. all "non-profit research organizations" according to section 2.2. d of the Framework).

Operational objectives

- Construction, reconstruction and extension of R&D capacities in the public sector, leading to the protection of intellectual property and its long-term use.
- Ensuring the protection of intellectual property, including the necessary costs, in accordance with the Community Framework for Public Aid for Research, Development and Innovations.
- Support of the other activities leading to fulfilment of the operational objectives of the intervention area.

Indicators

- Number of new jobs in R&D.
- Increase in total expenditure on R&D/year.
- Increase in R&D expenditure for beneficiaries from private resources.
- Increase in intellectually protected R&D knowledge/year to be used for growth, competitiveness and employment in regions (patents, new methods, procedures, technologies, etc.) within three years after completion of the project.
- Capacities (in square metres of area) of newly built, reconstructed and extended laboratories, facilities, etc.

Conditions

- A long-term project for R&D development and intellectual protection of own R&D results, preferentially in LBRDD (projects covering the LBRDD issues will be given preference to during ex-ante evaluation).
- A benefit for development of the region.

- Demonstrable quality results in applied research and development.
- A proposal of the structure, principles of activities, pre-seed capital (excluding property purchased using public resources), expected results and financing, etc. (a project creating input conditions for the EI OP), or any other method of protection of intellectual property.
- A proven method of financing the operation and staffing of the capacities after completion of the project (construction).

Impact

Establishment or modernization of poles for future utilization of R&D results at universities and other research institutions by establishing technologically oriented companies (including spin-off companies) and selling the patents, licences and other rights to use the R&D results.

3.2.3 Intervention Area 2.3 – Increase in the Targeted Spreading of Information on R&D and its Results for Innovations

Focus and justification of the Intervention Area

The limited transfer of information between the public R&D institutions and the private sphere has been a long-term problem in the CR. The intervention area will be used to provide targeted information for research/university institutions and innovating enterprises. At the same time, it will ensure the mutual exchange of information on R&D and its results, the possibilities of their utilization, and the spreading of information to the public. The aim is to considerably improve the awareness of activities in the field of R&D and its results by having a system established to enable users to have specific and selective access to R&D results, and to provide quality and selective information.

Objective of the Intervention Area

To establish the mutual exchange of targeted information on supply (related to R&D results), to keep the public informed, and to develop a system (agency) framework of support for the utilization of R&D results.

Operation type

Individual project.

Form of aid

Grants up to 100% from public resources (85% from Community resources and the remaining part from national resources).

Implementing body

The Managing Authority for this intervention area shall be the Ministry of Education, Youth and Sports.

Beneficiaries

The beneficiary for Intervention Area 2.3 shall be CzechInvest, while besides the entities listed above (research/university institutions and innovating enterprises) the users shall also include regional and national development agencies, expert scientific societies, trade and industry associations, employees´ unions and other legal entities.

Operational objectives

- Promotion of activities for the selection and spreading of selective information, including related consultancy on the suitable use of such disclosed information.

- Development of a system (agency) framework of support for the utilization of R&D results.
- Support of the other activities aimed at achieving the operational objectives of the intervention area.

Indicators

- Number of entities in regions using supported services of targeted information on R&D results.

Conditions

- Interest of public research institutions, public universities and other research entities and enterprises in the fulfilment of the priority axis objectives.
- Demonstrable ability of the beneficiary to ensure the fulfilment of the project's objectives.

Impact

Establishment of an information and consultancy system providing the necessary data to be tailored to individual entities.

3.3 Priority axis 3 – Reinforcement of University Capacities for Tertiary Education

The objective of Priority axis 3 is to increase university capacities in tertiary education to the required qualitative level; the new capacities will be used for the growth and support of competitiveness and employment in regions.

A specific objective of Priority axis 3 is to increase the capacity of the university educational sector, including its linkage to R&D within the public sector in the region.

Priority axis 3 will be implemented through 'Development of university capacities in tertiary education' Intervention Area.

Priority axis 3 will be fully financed from public resources, including 85% from ERDF resources and 15% from the CR national budget. In the 2007-2013 period, 24.5% of the total allocation for the R&DI OP (of EUR 2,070,680,884), i.e. a total of EUR 507,295,317, will be spent on this priority axis. Within the scope of Priority axis 3, 10% flexibility will be applied to projects that fall within the ESF and that are necessary for and directly associated with the successful implementation of the operation (e.g. increasing the adaptability and ensuring the mobility of workers for these capacities, defining future job and qualification requirements, and development of specific services for these capacities, etc.).

The target groups of beneficiaries in respect of the interventions under Priority axis 3 are, in particular: public universities, state universities, and private universities. The priority axis will be implemented through individual projects or large projects.

Results indicators are set for Priority axis 2 for monitoring and evaluation purposes (see Table 3.3-1). These indicators express the quantification of direct and immediate impacts of the intervention on users (result type) and information on the effects of individual intervention areas within the programme (output type).

Table 3.3–1: Result and output indicators for Priority axis 3 – Reinforcement of university capacities for tertiary education

Description	Type	Indicator	Unit of measurement	Baseline data (2004)	Target	Source
Priority axis 3	Impact	Number of new jobs at universities	Number	0	1,235	R&DI OP monitoring system
		Increase in the number of newly enrolled students of beneficiaries	Number	0	10,000	R&DI OP monitoring system
		Unemployment rate of the graduates of beneficiaries in LBRDD branches	Percentage (%) of unemployed graduates (relative)	100	75	R&DI OP monitoring system
	Result	Capacities built and reconstructed	m^2	0	150,000	R&DI OP monitoring system
	Output	Number of supported projects	Number	0	35	R&DI OP monitoring system

3.3.1 Intervention Area 3.1 – Development of University Capacities in Tertiary Education

Focus and justification of the Intervention Area

The harmonized NRDP and the Access of the Czech Republic to the Action Plan for Europe refer to the necessity of both improving the quality of research and extending the availability of study programmes, especially in the field of natural sciences and technical branches. Therefore, this priority axis is focused on increasing the capacities of universities (e.g. by developing university campuses) in the area of LBRDD that mainly cover natural science and technical branches and can be used for the growth of competitiveness and employment in regions.

Objective of the Intervention Area

To increase the supply of graduates from universities within LBRDD in areas with a significant growth potential, contributing to an increase in the level of regions respecting the society-wide requirements for human resources.

Operation type

Individual projects or large projects.

Form of aid

Grants up to 100% from public resources (85% from Community resources and the remaining part from national resources) according to the Community rules.

Implementing body

The Managing Authority for this intervention area shall be the Ministry of Education, Youth and Sports. The intermediate body shall be an organization directly controlled by the Ministry of Education, Youth and Sports.

Beneficiaries

In particular, public universities, state universities and private universities complying with the Community Framework for Public Aid for Research, Development and Innovations.

Operational objectives

- Construction, reconstruction and extension of capacities to be used for tertiary education.
- Promotion of activities leading to fulfilment of the operational objectives of the intervention area.

Indicators

- Number of new jobs at universities.
- Number of graduates.
- Graduates´ application (unemployment rate of graduates)
- Capacities (square metres of area) of newly built, reconstructed and extended laboratories, facilities, etc.

Conditions

- Focus primarily on the LBRDD study branches in which the regions lack workers engaged in research, development and innovations. At the same time, projects can also be implemented in areas where the existing capacities are not sufficient and where both the demand for and the application of graduates have been proven.
- A prepared long-term project of educational and research activity in the priority direction (according to LBRDD).
- Proven excellent assertion of graduates of the applicant in supported areas of the educational activity.
- A long-term project of R&D development in LBRDD.

Impact

Increase in the supply of university graduates in areas with significant growth potential (LBRDD), contributing to an increase in the level of regions.

3.4 Priority axis 4 – Technical Assistance

In accordance with Council Regulations, the objective of the intervention area within technical assistance is to help improve the quality of the measures being implemented, i.e. to ensure the effective management of the Operational Programme, its promotion, evaluations (including evaluations of the development of R&D and innovations), and the design and implementation of corrective measures using international benchmarking.

The objective of this priority axis is to help improve the quality of the measures being implemented, i.e. to ensure the effective management of the Operational Programme, its promotion, evaluations (including evaluations of the development of a knowledge economy and innovations), and the design and implementation of corrective measures using international benchmarking. This is to provide both the R&DI OP Managing Authority and Intermediate Bodies with sufficient technical assistance to ensure responsible and effective management of the R&DI OP.

The aid under Priority axis 4 is channelled into preparation, monitoring, administrative and technical assistance, evaluations, auditing and controls required for the effective

implementation of the R&DI OP. The following specific items shall be subject to the aid under this priority axis:

- The cost of preparing, selecting, implementing, evaluating and monitoring the R&DI OP;
- The costs connected with meetings of the evaluation committees and the Monitoring Committee of the R&DI OP, including the cost of attendance by external experts;
- The cost of data processing; automated data processing,
- The cost of audits and on-the-spot checks;
- The cost of remunerating employees (including social insurance) who contribute to the preparation, selection, evaluation and monitoring of the programme, audits and controls;
- Financing of the preparation of studies, analyses, strategies and evaluations;
- Financing of seminars, workshops, exchanges of experience and information, promotion and publicity, informative events, the processing of information analyses, the acquisition and installation of computer systems required for management, implementation and monitoring;
- Support for activities intended for coordination and synergy in the framework of the R&DI OP, in particular by evaluating effects by means of international benchmarking;
- Support for activities intended to increase the OP absorption capacity.

Priority axis 4 will be fully financed from public resources, including 85% from ERDF resources and 15% from the CR national budget. In the 2007-2013 period, 2% of the total allocation for the R&DI OP will be spent on this priority axis (out of EUR 2,070,680,884), i.e. a total of EUR 41,399,618. Co-financing from the national budget is ensured through the budget chapter of the Ministry of Education, Youth and Sports.

The target groups of beneficiaries of the interventions under Priority axis 4 are: The Ministry of Education, Youth and Sports as the R&DI OP Managing Authority, and the Intermediate Bodies for individual priority axes.

3.5 Results and Impacts of R&DI OP priority axes

The R&DI OP will result in strengthening the research, development and pro-innovative potential of the CR, ensuring economic growth, competitiveness and creation of jobs in regions.

The impact of R&DI OP priority axes will be an increase in the number of jobs at R&D facilities, and in the number of patents submitted and quality publications issued, along with a general rise in the volume of research projects implemented in the cooperation between the public sector and the private sector. The results of research and development will also be easier to apply in practice, by, for example, establishing spin-off companies. There will also be an improvement in the mutual awareness of both the private and the public R&D sector on the possibilities of mutual cooperation.

Besides an increase in the number of R&D workers, further impacts on R&D will include an improvement in their professional abilities and professional profile, an improvement in the age structure, a major improvement in the international standing of Czech R&D, and a

rise in the contacts established with other countries (projects, joint publications, student exchanges, etc.).

3.6 R&DI OP Indicators

A system of indicators has been set up for the purposes of monitoring and evaluating the R&DI OP. The system is intended for measuring the fulfilment of the overall objectives using quantifiable indicators, which enable the monitoring of R&DI OP implementation and evaluations of its performance with respect to the set goals.

3.6.1 Context indicators

Context indicators provide quantifiable information on the socio-economic situation in the environment in which the objectives of the R&DI OP are implemented. The context indicators express the tendencies of the main macroeconomic indicators and offer a comparison of the CR position in R&DI with EU averages.

Table 2.7.1–1: R&DI OP indicators at the context level

Description	Type	Indicator	Unit of measurement	Baseline data (2004)	Target	Source
Social and economic situation	Context	Total expenditure on R&D as a percentage of GDP	%	1.27		CZSO
		Number of R&D employees per 1,000 employees in the CR	FTE	5.6		CZSO
		Summary Innovation Index (SII)	Value	0.27		EIS[38]

3.6.2 Programme indicators

Programme indicators (impact type indicators) provide quantifiable information on the effect of interventions made in the R&DI OP and quantify the consequences of the programme beyond the scope of immediate effects.

[38] European Innovation Scoreboard

Table 2.7.2–1: R&DI OP indicators at the programme level

Description	Type	Indicator	Unit of measurement	Baseline data (2004)	Target	Source
Global objective	Impact	Jobs in research and development in aid regions – total value (of which women)	FTE	28,726 (8,808)	34,000 (10,000)	CZSO
		Total expenditure on R&D in aid regions/year	EUR (millions)	750	1,100	CZSO
		Number of CR patents/1 million inhabitants/year : a. Industrial Property Office (IPO) b. EPO c. USPTO	Number	as to a. – 28.4 as to b. – 2.2 as to c. – 3.9	as to a. – 50 as to b. – 10 as to c. – 10	as to a. – IPO as to b. – EPO as to c. – USPTO

4. R&DI OP Implementation

The R&DI OP Implementation chapter lays down the implementation framework for the R&DI OP in accordance with the requirements of the General Regulation and Draft Commission Regulation (EC) determining detailed rules for the implementation of Council Regulation (EC) for general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund (hereinafter referred to as "proposal for Implementing Regulation"). The implementation framework is also governed by the relevant national regulations of the Czech Republic.

4.1 Management and Implementation

The management and implementation of the R&DI OP will proceed at three levels and will involve several entities:

a) The Programme's Managing Authority, having the general responsibility for the management and implementation of the R&DI OP, shall be the Ministry of Education, Youth and Sports, Department of EU Affairs.

b) The intermediate bodies shall be organizations directly controlled by the Ministry of Education, Youth and Sports, and CzechInvest, the Investment and Business Development Agency. The Managing Authority shall delegate the performance of certain activities to the intermediate bodies upon a written legal agreement. The intermediate bodies shall be responsible for the operative implementation of the Programme.

c) The Payment Authority and Certifying Body shall be the National Fund Department of the Ministry of Finance.

d) The financial department to be independent of the Payment Authority and Certifying Body shall be the Economics Department of the Ministry of Education, Youth and Sports.

e) The audit body shall be the Central Harmonization Unit of the Ministry of Finance. The audit body shall be responsible for verifying the effective functioning of the management and control system of the R&DI OP.

Supervision of the effectiveness and quality of the aid granted under the R&DI OP will be carried out by the Monitoring Committee, which will also mediate ties with other entities in accordance with the partnership principle.

4.1.1 Managing Authority

The Managing Authority of the R&DI OP shall be the Ministry of Education, Youth and Sports, Department for EU Affairs. The Managing Authority shall be responsible for the effective and correct management of the R&DI OP and its implementation. The responsibilities of the Managing Authority are defined in Article 60 of the General Regulation. The Managing Authority shall, in particular, ensure the following activities:

a) It will be responsible for the preparation and discussion of the Programme and for its submission to the Commission, for ensuring the compliance of the Programme's objectives and priority axes with other operational programmes, the NDP of the Czech Republic, the NSRF and the CSG, and for ensuring an ex-ante evaluation of the Programme by experts;

b) It will provide methodological assistance, i.e. it will arrange for the production of an operational document and other implementing manuals and guidelines that specify measures and operations within the programme in more detail;

c) It will ensure that operations financed under the programme are selected in accordance with the programme criteria and that they comply with the relevant Community regulations and national regulations throughout the implementation period;

d) It will be responsible for checking the delivery of co-financed products and services and the actual release of expenditure on operations reported by the beneficiaries, and their compliance with Community and national regulations (public contracts, State aid, the environment, equal opportunities, etc.);

e) It will ensure the existence of a system for recording and storing accounting records in computerized form for each operation financed under the programme, and for the collection of implementation data required for financial management, monitoring, validation, auditing and evaluation;

f) It will ensure that beneficiaries of the support and other entities involved in the implementation of operations maintain a separate accounting system or the corresponding accounting code for all transactions connected with an operation;

g) It will set procedures to ensure that all documents concerning expenditure and audits required to secure the relevant documentation for auditing (the audit trail) are filed in accordance with the requirements of Article 90 of the Draft General Regulation;

h) It will ensure that the Payment Authority and Certifying Body receives all the necessary information on procedures and validation carried out in connection with expenditure specified in the statement of expenditure for the purposes of certification;

i) It will ensure the implementation of strategic and operational evaluations of the R&DI OP before, during and after the programming period;

j) It will play the role of the Monitoring Committee's secretariat and will provide it with documents facilitating the monitoring of the quality of programme implementation, with consideration for its specific objectives;

k) It will present the Monitoring Committee with documents required for the regular evaluation of progress in achieving the specific programme objectives;

l) Together with the Monitoring Committee, it will conduct programme monitoring based on the indicators specified in the programme and will arrange for the entry of data into the monitoring system;

m) It will be responsible for drawing up an annual and final report on the implementation of the programme, to be presented to the Commission after approval by the Monitoring Committee;

n) It will review the progress made during implementation on an annual basis with a view to improving the implementation of the programme;

o) It will ensure compliance with national and Community policies, especially as regards public procurement, State aid rules, environmental protection and equal opportunities for men and women;

p) It will ensure the fulfilment of obligations concerning awareness and publicity of the programme, i.e. in particular it will be responsible for the provision of information about the R&DI OP and its operations to EU citizens and aid beneficiaries in order to ensure that aid from the Structural Funds is transparent;

q) It will be responsible for corrective measures in the event of any deficiencies;

r) It will provide the Commission with information that will enable the Commission to assess major projects;

s) It will ensure that the Audit Body receives the required documents and materials to perform analytic activities and reporting;

It will prepare estimates of the volume of payment applications for the current and following budget year, and it will submit the data to the Payment Authority and Certifying Body each year by 31 March.

t)

During implementation of the Programme, the Managing Authority will cooperate with the National Coordinating Body. The cooperation will take place primarily in the field of programme reporting, monitoring, evaluation and publicity.

Delegation of the Managing Authority's competencies:

At the same time, it must be pointed out that the Managing Authority may delegate a part of its competencies to the Intermediate Body; however, only one delegation level shall be allowed (the Intermediate Body shall not be allowed to delegate such activities to another entity).

4.1.2 Intermediate bodies

The Managing Authority of the R&DI OP delegates the performance of certain activities leading to the effective implementation of the Programme to intermediate bodies. However, this fact has no influence on the Managing Authority's overall responsibility for the management and implementation of the Programme. The specific division of tasks between the Managing Authority and the intermediate bodies will be subject to subsequent modification.

Intermediate Body for Priority axes 1 and 3

A department of the Ministry of Education, Youth and Sports is commissioned to perform the role of the Intermediate Body of the R&DI OP for the implementation of Priority axis 1 - Development of research and development capacities, and Priority axis 3 – Reinforcement of university capacities for tertiary education. Subsequently it is expected a delegation of this activity to an organization directly controlled by the Ministry of Education, Youth and Sports which will be established for these purposes.

Intermediate Body for Priority axis 2

The Intermediate Body for the implementation a part of Priority axis 2 (intervention areas 2.1 and 2.2) 'Development of capacities for cooperation between the public and private sectors in research and development' shall be CzechInvest. CzechInvest is a state contributory organization that reports to the Czech Republic Ministry of Industry and Trade.

CzechInvest grants aid from public resources to projects focused on the promotion of research, development and innovations; since 2004 it has been acting as an intermediate body for the implementation of the Industry and Enterprise OP. This experience will enable it to successfully act as an intermediate body for the R&DI OP in 2007-2013. CzechInvest's knowledge will also be transferable to and usable for the organization directly controlled by the Ministry of Education, Youth and Sports and acting as the second intermediate body for the R&DI OP.

Tasks of intermediate bodies

a) Upon a written agreement on the delegation of authorities related to the R&DI OP, the intermediate bodies shall, in particular, ensure the selected tasks of the Managing Authority to be explicitly stated in such an agreement.

The intermediate bodies shall establish and, during the implementation of the Programme, maintain an internal control system in accordance with the rules of financial management. The mediating, payment and inspection functions of the intermediate bodies are strictly separated from one another.

4.1.3 Beneficiaries

Beneficiaries of the aid within the scope of the R&DI OP are defined in the Community Framework for Public Aid for Research, Development and Innovations as so-called "non-profit research organizations" according to section 2.2. d, which include the following in particular:

- State contributory organizations,
- The contributory organizations of regional government units,
- Public research institutions,
- Universities,
- Organizational units of the state, organizational units of the Ministry of Defence or the Ministry of the Interior specializing in research and development (including state universities),
- Other legal entities complying with the Community Framework for Public Aid for Research, Development and Innovations (private universities and other entities that reinvest their profit into R&D, etc).
- CzechInvest (for Intervention Area 2.3).

The beneficiaries shall be responsible for ensuring that the proposed and incurred project costs are eligible and that the terms and conditions of the financing agreement issued by the Managing Authority of the R&DI OP are respected during project implementation. The beneficiaries will introduce and, during the implementation of the project, will maintain an internal control system in accordance with the rules of financial management.

The beneficiaries´ obligations shall be specified in detail in the guidelines for beneficiaries. In particular, the beneficiaries shall:

a) Ensure the due implementation of the project in accordance with the financing agreement;
b) Ensure the efficient management of the project and its risks in accordance with issued methodological guidelines and standards for project management;
c) Ensure the preparation of the project input documentation, contracting the public projects in accordance with the applicable regulations, and the implementation of the financing agreement;
d) Validate invoices and their payment to suppliers;
e) Keep a separate accounting system for the project or the corresponding accounting code for all transactions connected with the project;
f) Ensure the implementation and maintenance of an adequate internal control system, including financial control throughout the duration of project implementation;
g) Submit applications for payments using standard forms (to be submitted to the respective Intermediate Body), while demonstrating that the stated costs correspond to the project terms and conditions as contained in the financing agreement; all payment claims shall be documented by confirmed invoices or if that is not possible then by accounting documents having an equal probative value;
h) Maintain project documentation on the progress of the project, which will be a sufficient aid for an audit focused on financial flows;
i) Ensure that the project documents are always available for controls by authorized persons, provide cooperation during controls and audits, and enable the control bodies to enter their premises and grounds;
j) Report immediately all substantial changes and circumstances that have an influence on or are connected with the fulfilment of the financing agreement obligations (to the Intermediate Body);
k) Ensure that an independent financial audit of the project implementation is carried out wherever required by the rules;
l) Fulfil obligations connected with monitoring, i.e. in particular the submission of regular quarterly reports on project implementation;
m) Ensure project publicity.

4.1.4 Payment Authority and Certifying Body, Financial Department

Payment Authority and Certifying Body

The Payment Authority and Certifying Body shall be the National Fund Department of the Ministry of Finance. Within the scope of its activities, the Payment Authority and Certifying Body (hereinafter referred to as "PAC"), does the following in particular:

a) Manages resources provided from the SF and CF in accounts opened at the CNB;
b) Draws up and submits applications for interim payments and final payments to the European Commission for all programmes based on statements of expenditure presented by the Managing Authorities;

c) Receives payments from the European Commission;
d) Based on a check of summary applications submitted by the financial departments of the individual chapters, transfers SF and CF resources to budget chapters;
e) Records accounting cases related to PAC resources in the scope of the Ministry of Finance as the accounting entity;
f) Maintains a system of financial reporting for PAC resources;
g) Certifies expenditure released and prepares a certificate of expenditure, which it sends to the European Commission together with a request for an interim payment or final payment;
h) For the purposes of certification, examines the due functioning of the management and control system at all levels of implementation;
i) Conducts on-the-spot checks;
j) Draws up and updates methodological guidelines for the certification of SF and CF expenditure and for financial flows and the control of SF and CF resources;
k) Refunds expenditure paid out without authorization, including interest, to the European Commission, unless a decision is made in accordance with Community rules on the reallocation of such expenditure within the scope of the programme in which the unauthorized drawdown of resources occurred;
l) Refunds unused resources to the European Commission;
m) Based on estimates drawn up by managing authorities, submits updated estimates related to payment requests (expenditure perspectives) to the European Commission for the current year and the subsequent year by 30 April;
n) Proceeds in accordance with the rules of financial management and control;
o) Responds to comments and recommendations of the European Commission;
p) Is responsible for the concept and methodology applied in the development of the VIOLA SF/CF IS for the performance of the PAC's role, including data communication with the SF monitoring system;
q) Evaluates the drawdown of SF and CF allocations, and monitors the implementation of the n+3 rule.

Financial Department

The Economic Department of the Ministry of Education, Youth and Sports shall act as financial department of budget chapter, and will be independent of PAC. The Financial Department for R&DI OP shall functionally and organizationally be independent of the managing and controlling functions of the Managing Authority.

In particular, the Financial Department shall:

a) Accept payment requests from beneficiaries (authorized by the competent Intermediate Body) and record them in the accounting information system;
b) Conduct an ex-ante check of payment requests, which particularly includes:
    - A formal check of the payment requests;
    - Ensuring the compliance of the requests with the financial plan and with sources of national co-financing; if the Financial Department of the Managing Authority identifies that the plan has been exceeded or that there

has been a failure to secure the co-financing of the Czech part, it will not make the transfer and will notify the Intermediate Body of this fact;

c) Upon approval of payment request by the Managing Authority, make payments from the national budget through the budget chapter of the Ministry of Education, Youth and Sports to beneficiaries;

d) File all accounting and supporting documentation related to its activities over the period defined by Community and national regulations;

e) Send summary statements of made payments to the beneficiaries, PAC and the monitoring system;

f) Draw up information on amounts paid unjustifiably or incorrectly, and present such information to the PAC.

Within their activities, the PAC and the Financial Department shall observe the Methodology of Financial Flows and Controls of the Programmes to be Co-financed from the SF/CF/EFF for the 2007-2013 Programme Period (hereinafter referred to as "Methodology of Financial Flows"). The PAC and the Financial Department shall establish and, during the implementation of the Programme, maintain an internal control system in accordance with the rules of financial management.

The Financial Department shall accounts in electronic form on all transactions concerning the administration of financial resources for the OP in the accounting system of the Ministry of Education, Youth and Sports. The accounting records shall be adequately protected to prevent their potential misuse. This provision applies both to the security of the relevant software and to the physical protection of written records.

4.1.5 Audit Body

The Audit Body is established in the sense of Article 59 of Council Regulation (EC) No. 1083/2006. The Ministry of Finance is commissioned with the performance of the audit body by Government Resolution No. 198/2006 of 22 February 2006. The Managing Authority is responsible for ensuring conditions for performing audit and controls at all implementation levels, and ensuring that the audit reports are passed to the central audit body from all implementation levels. A uniform approach to audit at all implementation levels and the reporting of audit findings facilitate risk management at the Managing Authority level.

Internal Audit

This level of audit is ensured by the unit of the Ministry of Education, Youth and Sports commissioned to perform internal audit according to Act No. 320/2001 Coll. The main task of the internal audit is namely to review the activities of the managing and control system of the operational programme.

Reports from internal audits made at individual implementation levels are submitted to the relevant chief public administration body, National Coordinating Body, Monitoring Committee and Managing Authority.

The internal audit also performs the function of the Intermediate Body of the Audit Body and ensures insertion of discrepancy data into AFCOS (Anti-Fraud Coordinating Structure).

External Audit

These are audits performed by authorised entities beyond the implementation structure of the operational programme and beyond the competence of the internal audit. The external audit can be performed by Central audit bodies, i.e. for instance the Central Harmonization Unit, Supreme Audit Office, EU bodies (European Commission, European Court of Auditors, OLAF), etc. Czech Republic Government Resolution No. 198 of 22 February 2006 commissioned the Ministry of Finance with the function of audit body (in the sense of an entity beyond the implementation structure). The Minister for Finance made a decision to entrust this function to the Central Harmonization Unit for Financial Control, which is functionally independent of the Managing Authority and the Payment Authority and Certifying Body.

Reports from external audits performed at individual implementation levels are submitted to the European Commission, the relevant chief public administration body, the National Coordinating Body, the Monitoring Committee and the Managing Authority.

In accordance with the requirements of Article 62 of Council Regulation (EC) No. 1083/2006 and in accordance with Czech regulations, the Audit Body will perform the following activities in particular:

a) It is responsible for auditing the preparedness of the programme's management and control system;
b) Prior to the submission of request for the first payment, and no later than 12 months from approval of the Programme, it shall present the Commission with a report assessing the set-up of management and control systems of the Operational Programme, including a standpoint on their compliance with the relevant provisions of EC regulations;
c) No later than 9 months after approval of the Operational Programme, it shall present the Commission with an audit strategy; a method of sample selection for operations auditing and informative audit planning to ensure that the main entities are audited and that the audits are uniformly distributed over the whole programme period;
d) It is responsible for conducting audits in public administration with a view to verifying the effective functioning of the programme's management and control system;
e) It shall present the Commission with an updated audit strategy every year;
f) It shall present the Commission with a consolidated plan for the auditing of resources granted from EU funds every year;
g) It shall conduct quarterly checks of the implementation of the consolidated audit plan and shall provide information about this implementation to the Payment Authority and Certifying Body;
h) It shall present an audit strategy, a method of sample selection for operations auditing and informative audit planning to ensure that the main entities are audited and that the audits are uniformly distributed over the whole programme period;
i) It is responsible for conducting public administration audits on a suitable sample of operations to verify the expenditure reported to the European Commission;
j) It shall ensure the methodological management of other audit entities involved in audits related to the public administration of the Operational Programme;
k) It shall supervise the quality of audits in public administration to be conducted by other audit entities for the projects co-financed from the SF;

l) It shall contribute to the creation and updating of the methodological guidelines for auditing in the public administration of resources from the Operational Programme;
m) Every year in the period from 2008 to 2015 it shall present the Commission with an annual audit report containing its findings from audits conducted during the previous year in accordance with the Operational Programme's audit strategy, along with deficiencies identified in the Programme's management and control systems. Information on audits to be conducted after 1 June 2015 shall be included in the final audit report, which is the basis for the conclusion declaration;
n) Every year it shall issue an opinion to the Commission on whether the functioning of the management and control system provides a reasonable guarantee that the statements of expenditure submitted to the Commission are correct and that the related transactions are proper and legal;
o) It shall present a declaration on partial conclusion, assessing the legality and regularity of the concerned expenditure in accordance with Article 88 of the General Regulation;
p) By 3 March 2017, it shall present the Commission with a conclusion declaration, in which it shall assess the validity of the request for the final payment and the validity and regularity of the related transactions included in the final statement of expenditure;
q) It shall ensure that internationally acknowledged auditing standards are taken into consideration during auditing activities;
r) It shall conduct analyses of reported irregularities in order to draw up a conclusion declaration or a declaration on partial conclusion;
s) It shall draw up an annual report on the results of financial checks under the Operational Programme for the Czech Government.
t) It shall participate in audit missions of the European Commission to review aspects of the management and control system having arisen out of the annual audit report;
u) It shall cooperate with the Commission in coordinating the audit plans and audit methods, and it shall exchange the results on the conducted audits with it;
v) It shall ensure that the Managing Authority and the PAC receive the results of all audits carried out by the Audit Body or in its charge for purposes of certification.

The Audit Body shall be responsible for ensuring the activities stated above; nevertheless, it may authorize other entities to perform selected activities, provided that its own responsibility for them remains untouched. Only one authorization level to perform the activities stated above shall be allowed, i.e. the intermediate body shall not authorize any other entity based on an agreement governed by public law in accordance with the Administrative Procedural Rules.

4.2 Project Selection

The Managing Authority shall be responsible for a transparent, objective and efficient process of project selection so as to guarantee the quality of the projects implemented, and thus the quality of the R&DI OP. For the purpose of project selection, the Managing Authority shall arrange for the preparation of methodological guidelines laying down rules to be binding on all entities participating in the selection of projects. Also for the purpose of project selection, the Managing Authority may appoint evaluation commissions composed of independent experts who, in accordance with the methodological guidelines, will evaluate the most suitable projects and recommend them for financing.

Workers involved in the management of the Programme and in the selection of projects shall evaluate project applications separately from other departments of the Ministry of Education, Youth and Sports and Intermediate Bodies. In order to prevent any conflict of interests and to ensure that evaluations are clearly separated from the preparation and implementation of projects, neither the Managing Authority, Intermediate Bodies (except for the organizations directly controlled by the Ministry of Education, Youth and Sports and for CzechInvest within Priority axis 4 [Technical Assistance] and except for CzechInvest within Intervention Area 2.3, where these two entities are beneficiaries) nor their workers can submit project applications.

The efficiency of the selection procedures specified below shall be monitored during the course of Programme implementation by the Managing Authority and, if necessary, the processes can be modified based on the experience obtained.

Individual projects under Priority axes 1 to 3

Prior to launching the Programme, the Managing Authority shall arrange for the preparation of detailed guidelines for applicants, which will contain essential information for all intervention areas, including a standard application form and explanations on how to fill it in.

The intermediate bodies will be responsible for providing an information service to applicants and for offering consultations on matters connected with the programme. The intermediate bodies will be responsible for calls for project applications, and will ensure that the calls contain all information required for the submission of applications. Applications will be submitted to the competent intermediate bodies.

The collection and evaluation of projects under Priority axes 1 to 3 (except for large projects exceeding EUR 50 million) shall be delegated to the Intermediate Bodies. The final decision on the grants to be provided shall be made by the authority responsible for the approval of financing agreements based on a recommendation by the Intermediate Bodies. In their activities, the Intermediate Bodies and the authority responsible for the approval of financing agreements shall respect the decisions of the Monitoring Committee, which will consider and approve the project selection criteria for individual intervention areas under the R&DI OP.

The criteria for the evaluation of projects will be set transparently and objectively. Projects will be evaluated in particular from the aspect of the fulfilment of the programme's objectives.

Financing agreements shall be signed by an authorized representative of the authority entrusted with the approval of financing agreements. The function of the authority entrusted with the approval of financing agreements will be separated from that of the other entities involved in the management and implementation of the R&DI OP.

Projects under Priority axis 4

The selection of activities supported under Priority axis 4 (Technical Assistance) shall be in the competence of the Managing Authority, which will define in advance the activity groups to be covered by the intervention areas, and will confirm the costs of technical assistance related with its activities and the activities of Intermediate Bodies. The Intermediate Bodies shall present proposals for technical assistance connected with their activity in the implementation of the R&DI OP. After having been confirmed by the Managing Authority, all payment requests shall be administrated by the Financial Department.

Large projects

The approval of large projects shall be the responsibility of the Commission. The Intermediate Body shall provide the necessary information service for promoters of large projects. The Managing Authority shall be responsible for the submission of large project applications, including all information specified in Article 39 of the General Regulation of the Commission. When making decisions on submitted large projects, the Commission shall proceed in accordance with Article 40.

Before commencing the Programme implementation, the Managing Authority shall arrange for the preparation of guidelines for the promoters of large projects, in which it will specify the information necessary for the submission of large projects.

4.3 Financial Flows

The system of financial flows from the EU budget within the R&DI OP shall be governed by the requirements of the General Regulation and of the proposal for Implementing Regulation and by the Methodology of Financial Flows and Control of Programmes to be Co-financed from the CF/SF/EEF for the 2007-2013 Programme Period (hereinafter referred to as "Methodology of Financial Flows"). All payments in both directions (from and to the EU budget) shall be made in euro. Funds intended for the financing of the R&DI OP shall be allocated by the Commission based on the presented financial plan of the Programme.

The system of financial flows shall be described in the Methodology of Financial Flows and Control of Programmes to be Co-financed from the CF/SF/EEF for the 2007-2013 Programme Period, as published by the Ministry of Finance. The Ministry of Finance shall manage the funds to be provided by the Commission for financing the programmes under the Structural Funds and the Cohesion Fund.

The Commission shall send the resources from the Structural Funds and the Cohesion Fund to the account of the Payment Authority and Certifying Body (PAC). Within the PAC, the finances from the Structural Funds and the Cohesion Fund shall be controlled by the "Department of Methodology of Financial Management and Payments", which will also make transfers of finances from the Structural Funds and the Cohesion Fund to the national budget.

The system of financial flows of resources for the operational programmes shall be ensured through a financial flow via the national budget. The resources from the Structural Funds and the Cohesion Fund shall be pre-financed to beneficiaries, based on their submitted applications, from the national budget. Beneficiaries' applications shall be submitted solely in Czech crowns (CZK). Upon receipt of a summary application, the PAC shall release resources from Structural Funds and the Cohesion Fund to the national budget chapter that provided the pre-financing of resources from the Structural Funds and the Cohesion Fund.

The system of ERDF financial flows shall cover 3 lines:

a) The setting of the EU´s obligation and the sending of an advance payment from the Commission to the PAC;
b) The sending of interim payments and the payment of the final balance from the Commission to the PAC based on applications and certified expenditure;
c) Payments to beneficiaries via the Financial Department.

Advance payments, interim payments and payments of the final balance of resources from the ERDF shall be made in accordance with the General Regulation.

A prerequisite for the sending of an application for interim payments and final payments (see below) to the Commission shall be the certification of expenditure (hereinafter referred to as "Certification") to be carried out by the PAC. The PAC shall not delegate the Certification to other entities. The Certification shall mean an inspection to verify whether the Managing Authority, Intermediate Bodies or any other entities implementing the project have satisfied the requirements arising out of the General Regulation, and whether the statement of expenditure presented by the Managing Authority contains all the pertinences laid down in the Methodology of Financial Flows.

By the end of April of each year, at the latest, the PAC shall present the Commission with an estimate of financial resources for the R&DI OP for the current and subsequent budget year to predict the payments to be made by the Commission. The EU's annual obligations shall be stipulated in the Commission's resolution.

Unused resources and resources provided in contravention of legislation or issued decisions or agreements shall be used again for the Programme or returned to the EU budget. The return of unused and incorrectly used resources shall be carried out by the PAC. The PAC shall also keep records on the amounts returned to the EU budget, and at the same time shall draw up an annual report on returned amounts.

Description of the circulation of financial flows within the R&DI OP

Payments to beneficiaries shall be made in the form of ex-post payments (the reimbursement to beneficiaries of expenditures already made) or in the form of ex-ante payments (i.e. in the form of an advance payment to be made in favour of the beneficiary from the national budget for implementation of the project). Decisions as to the form of payments to be made in favour of beneficiaries within individual operational programmes shall be fully in the competence of the Managing Authority upon an agreement with the administrator of the state budget chapter.

1) Based on expenditure reported,[39] the beneficiary issues a claim for reimbursement from the national budget (corresponding to the European and national share); the application is presented to the Managing Authority or the intermediate body for inspection and approval;
2) The Managing Authority approves the beneficiary's application and instructs the financial department to make the payment to the beneficiary's account;
3) The financial department of the relevant budget chapter makes the payment from the national budget to the beneficiary's account.

4.4 System of Financial Control

[39] In case where beneficiaries receive ex-ante payments the beneficiary presented an overview of expenditure from granted national budget resources as part of claim for reimbursement from the national budget

The Ministry of Finance, as the central administrative authority for financial control in accordance with the relevant provisions of Act No. 2/1969 on the establishment of ministries and other central authorities of state administration of the Czech Republic, as amended, methodically manages, coordinates and is responsible for financial control under the Operational Programme. The basic starting point for the issue of methodological guidelines, consulted with the competent bodies of the European Commission, is the current Czech and Community legislation in force.

Within the control system, the system of public administration control and financial management and control shall clearly be separated from the system of internal audits and audits in public administration.

The financial control system includes:

1. A control in public administration to be carried out as part of financial management,
2. An audit in public administration
3. An internal control system, and
4. A central harmonization of the systems stated in points 1 to 3.

4.4.1 Internal Control System

All bodies involved in the implementation of the Operational Programme shall have a necessary management and control system established that will comply with national legislation, and will be capable of the timely identification of administrative, systematic or intentional errors, and of the creation of such conditions that will prevent the occurrence of errors.

Financial management and control

The financial management and control shall be ensured by responsible managers, and shall form part of the internal management of all entities involved in Operational Programme implementation, during the preparation of operations prior to their approval, during the on-going monitoring of operations until their final settlement, and subsequent verification of selected operations to be made within the evaluation of achieved results and correctness of the financial management.

Taking into consideration the principles of an effective and efficient management and control system during the implementation of the programme, checks will be run to ensure that:

a) All entities involved in the management and control of the programme have clearly set specific functions, both in the scope of the whole implementation system and in the scope of each entity separately;
b) The principle of the separation of payment, management and control functions between the individual entities involved in the implementation of the programme and in the scope of the entities themselves is respected;
c) Clear procedures are set to ensure the correctness and eligibility of expenditure reported in the programme;
d) Reliable accounting systems, monitoring systems and financial reporting systems are implemented;

e) A system is implemented for the submission of reports on the implementation of the programme and projects and on monitoring;
f) Measures are adopted for audits of the way the management and control system functions;
g) Systems are introduced and procedures are set that secure the documentation required for auditing (an audit trail);
h) Procedures are set for reporting and monitoring irregularities and for the recovery of amounts paid without authorization;
i) A system of independent double inspection and double signature is consistently observed when approving individual documents and making payments;
j) Information systems can safely be used;
k) Any potential conflict of interests is consistently prevented;
l) The substitutability of employees in all functions is possible.

For each level of programme management and implementation, an internal control system manual will be drawn up in the form of controlled documentation, which will contain a detailed description of workflow procedure for the activities to be carried out.

If the persons ensuring continuous and subsequent controls find during the performance of their function that the resources from the EU´s budget have been spent in an uneconomical, ineffective or inappropriate manner in contravention of legislation, they shall notify the manager of the respective institution, the Managing Authority and the Audit Body of their findings in writing. The manager of the respective institution shall be obliged to take measures to remedy the deficiencies found, as well as measures to ensure that this control is performed properly.

Internal audit

The Internal Audit Department will be functionally independent and organizationally separate from the managing and executive structures and will be subordinate to the competent head of the public administration authority.

The internal audit shall be established at individual levels of implementation in accordance with Act No. 320/2001 Coll. on financial control in public administration.

Internal Audit Departments will check the internal control system at regular intervals. Their activities will include examinations of the fulfilment of basic requirements placed on the internal control system. A significant element will also be the presentation of recommendations to improve the quality of the internal control system, to prevent or reduce risks, to adopt measures to rectify ascertained deficiencies, and consulting.

Reports of internal audits regularly conducted at individual levels of implementation will be presented to the competent head of the public administration authority. Reports of internal audits at intermediate bodies will be presented to the Managing Authority's Internal Audit Department. A uniform approach to auditing at all levels of implementation and the reporting of audit findings will be the basis for risk management at the level of the Managing Authority.

4.4.2 Controls in Public Administration

Controls in public administration (primary system)

The Managing Authority (hereinafter referred to as "MA") shall be responsible for the management and implementation of the Operational Programme in accordance with the principle of due financial management and, therefore, shall ensure that operations are selected for financing in accordance with the criteria for the Operational Programme and that, throughout the implementation period, comply with the relevant Community and national regulations. The MA shall ensure the execution of control of physical implementation by verifying the delivery of co-financed products and services and actual expenditure on operations as declared by the beneficiaries. The MA shall ensure that a system of electronic recording and filing of accounting records is available for each operation, and shall gather the data required for auditing. In addition, the MA shall ensure that the procedures and all documents concerning expenditure on and audits of the Operational Programme are available to the Commission and to the Court of Auditors for a period of three years after having completed the Operational Programme.

For this purpose, the MA shall carry out administrative verifications in connection with each payment request, and on-the-spot audits of individual operations. The stated on-the-spot audits can be performed based on a selective set of operations in accordance with the mandatory EC regulations.

4.4.3 Audit in Public Administration (Secondary and Central System)

The Audit Body shall be responsible for audits of the public administration at all levels of financial resources to be spent from the Operational Programme in accordance with Act No. 320/2001 Coll. on financial control in public administration, and on amendments to some Acts, as amended by subsequent regulations, and in accordance with the directly applicable regulations of the European Communities. Within the secondary system, it shall verify the effectiveness of the system of financial management and control, and subsequently test the correctness of risk transactions in accordance with the acceptable level of risk for the area of the primary system. Within the central system, the Audit Body shall, based on the residual risk, verify and evaluate the adequacy and effectiveness of the functioning of the primary and secondary system, and execute an audit of a sample of operations.

The Audit Body shall be responsible for ensuring the activities stated above; nevertheless, it may delegate selected activities to other audit entities, provided that its own responsibility for them remains untouched. In the event that the responsibility is delegated to the Ministry of Education, Youth and Sports, the Department of Internal Audit and Controls of the Ministry of Education, Youth and Sports shall act as the audit entity. The audit entity shall mean an entity authorized by the Audit Body to ensure the activities pursuant to Article 62, paragraph 1, section a) or b), or both sections a) and b) of Council Regulation (EC) No. 1083/2006, and Article 61, paragraph 1, section a) or b), or both sections a) and b) of Council Regulation (EC) No. 1198/2006.

4.4.4 Controls by the Supreme Audit Office

The Supreme Audit Office is authorized to carry out independent inspections in accordance with the relevant provisions of Act No. 166/1993 on the Supreme Audit Office, as amended.

4.4.5 Auditing to be carried out by the Commission Bodies and by the European Court of Auditors

The Commission shall satisfy itself in accordance with Article 72, paragraph 1 of Council Regulation (EC) No. 1083/2006 that management and control systems have been set up within the given operational programme and that the systems function effectively. This audit shall be carried out by the Commission on the basis of annual audit reports and the standpoint of the Audit Body and based on its own audits.

The European Court of Auditors, which is competent to conduct autonomous, independent checks in the scope of its activities.

4.4.6 Irregularities

All bodies involved in the implementation of the Operational Programme shall be obliged to report any suspicions of irregularities to the MA. The MA shall investigate these suspicions, and those that are proven as justified upon control findings shall be referred to the competent authorities to initiate administrative or judicial proceedings. The reports by audit bodies shall always be considered as justified. By the fifteenth day of the following month the MA shall also have reported such justified suspicions to entities involved in reporting at an external level.

4.5 Monitoring

Monitoring is a basic instrument in achieving efficient settings and subsequently implementing the R&DI OP and projects realized in the scope of this programme. Monitoring is used to collect data and present summary information on the current stage of the implementation process.

Monitoring of the implementation of the R&DI OP will take place on three levels:

- Financial monitoring, the task of which will be to collect data and information concerning financial expenditure;
- Physical monitoring, which will monitor the physical focus of the project from technical, physical and analytical aspects;
- Procedural monitoring facilitating the real-time monitoring of progress in the implementation of projects.

The Managing Authority of the Programme shall assume the entire responsibility for R&DI OP monitoring. The Managing Authority shall be responsible for proper, efficient, systematic and timely monitoring.

4.5.1 Monitoring Committee

The Monitoring Committee shall be established in accordance with Article 63 of the General Regulation. The Monitoring Committee is to supervise the effectiveness and quality of the aid being provided.

The composition of the Monitoring Committee shall be based on the principle of partnership and equal opportunities. The Monitoring Committee members shall, in particular, be representatives of the Managing Authority and Intermediate Bodies, representatives of the National Coordination Body, representatives of the PAC, representatives of other central administration authorities, (particularly of the Research and Development Council of the Ministry of Industry and Trade to ensure mutual links to the Enterprise and Innovations OP), delegated representatives of the regions, representatives of economic and social partners, including non-profit organizations, and a representative of the Commission in the role of adviser. Representatives of the EIB and EIF[40] will be able to attend meetings of the Monitoring Committee in the role of advisers. Committee members are appointed on the basis of nominations by the competent institutions by the Minister for Education, Youth and Sports. The composition of the Monitoring Committee may be reviewed and expanded to ensure sufficient representation and partnership.

In accordance with Article 65 of the General Regulation, the Monitoring Committee will primarily be responsible for the following tasks connected with the R&DI OP:

a) Assessment and approval of criteria for the selection of projects and the approval of all changes to the criteria;
b) Evaluations of progress in achieving the specific programme objectives;
c) Analysis of the results of programme implementation;
d) Assessment and approval of the annual and final programme reports before they are sent to the Commission;
e) Reviews of the programme with a view to achieving its objectives or improving its management, including financial management and any proposal of changes to the programme;
f) Assessment and approval of all proposals for a change to the content of a Commission decision on a contribution from the ERDF.

The Monitoring Committee shall be established upon suggestion by the R&DI OP Managing Authority. The Monitoring Committee meetings shall be held in accordance with the rules of procedure adopted upon an agreement with the Managing Authority of the operational programme concerned.

---

[40] Representatives only if both institutions are relevant for the R&DI OP.

4.5.2 Monitoring Indicators

Monitoring indicators are based on the need to monitor and evaluate the effectiveness of defined priority axes, intervention areas and projects within the priority axis of the NSRF entitled "Strengthening the competitiveness of the Czech economy", and the R&DI OP.

The system for measuring the fulfilment of the overall objectives of the R&DI OP is created on the principle of setting quantifiable indicators that facilitate the monitoring of programme implementation and evaluations of its performance in relation to the set goals. The indicators are set at four levels:

a) Level of context (see Chapter 2.7.1) – the purpose of the context indicators is to provide quantifiable information on the socio-economic situation in which interventions are made;

b) Level of the whole programme (see Chapter 2.7.2) – impact indicators, which quantify the consequences of the R&DI OP beyond the framework of immediate effects;

c) For the individual priority axes (see Chapters 3.1 and 3.2) – they include (i) result indicators, which express the quantification of direct and immediate impacts of the intervention on users, and (ii) output indicators, which provide information on the effects of individual intervention areas within the Programme;

d) For individual intervention areas (a list of indicators for individual intervention areas is provided in sub-chapters addressing intervention areas and will be discussed in more detail in an operational document).

For a summary of all indicators at the level of context, programme and priority axes refer to Annex 1.

4.5.3 Monitoring System

For the monitoring of the R&DI OP, the Monitoring System of the Community's Structural Funds ("monitoring system") will be used; it will be run by the National Coordinating Body, whose task is to ensure the uniform, summary and central monitoring of aid granted by the Community.

The monitoring system will provide up-to-date information in the form and scope defined by the National Coordinating Body and the PAC. The system will be data-integrated, uniform, and will be used by all R&DI OP implementing entities. The monitoring system will comply with the requirements placed on the safety of stored data.

The monitoring system will ensure the monitoring of the following activities:

- Drawdown of resources from the Structural Funds,
- Drawdown of resources in the scope of national co-financing,
- Monitoring, evaluation and control,
- Communication with the Commission and the provision of data in the Commission's monitoring table,
- Monitoring of information at the level of the beneficiary,
- Connections to the relevant systems of state administration,
- Fulfilment of monitoring indicators.

The monitoring system will encompass three modules:

1. A central module, the task of which is to ensure the monitoring, planning, procedure and evaluation of the R&DI OP from physical, financial and procedural aspects; the central module will be capable of providing data in line with the Commission's requirements; it is connected to the PAC system and facilitates the exchange of all relevant information between other information systems – VIOLA (the management and accounting system for Community resources), ISPROFIN (the programme financing information system), CEDR (the central register of budget grants) and the R&D IS (research and development information system).
2. An executive module for the purposes of monitoring the R&DI OP, which ensures the effective activities in the preparation and management of the programme, in particular the selection of projects, the record-keeping of projects, monitoring and evaluations from the physical and financial aspect at project level, and reporting. It is installed and operated by intermediate bodies.
3. An information module for financial aid applicants under the R&DI OP, which facilitates the sending of project applications and completion of prepared project applications; the information module is connected directly to the executive and central module of the monitoring system; the module will also be used for further communication with aid beneficiaries in the implementation of the project (payment requests, reporting).

The monitoring system will permit the public online presentation of part of the results achieved during the implementation of the R&DI OP.

4.5.4 Annual and Final Implementation Report

In accordance with Article 67 of the General Regulation, the Managing Authority (upon approval by the Monitoring Committee) shall send an annual report and a final report on the implementation of the R&DI OP to the Commission. The Managing Authority shall submit the annual reports every year by 30 June, starting from 2008. The final report on the implementation of the R&DI OP shall be submitted to the Commission by 31 March 2017.

All of the annual reports and the final report on the implementation of the R&DI OP will contain information on the following:

- The progress achieved in the implementation of the R&DI OP and Priorities in relation to their specific, verifiable objectives, expressed quantitatively by means of indicators at the level of the relevant priority;
- The financial implementation of the R&DI OP, specifying expenditure included in payment requests sent to the Managing Authority, the corresponding contribution from public resources, the total payments received from the Commission and a quantitative expression of financial indicators;
- An indicative breakdown of allocated financial resources by category, in accordance with the detailed rules of application adopted by the Commission;
- Information about serious problems concerning compliance with the Community's legislation that occur during the implementation of the R&DI OP, and measures adopted to resolve them;

- Any progress made through the implementation and financing of major projects.

  The information below will be contained in reports if there has been a change in their content since the last report submitted:

- Steps that the Managing Authority or the Monitoring Committee have taken to safeguard the quality and effectiveness of the implementation of the R&DI OP, especially measures for the monitoring and evaluation of the programme, and an overview of all serious problems that have occurred in the implementation of the programme, including adopted measures and the use of technical assistance;
- Measures adopted with a view to the provision of information about the R&DI OP and to its publicity;
- Utilization of the aid having been made available to the Managing Authority or another public authority during the implementation of the R&DI OP after the whole contribution for the R&DI OP was cancelled in accordance with Article 98, paragraph 2 of the General Regulation.

Each year, after the annual report has been submitted to the Commission, the Commission jointly with the Managing Authority shall review the progress made in the implementation of the R&DI OP. The most important results achieved in the previous year, financial implementations and other factors shall be subject to the status review (for example, all aspects of the functioning of the management and control system as given in the annual report submitted by the R&DI OP Audit Body can be reviewed). After this review the Commission can make comments to the Managing Authority; the Managing Authority shall subsequently notify the Commission of the measures taken on the basis on such comments.

4.6 Evaluation

The R&DI OP shall be evaluated in accordance with the obligations as laid down in Articles 47 and 49 of Council Regulation (EC) No. 1083/2006, in accordance with the methodological guidelines of the Commission, and in accordance with the methodological guidelines of the National Coordinator. The R&DI OP Managing Authority shall be responsible for ensuring the evaluation; it shall directly ensure the evaluation (it is recommended to make a transparent external evaluation). Evaluations shall be directed at the following:

- To increase the quality and efficiency of the co-financing from the Structural Funds and the Cohesion Fund, and its consistency with the goals of the European Union and of the Czech Republic;
- To improve the strategy and to make the operational programme implementation more effective, i.e. to improve the outputs, results and impacts;
- To review specific structural problems affecting the Czech Republic and sustainable development with respect to the scope of the R&DI OP.

4.6.1 Evaluation Duties

In particular, the R&DI OP evaluation duties shall be as follows:

- Formulating, implementing, updating and evaluating the evaluation plan (in relation to the evaluation plan for the Czech Republic as prepared by the National Coordinator);
- Ensuring all main evaluations according to the specification given below (ex-ante, ad-hoc, on-going, strategic evaluations);
- Providing resources to make evaluations, and using the data and information from the monitoring system (according to the specification of the particular evaluation made by the National Coordinator);
- Active mutual cooperation with evaluators and persons involved in the evaluation at the national level (National Coordinator) and at various levels of implementation of the Education for Competitiveness OP, and at various levels of implementation of the Structural Funds and the Cohesion Fund in the Czech Republic;
- Disclosing the evaluation results.

4.6.2 Evaluation Plan

The first step in the implementation of evaluation is the formulation of an evaluation plan. The evaluation plan shall be formulated for the whole Programme period, updated annually, and detailed for the next calendar year to come. The evaluation plan shall contain the following:

- A specification of the management structure to be responsible for evaluations;
- An indicative time schedule of evaluation activities;
- Planned financial resources;
- A mechanism for potential revisions to the evaluation plan.

The annual specification of the OP evaluation plan should contain the following factual revisions:

- A clear specification of the contents of individual activities and their detailed breakdown at the level of projects;
- Planned financial resources (with a reserve for an ad-hoc evaluation, etc.);
- An indicative (monthly) time schedule of evaluation activities.

The R&DI OP evaluation plan, including related annual updating and an assessment of its fulfilment, shall duly be discussed by the Working Party for R&DI OP Evaluation and by the National Coordinator's Working Party for Evaluation, and subsequently approved by the R&DI OP Monitoring Committee.

4.6.3 Types of Evaluations

For the purposes of the R&DI OP, the Managing Authority shall make the following evaluations:

- Ex-ante evaluations;
- On-going evaluations;
- Ad-hoc evaluations;

In addition to the stated activities, the parts of the R&DI OP shall be assessed within the evaluations to be made by the National Coordinator (in accordance with the National Coordinator's Evaluation Plan) and by the Commission (in accordance with the Evaluation Plan of the Commission and in accordance with Article 47 of Council Regulation (EC) No. 1083/2006). The R&DI OP shall provide full cooperation during the performance of these evaluations.

Ex-ante Evaluation

In order to improve the Operational Programme being prepared, an ex-ante evaluation in accordance with Article 47 of Council Regulation (EC) No. 1083/2006 shall be made. This evaluation shall aim to optimize the manner in which the R&DI OP financial resources are used, and to improve the overall quality of programming. Within the ex-ante evaluation the following items shall be identified and evaluated:

In general, the objective covers the following aspects:

- An evaluation of whether the Operational Programme is a suitable instrument to solve problems affecting the sector, and whether it represents an improvement within the sense of a "qualitative" change of the socio-economic situation in the Czech Republic and regions;
- An evaluation of whether the plan or the Programme have properly defined, consistent and balanced strategic axes, priorities and objectives, and whether they reflect a qualified opinion as for the relevance of the objectives and the feasibility of achieving them, and whether the plan or Programme assist in the fulfilment of objectives of the Economic and Social Cohesion Policy and comply with the goals of the national policies of the Czech Republic;
- A contribution to the quantification of objectives and creation of a basis for the monitoring of future evaluation activity;
- A review of the possible impacts of the programme on the socio-economic environment of the Czech Republic in a broad context;
- An ex-ante evaluation should analyze the adequacy of the implementing and monitoring systems, and assist in the preparation of procedures and criteria for the selection of projects;
- Promotion of the negotiation process with the Commission on the final form of the R&DI OP;
- A preparation of supporting inputs – partial analyses, studies and sets of suggestions and recommendations on the orientation of the R&DI OP.

On-going Evaluation

On-going evaluation activities represent a planned framework of the R&DI OP evaluation. Within this group, all the evaluations to be implemented according to plan are made. In general, the scope of on-going evaluations can cover the activities aimed at the elements of implementation and at the elements of a conceptual nature related to the orientation of the Operational Programme.

Individual areas of the on-going evaluation activities shall be stated in the Evaluation Plan, including related indicative financial ranges.

The category of on-going evaluations shall also cover the evaluations of a strategic nature to be ensured in the 2009-2012 period to provide the National Coordinator with materials required for the fulfilment of strategic reporting conditions in accordance with Article 29 of Council Regulation (EC) No. 1083/2006.

Ad-hoc Evaluation

Ad-hoc evaluation activities shall be carried out in response to needs that arise during the R&DI OP implementation. These are studies made beyond the planned framework as laid down in the R&DI OP Evaluation Plan; for ad-hoc evaluations only, a separate item necessary for reversing the allocated funds shall be created within the Evaluation Plan.

Ad-hoc evaluations shall be undertaken in accordance with the applicable methodology determined for the evaluation at the national and European Union levels. The Evaluation Plan shall specify the potential reserved financial resources for ad-hoc evaluations, including an indicative list of areas and focuses.

4.6.4 Managing Authority

The proper and efficient execution of evaluations shall be within the responsibility of the R&DI OP Managing Authority. Individual component tasks shall be as follows:

- To prepare an assignment for the selection of an external author;
- To initiate tender procedures for the implementation of evaluation projects;
- To create optimum conditions for the implementation of evaluation projects and their coordination using expert groups;
- To evaluate the fulfilment of the Evaluation Plan;
- To submit results of fulfilment of the Evaluation Plan to the Monitoring Committee and to the NDP/NSRF Monitoring Committee (through the NSRF evaluation unit);
- To develop evaluation capacities for the Operational Programme;
- To present on time the results of evaluation activities to the entities with decision-making powers in the implementation of the aid from the R&DI OP;
- To ensure broad publicity of the results of evaluation activities and to spread experience gained during the evaluations;
- To comment on the materials presented within the scope of cooperation with other evaluation workplaces, including NSRF.

Working party for evaluation of the Education for Competitiveness OP

The Working Party for Operational Programme Evaluation shall act as an advisory and coordination body for framework evaluation activities of the Operational Programme, such as formulating the Evaluation Plan, for activities related to the development of evaluation capacities, and for the utilization of evaluation results and their presentation to the OP Monitoring Committee.

The Working Party members shall be appointed by Managing Authority. The Working Party members shall be representatives of the following bodies:

- Managing Authority;
- Intermediate Body;
- National Coordinator.

The Working Party for R&DI OP Evaluation shall discuss:

- Preparation of the Evaluation Plan.
- Updating of the Evaluation Plan for the following year;
- Progress of the Plan's implementation;
- Development of evaluation capacities;
- Assessment of fulfilment of the Evaluation Plan;
- Draft reports to be sent to the R&DI OP Monitoring Committee.

4.7 Publicity

Information and Publicity

In accordance with Article 69 of Council Regulation (EC) No. 1083/2006, the Managing Authority shall assume the responsibility for publicity, i.e. in accordance with the implementing rules as laid down in Articles 2 to 10 of Council Regulation (EC) No. 1828/2006. In the area of publicity it shall proceed as follows:

- Within four months from approval of the R&DI OP, the Managing Authority shall formulate the Communication Plan (hereinafter referred to as "CoP") for the given programme period, or its specification for individual years, including the related methodology for ensuring publicity and awareness (to be an integral part of the CoP), and shall submit it to the Monitoring Committee and to the Commission for approval;
- The progress in the implementation of the Communication Plan shall, in accordance with Article 4 of Council Regulation (EC) No. 1828/2006, be indicated in the R&DI OP Annual Report to be submitted to and approved by the Monitoring Committee and the Commission;
- The fulfilment, effectiveness, poignancy, efficiency and relevance of the OP Communication Plan shall be subject to evaluations (external interim evaluations);
- The evaluation results shall, in accordance with Article 3, paragraph 2 of Council Regulation (EC) No. 1828/2006, be presented in the 2010 Annual Report and in the R&DI OP Final Report to be submitted to the Monitoring Committee and to the Commission for information (the evaluation results shall not be approved by the Monitoring Committee and by the Commission, but, in accordance with the evaluation rules, only submitted for information purposes).

Within the R&DI OP, the publicity and informative tasks are delegated to the following levels:

- Managing Authority;
- Intermediate Bodies;
- Beneficiaries.

Managing Authority

Communication, including the related preparation and fulfilment of the Communication Plan, shall be within the responsibility of the Managing Authority. Within the R&DI OP Managing Authority, the responsible and contact person for taking communication, informative and publicity measures of the Operational Programme shall be an information officer whose main functions will include the following:

- To draw up and coordinate the communication strategy;
- To apply measures arising out of Council Regulations (EC) No. 1083/2006 and No. 1828/2006;
- To act as a contact person for the National Coordinator, Intermediate Body and beneficiaries at the R&DI OP level;
- To act as a contact person for mass media at the R&DI OP level;
- To ensure the transparency of the informative and publicity measures being taken, i.e. in cooperation with other entities involved in the implementation of the Operational Programme;
- To create a consistent visual form of informative and publicity measures related to the aid from the R&DI OP;
- To implement informative and publicity measures at a central level;
- To ensure support and assistance to entities implementing informative and publicity measures of the R&DI OP at a lower level;
- To prepare the Annual and the Final Reports on the implementation of informative and publicity measures to be submitted to the R&DI OP Monitoring Committee, and other relevant documents as well;
- To keep the R&DI OP Monitoring Committee, the National Coordinator and the Commission informed about the implementation of informative and publicity measures;
- To inform the R&DI OP Monitoring Committee about the activity and results of meetings;

- To evaluate the implemented informative and publicity measures;

- To ensure efficient distribution of financial resources intended for the implementation of informative and publicity measures.

The implementation of communication measures at the Programme level shall be paid for from resources for the technical assistance of the R&DI OP. The implementation of communication measures at the project level shall be paid for from resources intended for the project itself.

In accordance with Articles 5 and 6 of Council Regulation (EC) No. 1828/2006, the Managing Authority shall be obliged to ensure awareness and publicity for the potential beneficiaries in the following areas:

- Conditions for the beneficiaries that enable them to obtain funds from the OP, while respecting the principle of equal opportunities;

- Description of procedures to be applied to project selections, including fixed terms and deadlines;

- Criteria of the selection and evaluation of financed operations;

- Contacts at the national, regional or local levels where the applicants/potential applicants can get information about the R&DI OP.

In accordance with Article 7 of Council Regulation (EC) No. 1828/2006, the Managing Authority shall be obliged to ensure awareness and publicity for the wider public as follows:

- To inform about the main activities and the start of the Operational Programme (even if the Communication Plan has not yet been approved);

- To inform about the R&DI OP results, including major projects (once a year, at least);

- To publish a list of beneficiaries, names of operations and amounts allocated for individual operations (during this activity it shall also proceed in accordance with Council Regulation (EC) No. 45/2001).

Intermediate Body

The Intermediate Body shall be authorized by the Managing Authority to implement informative and publicity measures at the level of individual intervention areas of the R&DI OP that fall within its competence. Depending on the nature of the intervention areas, the Intermediate Body may implement them independently, in mutual cooperation, or in cooperation with the Managing Authority. Informative and publicity measures to be taken by the Intermediate Body shall be specified in agreements on activities and authorities to be delegated, or in other methodological documents of the Operational Programme.

The Intermediate Body shall be obliged to appoint a responsible and contact person who will cooperate with the R&DI OP Managing Authority in the implementation of informative and publicity measures.

Beneficiaries

Beneficiaries shall ensure the informative and publicity elements in accordance with Article 8 of Council Regulation (EC) No. 1828/2006. This activity shall be implemented under the conditions stated below:

- Beneficiaries shall follow methodological guidelines to ensure awareness and publicity at individual levels of the Operational Programme;

5 Funding

The R&DI OP plan is based on the financial plan of an allocation for the Czech Republic for the Convergence objective in the 2007-2013 period. In the framework of the general financial plan, 8% (i.e. EUR 2.07068 billion) was allocated to the R&DI OP. The implementation of the R&DI OP will be supported from the ERDF. The ERDF contribution to the R&DI OP is set in the National Strategic Reference Framework as a multi-annual commitment for the 2007-2013 programming period. Within Priority axes 1 to 3, 10% flexibility will be used for the projects that fall within the ESF and are essential for and directly related to the successful implementation of the operation (e.g. increasing the adaptability and ensuring the mobility of workers for these capacities, defining the future job and qualification requirements and the development of specific services for the said capacities, etc.). In accordance with the public aid rules, the proposal for the R&DI OP does not presume any financing from national private resources.

Co-financing from CR public resources shall be provided in accordance with Act No. 218/2000 Coll. on budgetary rules, as amended, Act No. 130/2002 Coll. on aid for research and development from public resources and amending certain related laws, as amended, Act No. 250/2000 Coll. on the budgetary rules of district budgets, as amended, and with effectiveness from 1 January 2007 with Decree of the Ministry of Finance No. 231/2005 Coll.

Detailed financial planning of the R&DI OP is specified in the following tables:

1. Table 5.-1, containing the total annual estimated financial allocation of the R&DI OP sought from individual EU funds;
2. Table 5.-2, containing the financial plan for the whole R&DI OP and individual priority axes as broken down into individual sources of financing, i.e. the EU's financial contribution, national financing and other resources;

Table 5.-1 Total annual estimated financial allocation of R&DI OP (EU contribution) from EU funds (figures in EUR, current prices)

	Structural Funds (ERDF or ESF)	Cohesion Fund	Total
	1	2	3=1+2
2007	256,915,918	0	256,915,918
2008	269,553,263	0	269,553,263
2009	282,245,851	0	282,245,851
2010	295,531,959	0	295,531,959
2011	308,824,129	0	308,824,129
2012	322,067,985	0	322,067,985
2013	335,541,779	0	335,541,779
Total for 2007-2013	**2,070,680,884**	**0**	**2,070,680,884**

Table 5.-2 Financial plan for the whole R&DI OP and individual priority axes as broken down into individual sources of financing (figures in EUR, current prices)

Priority axis No.	Name of priority axis	Fund	Community contribution	National public resources	National private resources	Total resources	Share of co-financir
			a	b	c	d=a+b+c	e=a/d
1	Development of R&D capacities	ERDF	971,191,034	171,386,653	0.0	1,142,577,687	85
2	Development of capacities for cooperation between the public and private sectors in R&D	ERDF	550,794,915	97,199103	0.0	647,994,018	85
3	Reinforcement of university capacities for tertiary education	ERDF	507,295,317	89,522,703	0.0	596,818,020	85
4	Technical assistance	ERDF	41,399,618	7,305,815	0.0	48,705,433	85
Total			**2,070,680,884**	**365,414,274**	**0.0**	**2,436,095,158**	**0,**

Table 5.- 3 Indicative breakdown of the Community contribution by the category in the operational programme

Dimension 1 **Priority theme**	
Code	Amount in EUR **
2	1,848,714,038
3	99,394,409
9	81,172,100
85	28,980,236
86	12,420,101

Dimension 2 **Form of finance**	
Code	Amount in EUR **
1	2,070,680,884

Dimension 3 **Territory**	
Code	Amount in EUR **
1	1,760,078,751
5	310,602,133

** Estimated amount of the Community contribution for each category

List of Annexes

Annex 1 – Overview of indicators of context, programme and priority axes

Description	Type	Indicator	Definitions	Unit of measurement	Baseline data (2004)	Target value	Source	Monitoring frequency
Social and economic situation	Context	Total expenditure on R&D as a percentage of GDP	Relationship between gross domestic expenditure on R&D (GERD) and GDP generated, in current prices, in the CR in the given year	%	1.27	Not indicated	CZSO	Annually
		Number of R&D employees per 1,000 employees in the CR	It enables the creation of a relationship between the share of R&D employees (in FTE) in total employment in the CR and the average of the EU-25 countries.	FTE	5.6	Not indicated	CZSO	Annually
		Summary Innovation Index (SII)	Summary of 20 individual indicators characterizing the innovation activities of a given country (on a scale of 0-1)	Value	0.27	Not indicated	EIS[41]	Annually
Global objective	Impact	Jobs in research and development and at universities in aid regions – total value	R&D jobs after the launch of the programme in the given year, expressed in FTE (average registered number of R&D employees as involved in research and development full time). R&D employees include researchers, technical workers and other workers.	FTE	28,726	33,676	CZSO	Annually
		Total expenditure on R&D in aid regions/year	The volume of total expenditure on R&D in regions (from a statistical survey based on the place of work) in EUR millions, in current prices, in a given year. This concerns aid regions (NUTS II). Expenditure broken down into the following structure: public resources, private resources, and EU funds.	EUR millions	750	1,080	CZSO	Annually

[41] European Innovation Scoreboard

Description	Type	Indicator	Definition	Unit of measure	Baseline data (2004)	Target value	Source	Monitoring periodicity
		Total increase in R&D knowledge	Increase in total amount of R&D knowledge. It covers the R&D results monitored in the R&D IS for Evaluation of R&D and its results (including the publications on the Web of Science and applied results – patents, etc.).	Number	0	6,250	R&DI OP, R&D IS monitoring system	3 years after having concluded the project
Priority axis 1	Impact	Number of new jobs in R&D	Number of new jobs in R&D in newly established or reconstructed facilities	Number	0	2,365	R&DI OP monitoring system	Annually
		Increase in expenditure on R&D/year	Increase in expenditure on R&D at aid entities/year	EUR millions	0	215	R&DI OP monitoring system	3 years after having concluded the project
		- Of which: Increase in expenditure on R&D at beneficiaries from the EU FP/year	Increase in expenditure on R&D at aid entities resulting from participation in the EU FP	EUR millions	0	40.5	R&DI OP monitoring system	3 years after having concluded the project
		Total increase in R&D knowledge	Increase in total amount of R&D knowledge. It covers the R&D results monitored in the R&D IS for Evaluation of R&D and its results (including the publications on the Web of Science and applied results – patents, etc.).	Number	0	4,750	R&DI OP, R&D IS monitoring system	3 years after having concluded the project
		- Of which: Increase in number of CR publications on Web of Science/year	Number of CR publications on Web of Science in aid regions/year	Number	0	2,750	Thomson ISI® NSI	3 years after having concluded the project
	Result	Built or reconstructed capacities	Capacities (square metres of area) of newly built or reconstructed laboratories, facilities, etc. within the scope of R&DI OP aid	m^2	0	250,000	R&DI OP monitoring system	Annually
	Output	Number of projects	Number of projects for the development of R&D capacities.	Number	0	100	R&DI OP monitoring system	Annually

Description	Type	Indicator	Definition	Unit of measure	Baseline data (2004)	Target value	Source	Monitoring periodicity
Priority axis 2	Impact	Number of new jobs in R&D	Number of new jobs in R&D at newly established or reconstructed facilities	Number	0	1,350	R&DI OP monitoring system	Annually
		Increase in expenditure on R&D/year	Increase in expenditure on R&D at aid entities/year	EUR millions	0	115	R&DI OP monitoring system	3 years after having concluded the project
		Of which: Increase in expenditure on R&D from private resources/year	Increase in expenditure invested by private entities in R&D for research institutions per year	EUR millions	0	35	R&DI OP monitoring system	Annually
		Total increase in applied R&D knowledge	Increase in amount of applied R&D knowledge (patents, etc). It covers the R&D results monitored in the R&D IS OP for Evaluation of R&D and its results.	Number	0	1,500	R&DI OP, R&D IS monitoring system	3 years after having concluded the project
	Result	Built or reconstructed capacities	Capacities (square metres of area) of newly built or reconstructed laboratories, facilities, etc.	m^2	0	100,000	R&DI OP monitoring system	Annually
	Output	Number of entities in regions using the aid services of targeted awareness of R&D and its results	Number of entities in regions using the aid services of targeted awareness of R&D results	Number	0	500	Research	Annually
		Number of assisted projects	Number of assisted projects for cooperation between enterprises and research institutions	Number	0	90	R&DI OP monitoring system	Annually
Priority axis 3	Impact	Number of new jobs at universities	Number of new jobs at universities and at newly established and reconstructed facilities	Number	0	1,235	R&DI OP monitoring system	Annually
		Increase in number of enrolled students of beneficiaries	Increase in number of enrolled students of beneficiaries	Number	0	10,000	R&DI OP monitoring system	3 years after having concluded the project

Description	Type	Indicator	Definition	Unit of measure	Baseline data (2004)	Target value	Source	Monitoring periodicity
		Unemployment rate of graduates of the beneficiaries in LBRDD branches	Unemployment rate of graduates of the beneficiaries in LBRDD branches	Percentage (%) of unemployed graduates (relative)	100	75	R&DI OP monitoring system	3 years after having concluded the project
	Result	Built or reconstructed capacities	Capacities (square metres of area) of newly built or reconstructed facilities at universities for tertiary education facilities, etc.	m^2	0	150,000	R&DI OP monitoring system	3 years after having concluded the project
	Output	Number of assisted projects	Number of assisted projects for the reinforcement of university capacities for tertiary education	Number	0	35	R&DI OP monitoring system	Annually

Annex 2 – List of Abbreviations

AB	Audit Body
AV ČR	Czech Republic Academy of Sciences
CF	Cohesion Fund
ČNB	Czech National Bank
Commission	European Commission
CoP	R&DI OP Communication Plan
CR	Czech Republic
CSG	Community Strategic Guidelines
CZSO	Czech Statistical Office
EC OP	Education for Competitiveness Operational Programme
EC	European Communities
EGS	Economic Growth Strategy
EI OP IS	EI OP Information System
EI OP	Enterprise and Innovation Operational Programme
EIB	European Investment Bank
EIF	European Investment Fund
EIS	European Innovation Scoreboard
EPO	European Patent Office
ERA	European Research Area
ERDF	European Regional Development Fund
ESF	European Social Fund
EU	European Union
EUR	euro
FTE	Full Time Equivalent (full time involvement in research and development activities
GDP	Gross Domestic Product
HRD OP	Human Resources Development Operational Programme
IB	Intermediate Body
IPO	Industrial Property Office
JPO	Japan Patent Office
LBRDD	Long-term Basic Directions of Research and Development (Priorities of the CR R&D)
MA	Managing Authority
ME	Ministry of Environment
MIT	Ministry of Industry and Trade
MEY&S	Ministry of Education, Youth and Sports
NDP	National Development Plan of the Czech Republic for 2007–2013
NIP	National Innovation Policy of the Czech Republic for 2005–2010
NRchP	National Research Programme
NRDP	National Research and Development Policy of the Czech Republic for 2004–2008
NRP	National Lisbon Programme for 2005–2008 (National Reform Programme of the Czech Republic)
NSRF	National Strategic Reference Framework of the Czech Republic for 2007–2013
NUTS	Nomenclature of territorial units for statistics

OP	Operational Programme
PAC	Payment Authority and Certifying Body
PRI	Public Research Institutions
R&D IS	Research and Development Information System
R&D	Research and Development
R&DI OP	Research and Development for Innovations Operational Programme
R&DI OP IS	R&DI OP Information System
R&DI	Research and Development for Innovations
RPP	Relative Production of Publications
SF EU	EU Structural Funds
SII	Summary Innovation Index
SME	Small and Medium-sized Enterprises
USPTO	United States Patent and Trademark Office
VIOLA IS	VIOLA Information System
U	Universities

Annex 3 – Explanation of Terms Used

The aim of this overview is not to create definitions of terms (a number of terms do not have a single generally accepted definition), but to explain their content in the context of the R&DI OP.

In accordance with the proposal for the Community Framework for Public Aid for Research, Development and Innovations:

(a) **"Basic research"** shall mean experimental or technical work carried out primarily to obtain new knowledge of the relevant bases of phenomena and observable facts without taking into account any direct applications or utilization.

(b) **"Industrial research"** shall mean planned research or a critical investigation aimed at obtaining new knowledge and skills to develop new products, procedures or services, or to achieve a considerable improvement in existing products, procedures or services. It shall include the creation of parts of more sophisticated systems necessary for industrial research, except for the prototypes given in paragraph 2.2. (g).

(c) **"Experimental research"** shall mean obtaining, combining, modifying and applying the existing scientific, technological, commercial and other relevant knowledge and skills to generate plans and measures or projects for new, changed or improved products procedures or services. It could also include, for example, other activities aimed at conceptual definitions, planning and documentation of new products, procedures and services. These activities may include the generation of designs, plans and other documentation unless intended for commercial utilization[42].

Poles of Excellence – Units or organizational structures incorporated into basic research and developing top-class procedures of a world standard based on quantifiable scientific phenomena (including educational activities). In the field of natural, social and economic sciences, the poles of excellence should combine theoretical and applied research and make maximum use of multidisciplinary approaches in this process.

Pre-seed capital – a capital investment enabling the financing of supplementary research required for launching a product into the market, or for the production of a prototype, a model, etc. At this stage, the company as such has not been established yet.

Innovation – the renewal and extension of a range of products and services and related markets, the creation of new methods of production, supply, and distribution, the implementation of changes in management, organization of work, working conditions, and qualifications of the labour force. (Definition used by the Commission and also accepted by the NIP).

Spin-off company – a company that uses tangible or intangible assets of another legal entity to launch its business. This term is frequently used in relation to universities, where spin-offs are

---

[42] Commercial utilization means a goal of achieving direct economic use by selling the prototype, results of project presentation or output of experimental production at a price that is significant when compared to costs. It does not include any non-commercial income related to the prototype, project presentation or experimental production, under the condition that the income is considerably lower than the costs.

established by students and young researchers with the support of the universities and based on long-term cooperation with them.

Technology Transfer – a process where technology, knowledge and/or information created in one organization, in one area, or for one purpose is applied or used in another organization, in another area or for another purpose.

Science and Technology Park – this term has been used in the Czech Republic since 1990 for all types of parks (centres). Science and technology parks are mainly profiled in three principal types: (i) Science park (centre), (ii) Technology park (centre), and (iii) Business and innovation centre.

Human resources in research and development

R&D employees – R&D employees shall mean research workers who are directly involved in R&D, as well as ancillary, technical, administrative and other employees working at R&D facilities. R&D employees shall also include employees who provide direct services for research and development activities, such as R&D managers, administrative officials, assistant managers, etc.

Researchers – researchers are the most important group of R&D employees; they are involved in the conception or creation of new knowledge, products, processes, methods and systems, and they may manage such projects too.

Annex 4 – List of Tables, Graphs and Figures

Tables

Graphs

Figures:

Annex 5 – List of Documents

The concept of the R&DI OP is based on many documents of a legislative, strategic, methodological and analytical nature. A list of the most significant documents is provided below in the text.

EU legislative documents

- Council Regulation (EC) No. 1083/2006 of 11 July 2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No. 1260/1990, Brussels, (referred to as the "General Regulation" in the text of the R&DI OP).
- Regulation of the European Parliament and of the Council (EC) No. 1080/2006 of 5 July 2006 on the European Regional Development Fund and repealing Regulation (EC) No. 1783/1999, European Council 9059/06, Brussels.
- Proposal for Commission Regulation (EC) laying down detailed rules for the implementation of the Council Regulation (EC) laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund, Commission Working Document, Brussels, 15 February 2006 (referred to as the "proposal for Implementing Regulation" in the text of the R&DI OP).
- Proposal for the Community Framework for Public Aid for Research, Development and Innovations.
- Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

Czech legislative and methodological documents

- Act No. 130/2002 Coll. on aid for research and development from public resources and amending certain related laws, as amended (referred to as the "Research and Development Aid Act" in the text of the R&DI OP).
- Act No. 137/2006 Coll. on public contracts.
- Act No. 341/2005 Coll. on public research institutions.
- Act No. 320/2001 Coll. on financial control in public administration and amending certain laws, as amended (referred to as the "Financial Control Act" in the text of the R&DI OP).
- Decree of the Ministry of Finance No. 416/2004 Coll. implementing Act No. 320/2001 Coll. on financial control.
- Act No. 552/1991 Coll. on state control, as amended.
- Act No. 218/2000 Coll. on budgetary rules and amending certain related laws, as amended.
- Act No. 250/2000 Coll. on the budgetary rules of district budgets, as amended.
- Decree of the Ministry of Finance No. 231/2005 Coll. on the involvement of the national budget in the financing of asset purchasing and reproducing programmes (with effectiveness from 1 January 2007).

- Act No. 100/2001 Coll. on environmental impact assessments and amending certain related laws, as amended by Act No. 93/2004 Coll. (referred to as the "Environmental Impact Assessment Act" in the text of the R&DI OP).
- Government Order No. 462/2002 Coll. on the institutional support of research and development from public resources and on the assessment of research plans, as amended by Government Order No. 28/2003 Coll.
- Czech Republic Government Resolution No. 822/2005 of 29 June 2005 on the proposal for national budget expenditure on research and development for 2006, including an outlook for 2007 and 2008.
- Czech Republic Government Resolution No. 644/2004 of 23 June 2004 on the evaluation of research and development and its results.
- Methodology for the preparation of programme documents for 2007-2013, Ministry of Regional Development, February 2006.
- National Code List of Indicators for the 2007-2013 Programme Period, Ministry of Regional Development, March 2006.
- Methodology of Financial Flows and Controls of Programmes to be Co-financed from the SF/CF/EFF for the 2007-2013 Programme Period, consolidated wording effective as of 1 January 2006, published by the Ministry of Finance (referred to as "Methodology of Financial Flows" in the text of the R&DI OP).

EU strategic documents

- Communication from the Commission – Cohesion Policy in Support of Growth and Jobs – Community Strategic Guidelines, 2007-2013, COM (2005) 0299, Brussels, 5 July 2005 (referred to as "CSG" in the text of the R&DI OP).
- Conclusions of the European Council revising the Lisbon Strategy, 7619/1/05, Brussels, 22 and 23 March 2005.
- Communication from the Commission – "More Research for Europe: Towards 3% of GDP", COM (2002) 499, Brussels.
- Communication from the Commission – "Investing in Research: An action plan for Europe", COM (2003) 226, Brussels, 22 September 2003 (referred to as "Action Plan for Europe" in the text of the R&DI OP).
- Communication from the Commission – "Time to Move Up a Gear: The new partnership for growth and jobs", COM (2006) 30, Brussels, 25 January 2006.
- Working together for growth and jobs: A new start for the Lisbon Strategy, COM (2005) 24, Brussels, 2 February 2005.
- Common Actions for Growth and Employment: The Community Lisbon Programme, COM (2005) 330, Brussels, 20 July 2005.
- Wim Kok Report on the implementation of the Lisbon Strategy, November 2004.

Czech strategic documents

- Draft National Development Plan of the Czech Republic 2007-2013 (version: January 2006).

- Draft National Strategic Reference Framework (referred to as "NSRF" in the text of the R&DI OP).
- National Lisbon Programme 2005-2008 – (National Reform Programme of the Czech Republic) (referred to as "NRP" in the text of the R&DI OP).
- Economic Growth Strategy; approved by the Government under Resolution No. 1500 of 16 October 2005 (referred to as "EGS" in the text of the R&DI OP).
- National Innovation Policy of the Czech Republic for 2005-2010; approved by the Government under Resolution No. 851 of 7 July 2005 (referred to as "NIP" in the text of the R&DI OP).
- National Research and Development Policy of the Czech Republic for 2004-2008; approved by the Government under Resolution No. 5 of 7 January 2004 (referred to as "NRDP" in the text of the R&DI OP).
- Strategy of Sustainable Development of the Czech Republic; approved by the Government under Resolution No. 1242 of 8 December 2004.
- Harmonization of the National Research and Development Policy of the Czech Republic for 2004-2008 with the National Innovation Policy and other relevant documents of the Czech Republic and the European Union; approved by the Government under Resolution No. 178 of 22 February 2006.
- National Research Programme I; approved by the Government of the Czech Republic under Resolution No. 417 of 28 April 2003 (referred to as "NRchP" in the text of the R&DI OP).
- National Research Programme II; approved by the Government of the Czech Republic under Resolution No. 272 of 9 March 2005 (referred to as "NRchP" in the text of the R&DI OP).

Analytical documents of the EU and the Czech Republic

- Analysis of the state of research and development in the Czech Republic and a comparison with other countries in 2005; Research and Development Council; acknowledged by the Government of the Czech Republic under Resolution No. 1518 of 23 November 2005.
- Barriers preventing the growth in competitiveness of the Czech Republic, Technology Centre of the Czech Republic Academy of Sciences, 2005.
- Study – The Use of Research and Development for the Support of a Knowledge Economy in the Czech Republic, Technology Centre of the Czech Republic Academy of Sciences, December 2005.
- Evaluating and Comparing the Innovation Performance of the United States and the European Union, Expert report prepared for the TrendChart Policy Workshop 2005, Giovanni Dosi, Patrick Llerena, Mauro Sylos Labini, 29 June 2005.
- Creating an Innovative Europe, Report of the Independent Expert Group on R&D and Innovation appointed following the Hampton Court Summit (Aho Report), January 2006.
- Information of the Government Research and Development Council, www.vyzkum.cz.
- Commission Recommendation on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (EU, 2005).
- Eurostat documents focusing on R&DI, http://europa.eu.int/comm/eurostat/.
- Czech Statistical Office documents focusing on R&DI, www.czso.cz.