Private Sector Interaction in the Decision Making Processes of Public Research Policies

Country Profile: Slovak Republic

1. Political, institutional and economic framework and important actors

During the past fifteen years, the Slovak economy and the National Science and Innovation System have undergone a profound restructuring in the course of the transformation from a centrally planned to a market economy. Since 2001, the Slovak economy has enjoyed an economic boom with high increases of GDP. According to an adjusted estimate of the Statistical Office of the Slovak Republic, gross domestic products increased in the 1st quarter of 2006 by 6.3% (at current prices by 8.6%), compared to the same period of the previous year. Its increase was by 0.9 p.p. higher than in the 1st quarter of 2005. However, in the fields of research and innovation, Slovakia does not rank among the well-performing European nations. For example, Slovakia has a decent performance in only four of 20 indicators of the European Trend Chart's Summary Innovation Index, including innovation expenditure by companies (however, mostly related to foreign direct investment of multinational companies). Major weaknesses include low spending on R&D (stemming from falling public R&D support) and weak support to applied research (reflected in low commercial output of the Slovak R&D sector). Table 1 illustrates that R&D intensity has decreased since 2000. In 2003, the Private Sector contributed 45.1% of total R&D expenditure, the Public Sector contributed 50.84%, 3.38% came from foreign and 0.73% from other sources[1].

Indicator	2000	2001	2002	2003	2004	2005
Total annual R&D expenditure	6 085 506	6 466 807	6 332 656	7 016 275	6 965 430	7 503 386
- thereof capital investments	513 925	502 654	528 052	777 150	742 334	798 574
- thereof ordinary expenditures	5 571 581	5 964 153	5 804 604	6 239 125	6 223 096	6 704 812
R&D costs as % of GDP	0.65%	0.63%	0.57%	0.58%	0.51%	0.51%

Table 1[2]: Evolution of Slovak Research and Development expenditure (in thousand SKK)

Foreign direct investment has become a major driving force of economic growth. But the Private Sector share of national R&D expenditure of only approx. 1/3 shows that so far this success has not been paralleled by a similar growth of business investment in research and development (R&D).

On 1st July 2005, the Act No. 172/2005 Coll. on the Organisation of State Support for Research and Development entered into force. It is a fundamental legal instrument defining the obligations of the central Government authorities, the conditions for and forms of provision of state support for research and development, the system for evaluating research organisations, the information system for research and development and the rights and duties of the legal and natural entities active in research and development.

Research and development in the Slovak Republic is carried out by higher education institutions, research institutes of the Slovak Academy of Sciences (SAS), Public Sector research institutes funded from the state budget, and private research institutes funded by the Private Sector. The major actors of the Slovak Research and Innovation System are the following:

1 Source: Eurostat, *Science and Technology in Europe; Data 1990 – 2004*, Office for Official Publications of the European Communities, Luxembourg, 2006

2 Source: Statistical Office of the Slovak Republic

a. Political/ governmental authorities, advisory and intermediate bodies

In the National Council of the Slovak Republic, the *Committee for Education, Sciences, Sport, Youth, Culture and Media* is the parliamentary framework responsible for the research and development sector with the right of legislative initiative.

The Government's main advisory body is the *Slovak Republic Government Board for Science and Technology* (GBST)[3]. According to its new Statute (in force since March 29, 2006), it is a permanent advisory body of the Government for the State science and technology policy of the Slovak Republic, except for the defence and security oriented science and technology policy. This board consists of 15 members, of whom 5 represent ministries, 2 the SAS, 3 the higher-education sector and 5 the Private Sector. All members are appointed by the Government on the proposal of the Minister of Education, who also chairs the GBST. The GBST's competencies are defined by its statute. They include the discussion and evaluation of conceptual and strategic materials and the development of own proposals relating to the governmental science and technology policy. The sessions of the Board are attended by permanent experts appointed by its chairperson. The groundwork, materials, analyses and viewpoints for the Board are prepared by two permanent working groups – one for basic research and one for applied research and development.

The Ministry of Education is responsible for development and implementation of basic and applied research policies, the development of their policy framework and the coordination of relevant activities of other Public Sector institutions[4].

A number of institutions work under the auspices of the Ministry of Education

- The former Agency for the Support of Science and Technology was transformed and renamed to form the *Agency for the Support of Research and Development* (ASRD) since July 1, 2005. As a funding agency, it supports research and development projects in line with the national Science and Technology policy on the basis of tenders or thematic programmes. The supreme governing body of ASRD is its Presidium, consisting of 12 science and technology experts and one representative of the Ministry of Education. The Minister of Education appoints presidium members on the basis of nominations by central Government authorities, the Slovak Academy of Sciences, the higher education sector and by representative associations of employers. Additional ASRD boards are established for the governance of individual research disciplines or groups and for important programmes of ASRD. Such boards consist of at least 7 members, appointed by the minister of education on the proposal of the ASRD Presidency. These boards are responsible for the selection, assessment and approval of projects, provide further guidance and perform interim and final assessments of the programme/project implementation. The Board consists of professionals from the research and development fields drawn proportionately from the higher education sector, the state sector, the private enterprise sector and the non-profit sector.
- The *Centre for Advancement, Science and Technology* was established by the Ministry of Education to support the participation of Slovak subjects in European science, technology, research and development projects. Its aim was to provide services in two main areas: support of technology transfer and innovation management and coordination, consultancy and information dissemination on EU R&D programmes. It works as the consultancy and coordination point for the 5th and 6th Framework Programmes, the COST and

[3] For details see http://www.veda-technika.sk/angl/default.htm

[4] Two units of the Ministry's Section of Science and Technology play an important role for research and innovation policy: The State Science and Technology Policy Unit elaborates long-term research and technology policy priorities and policies, designs and manages the State R&D Programmes (SRDP), under which a significant part of basic and applied research in Slovakia is carried out and advises on the procurement of State R&D Orders (SRDO), based on Government Resolution No 912/2002. The International Co-operation Unit designs and implements international research and technology co-operations and represents Slovakia in international governmental and non-governmental organisations related to research and technology.

EUREKA programmes. It also helped to commercialise R&D results and innovate products. Since April 2006, it has been reshaped to form a part of the ASRD.

- The *Scientific Grant Agency VEGA* was established by an agreement between Ministry of Education and the SAS in January 1996 to finance basic research in Universities and the SAS institutes.
- The *Slovak Centre of Scientific and Technical Information* was established by the Ministry of Education in the form of a public allowance organization as a national information centre specialized on technology and sciences.

The *Ministry of Economy* focuses on support for innovation, in particular through various innovation policy measures and a network of support agencies, including the following:

- The *National Agency for Development of Small and Medium Enterprises* (NADSME) develops and implements policies and strategies addressing SMEs. Since 1997, the Agency has operated as non-profit association with the Ministry of Economy and with two Private Sector partners: the Entrepreneurs Association of Slovakia and the Slovak Craft Industry Federation. The Agency develops and supports Regional Advisory and Information Centres (RAICs) and co-operates with Business Innovation Centres (BICs) and business consulting centres in Slovakia.
- The *Slovak Investment and Trade Development Agency* (SARIO) aims at attracting foreign direct investment. It participates in the implementation of the EU structural funds in Slovakia and helps NADSME to manage calls related to Business Incubators, Technology Parks and R&D Centres.
- The *Innovation Fund* is a non-investment fund established by Government resolution No 532/1997 to support innovative development in the entrepreneurial sphere by means of financing research and project development.

Other ministries and central Government authorities, within their respective sectors, are also responsible for research and development, the coordination of thematic priorities of research and development projects, financial support, the attainment of the targets set, and the utilisation of research and development results. Some of them have established specialized agencies or other institutions to fulfil R&D tasks, e.g.:

- As a section of the Ministry of Construction and Regional Development of the Slovac Republic, the *Regional Development Support Agency* has the task to implement cross-border cooperation projects and economic and social cohesion projects.
- The *Slovak Academy of Agricultural Sciences* was established by the Ministry of Agriculture with the main mission to be concerned about the development and realization of scientific and research activities in the sphere of agriculture.
- The *Institute of Scientific and Technical Information for Agriculture* was established by the Ministry of Agriculture to provide for scientific, technical and economic information for the agriculture in the Slovak Republic.

b. Research performing institutions

Research is performed in the Slovak Republic by several groups of actors.

With 55 scientific institutes and 13 ancillary institutions in 2005, the *Slovak Academy of Science* (SAS) performs the bulk of basic research in Slovakia under the auspices of the Ministry of Education. As a self-governing scientific organisation established by special Act, the Academy conducts its research on the basis of either full or partial public funding. The SAS is governed by the Presidium, which is elected by a Board of Research Scholars (the board itself is composed of elected representatives from the respective SAS institutes). The Academy is presided over by the President, who – upon a prior nomination by the Board of Research Scholars - is appointed and recalled by the Government of the Slovak Republic. The highest self-governing organ of the SAS is the Assembly, composed of representatives elected by academics of scientific institutions. The Private Sector is involved in another self-

governing organ – the Scientific Board of the SAS. It comprises of the President of SAS, members of the Presidium, representatives of higher education sector as well as representatives of entrepreneurial sector, including R&D institutions outside the SAS.

The *higher education* sector consists of 20 public higher education institutions, 3 state higher education institutions and 7 private higher education institutions.

Other institutions performing research include state sector research and development organisations established by central state administration bodies, most of them already privatised (e.g. Research Institute for Man-Made Fibres, Transport Research Institute, Research Institute for Textile Chemistry, Dairy Research Institute and others).

c. Private Sector

In research policy making, the interests of the Private Sector are represented by several business associations.

The *Slovak Chamber of Commerce and Industry* is a public legal institution. Its members are natural and legal persons performing business activities in various fields of economy, with exception of agriculture and food industries. Its activities are focused on member support and protection when performing business both at home and abroad. Within the Chamber, an Entrepreneurial Legal Infrastructure Department is working with the aim to coordinate the initiatives of entrepreneurs in the decision-making process of legal acts. It assumes attitudes to prepared bills in the phase of comment process (before the official draft bill is submitted to the Government).

The *Federation of Employers' Associations of the Slovak Republic* is the supreme employers' organisation in the Slovak Republic. Its members include business and employers' associations and unions. It is a partner for the Government in negotiations, submits its proposals and is lobbying in the process of development and adoption of important decisions on the national and international political and economical issues, including research and development. The Federation associates (on February 2006) 12 sector-specific Employers´ Associations, e.g. Association of Chemical and Pharmaceutical Industry of the Slovak Republic, The Pulp-Paper Industry Association of the Slovak Republic, Union of Power Engineering Employers of Slovakia, Union of the Food-stuff Industry Entrepreneurs and Employers of the Slovak Republic, The Private Construction Contractors Association of Slovakia, etc.

The *Association of R&D Industrial Organisations* is a voluntary, interest-oriented organisation grouping organisations with design, development, education and certification as subjects of their activities and with their related activities such as design, testing activity, construction, installation and operation of facilities. The association combines both legal and private persons from the above mentioned areas of the industry. The association has 30 regular members, research organisations from various fields of industry. The association represents its members in negotiations with state authorities in the field of conceptual, development intentions for research and development, as well as in the preparation of updating of legal regulations related to the activities of its members. It assists its members in coordinating the preparation of conceptual intentions for research and development and for international cooperation. It represents its members in drafting the technical and industrial policy of the Slovak Republic.

The association of the largest Slovak enterprises, *Club 500* was established in 2002 as a voluntary association of the entrepreneurs employing more than 500 employees[5]. Club 500 has the intention to take part in the creation of a competitive and healthy business environment in the area where state has failed or does not have impact. The aim of Club 500 is to protect the interests of employers in Slovakia and to contribute to full integration of Slovak economy to the European Union. It also submits its proposals in the process of development and adoption of important decisions on economical issues.

[5] See http://www.azzz.sk/us_klub500.htm

The *Entrepreneurs Association of Slovakia* (ZPS/EAS) was the first organisation of private entrepreneurs established after the 'Velvet revolution'. It was formed in December 1989 as a decisive representative of the Private Sector. Since March 1st, 1993, the EAS is a member of the European Confederation of Associations of Small and Medium-sized Enterprises in Brussels. The Entrepreneur Association of Slovakia is a non-profit organisation. It is financed exclusively by voluntary contributions of its members and by local and foreign corporate donations and individual contributions. The EAS long-term program is focused on, inter alia lobbying for legislation in favour of good and fair business environment. It analyses and evaluates economic, legislative and social conditions for doing business based on practical experiences of its members; co-ordinates activities of its members and their active participation on public policy making process, including legislation and regulatory activities of the central state administration, as well as regional and local authorities having an impact on business activities.

The *Centre for Economic Development* (CED) is a non-profit, non-governmental organisation specializing in research of economic and social issues. Founded in 1993, CED focuses on supporting of long-term economic development as the prerequisite for a sustainable growth of the life quality of Slovak population. In addition to researching economic and social issues, CED organises seminars and publishes articles in the daily press, economic newspapers and business journals to advance its objectives.

The *Institute for Economic and Social Reforms* (INEKO) is a non-governmental non-profit organisation established in support of economic and social reforms which aim to remove barriers to the long-term positive development of the Slovak economy and society.

The Business Alliance of Slovakia is a joint project of the profit and non-profit sectors. Its founder is the Centre for Economic Development (CED) in cooperation with the Institute for Economic and Social Reforms (INEKO). It groups selected companies operating throughout Slovakia. The main goal of the Business Alliance of Slovakia (PAS) is the improvement of the business environment in Slovakia.

The *Association of Slovak Scientific and Technological Societies* (ASSTS) is a voluntary, non-profit and non-political alliance of specialised scientific and technological societies, associations and committees whose activities are based on the principles of self-financing. ASSTS represents more than thirty thousand members associated in 49 specialized societies which have their members in the majority of enterprises, institutions and technical universities in Slovak Republic. The mission of the Association is to represent its members in the interest of increasing the level of science and technology and of promoting scientific and technological development in the Slovak Republic. ASSTS is also an institution which systematically coordinates the scientific and technological cooperation of its member organisations with partner organisations in the European Community and outside Europe on a non-governmental level. For the realization of its specialised activities, ASSTS has created 4 Houses of Technology Ltd., which by means of their activity cover the whole territory of Slovakia. By means of its specialised societies, ASSTS is represented in non-governmental international organisations, e.g. Federation of European National Engineering Organizations (FEANI), Regional Coordination Council of Middle-Eastern European Countries (RCC), World Federation of Engineering Organizations (WFEO).

Among non-governmental non-profit organisations engaged in research and development the following can be mentioned: Building Testing and Research Institute, Research Institute of Posts and Telecommunications, Welding Research Institute – Industrial Institute of the Slovak Republic. Support service in innovative processes development in SME-s and technology transfer is provided by the International Relay Centre Slovakia.

2. National research policy decisions and Private Sector involvement[6]

Instigation and design stages

Until 2004/2005, research and innovation were not among the national policy top priorities. The Slovak Republic had no consistent, dedicated National research and innovation strategy. The Slovak economical policy had focused on the attraction of foreign direct investment on the basis of favourable conditions for investors. This left little room for a dedicated research and innovation policy.

Strategic plans related to research and technology development and other research and innovation policy-related topics in Slovakia were discussed in the Slovak Republic Government Board for Science and Technology (GBST). However, these discussions had only limited influence because of the restricted financial resources available for the support of research and innovation programmes and projects. The Board met twice in 2003 and only once in 2004. Therefore, the new Law on the Organisation of State Support to Research and Development and subsequently the new Statute of GBST have re-focused the activities of this advisory body on science and technology policies (as mentioned above).

A turning point in the Slovak research and innovation policy was the introduction of the *Strategy of Competitiveness Development in Slovakia up to 2010* (to implement the Lisbon Strategy) and the preparation of the new *Law on the Organisation of State Support to Research and Development* (Law No. 172/2005, replacing the Act No. 132/2002 Coll. on Science and Technology), July 1, 2005. Eventually, R&D and innovation activities were declared policy priorities for a development towards a knowledge-based economy. As a consequence, the funds available for government support of R&D were increased substantially. In parallel, the resources of the Structural Funds were redirected gradually to R&D and innovation projects[7].

To introduce this new generation of policies, an interactive approach was chosen. The draft Strategy was published on 22 November 2004. In January 2005, the Ministry of Finance organised a workshop where top representatives of the government coalition and opposition parties, trade unions, enterprise associations and government ministries had the opportunity to comment on the strategy and its implementation before it was officially approved by the Slovak Government Resolution No 140/2005 in February 2005. The new law reduces institutional financing of science and directs more funds to competition-based grant agencies. Its main targets are the promotion of young scientists, business-oriented, internationally competitive research and an effective public support of innovation-oriented innovation activities.

In the course of this process, the Slovak Government had formulated in 2004 and 2005 *Positions of Slovakia on the Lisbon Process* to identify national R&D and innovation challenges and to formulate possible policy responses. The first official document of this type, the 2004 *Position*, recognised the need to reform public research and innovation policies, identified strengths and weaknesses and set out development targets (among them a substantial increase of government support for R&D). The 2005 'Position' extended this new approach to setting tangible targets. These positions were publicly discussed and several institutions mentioned in Section 1 have given their opinion. Some of them were accepted by the Government.

Already before 2004, the importance of involving stakeholders, in particular the Private Sector, in research policy instigation and design was recognised. The SGCST, the Ministry of Education and other institutions established a continuous cooperation with the Association of Unions of Employers, especially with the Union of Industrial R&D Institutions (which was asked to engage in a direct cooperation with the SR Ministry of Education). During important decisions on research and technology policy and their implementation, the Ministry of Education began to solicit the involvement of experts from all R&D sectors.

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6 Focus on Private Sector involvement in research policy. For further details of Slovak research and innovation policies, please see relevant sources, e.g. http://trendchart.cordis.lu/tc_country_list.cfm?ID=29

7 See Chapter 3, regional schemes for the support of research and innovation for details.

An example is provided by the introduction of a competitive system for research funding in state programs and state orders and the selection of new science and technology tasks after 2000. Funding topics were widely discussed and selected under coordination of the Ministry of Education (state programs) or branch ministries (state orders) in cooperation with all parties involved (including Private Sector, industry, academia, public, etc.). This involved a negotiation process with the members of the "Board for Preparation and Assessment of the Principal Science and Technology Documents". The central state administration institutions and other government institutions, the Slovak Academy of Sciences and other stakeholders (including the Private Sector) developed and submitted their proposals. An expert commission consisting of representatives of central state administration institutions, the Slovak Academy of Sciences and of the industrial and financial sectors assessed these proposals and selected the science and technology areas for funding[8].

After approval, these research themes were publicly announced for open competition. Such calls did not exclude any institution from any sector and encouraged often the formation of consortia[9].

Another contribution to the development of a coherent Slovak research and innovation policy was a *Technology Foresight Programme* which was initiated in 2002 on the initiative of the Ministry of Education, following the examples of other new member states. This exercise aimed primarily at raising the quality of professional decision-making by the central authorities in the field of science and technology. It focused on the identification of main development fields, development trends and their impact on science, technology and their applications in the Slovak Republic under the new conditions of the European Research Area and of proposed thematic priorities for research and development. Although the mobilisation of the Private Sector was not an explicit target, Private Sector representatives were involved in various ways. For example, the Association of Research and Development Industrial Organizations and the Association of Industrial Unions of the Slovak Republic were partners in the Foresight Study's organisation[10].

As 'spokesmen' of the Private Sector, associations take an increasingly active stake. For example, the *Association of Industry R&D Organisations* and the association of the largest Slovak enterprises *Club 500* made strong statements in the course of the debate of the new public research funding model, criticising its perceived bias towards academic research at the expense of enterprise sector R&D.

Implementation stage

Based on the new principles of the Slovak research and innovation policy, the budget of the Science and Technology Assistance Agency has been increased significantly. At the same time, competitive bidding for R&D projects has become the predominant instrument to allocate state funds to R&D activities.

Another interface of Public and Private Sector research has been created by the privatisation of former state research and development activities and/or institutions. An example for this are organisations which used to work under the auspices of the Ministry of Economy, namely *The State Wood Research Institute* and *The State Welding Research Institute*. Other budgetary research institutes were transformed into independent subsidised organisations (e.g. the institutions working previously under the auspices of the Ministry of Agriculture). The entire structure of the Slovak Academy of Sciences was also transformed. Some of its institutes, which were public institutions before, became also independent subsidised organisations.

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8 The Ministry of Education, in cooperation with the Board for Preparation and Assessment of the Principal Science and Technology Documents proposed the membership of the commission, as well as the rules and criteria for selection of the submitted science and technology tasks. The selected tasks were submitted to the Government Board for Science and Technology.

9 See also the *OECD Science, Technology and Industry Outlook 2004, Country Response to Policy Questionnaire, Slovak Republic*

10 Sources: http://www.foresight.sav.sk/; http://www.bmbf.de/futur/en/6286_6642.htm

Assessment/revision stage

The Section for Science and Technology of the Ministry of Education performs regular evaluations of the State Research & Development Programmes and publishes their results in reports. In addition, complementary evaluations analyse the performance of research institutions and policy measures under its auspices. Such a report provided in 2000 an assessment of the current state of the research infrastructure and related issues and made suggestions for improvement. A 2003 interim report criticised the limited progress achieved and pointed among other to the need for a significant increase of support of activities aimed at increasing Private Sector interest in S&T promotion and a need to develop suitable indirect policy measures aimed at the commercial use of S&T results. This formed the basis of the subsequent amendment of the Laws No 132/2002 on Science and Technology and No 203/2001 on the Science and Technology Assistance Agency. However, the development of indirect policy measures aiming to foster the commercial use of research results in the Private Sector still needed to be accelerated. Actually, the Private Sector interaction in this evaluation process consists of presenting standpoints to the evaluation reports.

However, in an overall view, the current ad-hoc based concept of policy and policy measure reviews still needs to be extended to a more systematic approach. This includes a further development of the methodological basis, the use of external expertise to carry out evaluations and a stronger involvement of stakeholders, including the Private Sector.

Observations: Possible barriers and current initiatives

Coming from a previous situation which was characterised by the absence of a national research and innovation strategy, the Slovak Republic has made important steps to re-orient its development towards a knowledge-based economy. To pursue this development consequently and to achieve leverage from it, the government's policy initiative to strengthen research and innovation must be complemented by a similar level of commitment from the Private Sector. However, a differentiated view is necessary here.

As a small open economy with a high need to develop its economy and to create employment, the Slovak government has favoured so far the attraction of multinational companies (MNCs). However, many MNCs have chosen Slovakia as a manufacturing location because of its favourable business environment (e.g. low cost of labour, low corporate tax level, etc.). There were few policy measures to attract or stimulate R&D activities of such MNCs. As a consequence, only few MNCs have built or relocated at least some R&D activities to Slovakia or engaged in collaborative R&D projects (exceptions include Samsung and Volkswagen). To be an attractive research and innovation location for foreign investors, the Slovak Republic must develop its National Science and Innovation System to a critical mass, building on the described recent policy developments. Appropriate incentives and an enhanced involvement of such foreign technology- and research-intensive enterprises in research policy could contribute to making them more 'anchored' in Slovakia and its national and local research and innovation systems.

In parallel, the Slovak Republic must meet the challenge of developing the research and technology base of its own national Private Sector enterprises. For this purpose, the current level of awareness and demand of national companies, especially of SMEs, must be further enhanced both as a stimulus for Public Sector research and to fuel a sustainable development of technology-intensive sectors of the Slovak economy. This requires specific instruments to raise awareness and demand, especially from the vulnerable SME target group.

To build such a critical mass and to involve the Private Sector more intensively in research and research policy making, a second necessary prerequisite is the presence of a fully developed national research and innovation policy, combined with a further enhancement of the coherency of research-related policies, decision processes and structures. The European Trend Chart's Annual Innovation Policy Trends and Appraisal Report Slovak Republic 2004-2005 states:

"Innovation activities initiated by the Ministries of Economy and Education lack proper co-ordination. The lack of co-operation is reflected in poor linkages between the basic and applied research and the commercial sector. Slovakia, like other new members of the EU, is experiencing inadequate demand from business enterprises for both internal and external R&D activities. Industrial R&D – the most important mediator between industry and academic science - is weak."

From its post 1990 history, the Slovak Republic has also no established tradition in the interaction between the Public and the Private Sector in research and research policy making. Therefore, a considerable group of enterprises are still not fully aware of the benefits despite the first generation of such interaction mechanisms which has emerged. Therefore a further investment in creating awareness and creating opportunities for Slovak companies to get involved in research-related interactions should be sought.

3. Other important examples of policy decisions with Private Sector involvement

Regional schemes for the support of research and innovation

Despite the strengthening of the power of self-governing regions after the 1996 regional reorganisation of Slovakia, there are still no consistent regional research and innovation policies and/or related structures. Topics of research and innovation are usually included in broader policy approaches. But their potential is limited by a lack of resources in the region. Partially drawing on EU financial support, the Central government tries to stimulate the development of such regional policies, in particular through the activities of NADSME.

Slovakia's EU accession has also led to an increased investment in research and innovation-related policy measures on a regional level (managed by NADSME and with the financial support of the Structural Funds). These include for example the following programmes:

- *Support of Industry Research and Pre-Competitive Development* (SIRPCD) supports industrial research and pre-competitive development and aims at stimulating the development of networks between Public and Private Sector research actors.
- *Business Incubators, Technology Parks and R&D Centres Scheme* (BITPRDC) supports applied research and the conversion of research results into innovation and new business activities through funding of R&D centres, feasibility studies, business incubators and technology parks.

In the Bratislava region, the Business and Innovation Centre provides an example for successful support. Its main activities include the stimulation of the participation of Slovak RTD institutions and SMEs in international research (e.g. EU FP6), support for international technology transfer and entrepreneurship and research- and technology-centred regional development projects (e.g. regional innovative strategy in the Bratislava and Trnava regions).

Private Sector involvement in the governance of research institutions

Research organisations have a high degree of independence in defining and implementing their research policies. An increasing number of them involve Private Sector representatives as members of their scientific and advisory bodies. For instance, the biggest research organisation, the Slovak Academy of Sciences, invites representatives of the enterprise sector and of the non-profit sector to its Scientific Colleges, Boards and Committees. Following similar patterns, universities invite Private Sector representatives to become members of their Boards. For example, members of the Academic Board of the Slovak University of Technology in Bratislava come from the University itself as well as from the Private Sector, e.g. Slavomír Hatina, (former President of the Board of Slovnaft, Slovakia's largest oil refinery and currently President of the Board of Slovintegra, an institutional investor with a technology focus), and Jozef Uhrík (former President of the Board of Volkswagen Slovakia and President of the Car Industry Association of the Slovak Republic).

4. Overview: Types and extent of Private Sector involvement

As was already mentioned, structures and processes of policy decision making and of Private Sector involvement therein are in flux. The following paragraph represents a 'snapshot' which reflects the status at the time of preparation of this report.

Networking, general dialogue and informal involvement have grown continuously and are used extensively today. The Government and the Federation of Employers' Associations of the Slovak Republic, especially the Association of Industrial Research and Development Institutions collaborate continuously. During the instigation and design of research policy measures, the Ministry of Education is soliciting direct involvement at many occasions actively. This extends to the implementation phase, where the participation of experts from all research and development stakeholders (typically on a parity base) is sought.

In an *advisory role*, Private Sector representatives participate in several important advisory groups. In addition, consultations with stakeholder representatives are often used as described in the previous paragraph.

Formal involvement in research policy decision making processes has begun to emerge after 2004. Prior to official endorsement by the Slovak government, the proposed new research and innovation policy was open for public discussion. This culminated in a national conference attended by the Prime Minister of the Slovak Republic, several ministers, leaders of the parliamentary opposition, leading scientists and professors, managers of leading firms, representatives of trade unions and non-government organisations. All participants declared their support for the central vision and strategic direction defined in this document. The main conclusions of the public discussion were taken into account in preparing the final version of the document.

Joint activities between the Public and the Private Sector on the operative level (including PPP's) are used selectively, typically in regional research centres.

Staff interaction and mobility is only of marginal importance in the Slovak Republic. Mobility of staff between the Private and Public Sectors, temporary exchanges, etc. happen only occasionally, in most cases in the form of integration of actual or former business leaders in higher advisory or board positions.

Proactive involvement is increasingly used by associations representing Private Sector interests vis-à-vis policy makers. Its most common forms are ad-hoc statements and comments on new government policy proposals and feedback on their implementation. But there is still room for a more proactive attitude, using own policy proposals, white papers, etc., provided that the necessary research policy know how and capacities are available.

Research funding as a way to influence Public Sector research is limited by the current low level of Private Sector R&D investment.

5. Selected useful examples of transferable approaches and experiences

The following examples represent typical approaches used in Slovakia with the potential to be used also in other countries[11]:

5.1 Tax scheme favouring R&D donorships

After the tax reform (in force since January 2004) which introduced an equal 19 % income tax, there is no possibility for taxpayers to subtract from the tax base their expenses for the realisation of research and development projects. But any taxpayer can assign 2 % of his income tax to be remitted to an individual non-profit organisation (civic associations, foundation, non-investing fund, church, Red Cross or other non-profit organization). This provides a possibility for research and development organisations and associations to establish a civic association or a foundation and to invite taxpayers to assign this 2 % share to this activity.

[11] Representative examples to highlight good practices. Not intended to serve as a comprehensive list and description.

Pursuant to the Foundation Act (Act No. 34/2002 Coll.), the foundations may be established for public utilities, inter alia for the development of sciences. Such foundations may organise public money gathering for their purpose, including the development of science and research. In addition, an exemption from value added tax can be obtained for imported animals, biological or chemical substances intended for research, if they are provided free of charge to education and scientific research facilities.

5.2 Support for regional activities

After the transition to a market-based economy, most Slovak enterprises and in particular SMEs did not have the necessary attention and resources for longer-term development of their technological knowledge base or to become involved in R&D activities. Recognising this challenge, the Slovak Government introduced a group of policy measures and a network of support organisations, consisting of Regional Advisory and Information Centres12 (RAIC), Business and Innovation Centres BIC, First Contact Points and Business Incubators.

The major agency, managing most of these policy measures and the network of agencies is NADSME. Through this, the agency is in a strong position to create policy mixes which fit ideally to the specific regional needs and avoids overlapping of competencies and activities as happens in more complex set-ups.

The Direction of the Ministry for Industry of the Slovak Republic No. 13/2004 provides the basis for state financial support for industrial parks with a mission to develop research and new technologies. In the decision-making process on the state support, the parks with research and development centres for both fundamental and applied research belong to the preferred groups with high chance to get the state financial support.

[12] Operating as Public-Private-partnerships financed by Slovak and foreign sources, the RAICs provide support to SMEs.

Appendix 1: Overview over identified instruments for Private Sector involvement and their use in the Slovak Republic

Instrument		Intensity of use	Initiated by	Used for	Used in				Examples and remarks
					Instigation	Design	Implement.	Review	
General dialogue	Insight studies, roadmapping, foresight	Occasional	Both sides	Awareness, identification of emerging technologies & trends	✓				
	Conferences	Occasional	Public Sector	Discussion platform	✓	✓			National Conf. on Slovak Lisbon Strategy
	Brainstorming / task forces	Regular	Public Sector	Identification of priorities and possible policy actions	✓				Preparation of S&T documents
Informal decision involvement	Evaluation studies	Regular	Public Sector	Programme review, identification policy need				✓	
	Advisory groups	Frequent	Public Sector	Participation in design, evaluation, etc.	✓	✓	✓	✓	Government Board for S&T
	Informal consultations	Frequent	Public Sector	Exchange of viewpoints between stakeholders	✓	✓	✓	✓	Participation of the Unions of Employers
	Formal consultations	Frequent	Public Sector	”Official” opinion	✓	✓	✓	✓	Public discussion
Formal decision involvement	Task force	Not common	Public Sector	Joint policy development					
	Participation in decision making bodies (observer status)	Frequent	Public Sector	Decision involvement	✓	✓	✓		Participation in the Agency for the Sup-port of R&D
	Participation in decision making bodies with (co-) decision right	Frequent	Public Sector	Decision involvement, shared responsibility	✓	✓		✓	Boards of state R&D programmes
	Administrative / supervisory boards	Regular	Public Sector	Private Sector representatives involved in important institutional decisions		✓	✓		Agency for Support of R&D, Board for Science & Technology
Joint activities	Initiation of networks	Occasional	Both sides	Stimulation of joint Public-Private Sector initiatives		✓	✓		Within Houses of Technology
	Co-financing of projects / programmes	Occasional	Both sides	Sharing of cost / risks			✓		
	Public Private Partnership	Beginning to use	Both sides	Pooling of resources		✓	✓		Support for R&D in industrial parks
Staff interaction	(Temporary) Staff exchange	Occasional	Both sides	Enhance mutual understanding and mobility			✓		
	Staff mobility	Not common	Public Sector	Public Sector expertise in research leadership positions					
Unsolicited contributions	Statements, studies, white papers, etc.	Not common	Private Sector	Express views, recommend changes, influence decisions					
	Dialogue platforms	Beginning to use	Private Sector	Initiate / facilitate dialogue with public sector	✓	✓	✓		e.g. research universities, Houses of Technology
	Research funding	Frequent	Both sides	Initiate / support research in desired areas			✓		Non-investm. fund for support of R&D

Table 2: Overview of instruments used for Private Sector involvement

Appendix 2: Selected relevant sources and literature

1. General and country information

State Scientific and Technical Policy – available at http://www.minedu.sk/VaT/VaT.htm

www.veda-technika.sk – the information site of the Ministry of Education of Slovak Republic on science and technology

Selected documents on Science and Technology – available at http://www.minedu.sk/VaT/VDOC/vdoc_SVT.htm

Concept of the State-Governed Scientific and Technical Policy up to the Year 2005 – available at http://www.veda-technika.sk/angl/default.htm

Interim Report on the Performance of the "Concept of the State-Governed Scientific and Technical Policy up to the Year 2005 – available at http://www.veda-technika.sk/angl/default.htm

European Commission, Enterprise Directorate-General (2005): European Trend Chart on Innovation, *Annual Innovation Policy Trends and Appraisal Report Slovak Republic 2004-2005*

2. Important actors

http://www.vlada.gov.sk	Government Office
http://www.veda-technika.sk/rada_vvv.htm	Government Board for Science and Technology
http://www.nrsr.sk/appbin/xweb/xweb.asp?verb=explore|file=vybory\vvms	National Council of SR – Committee for Education, Sciences, Sport, Youth, Culture and Media
http://www.minedu.sk/DIEN/en.htm	Ministry of Education
http://www.economy.gov.sk/index/go.php?lang=en&id=30&idm=0	Ministry of Economy
http://www.build.gov.sk/index_en.php	Ministry of Construction and Regional Development

3. Other

http://www.sav.sk/index.php?	Slovak Academy of Sciences
http://www.apvv.sk/	Agency for the Support of Research and Development
http://www.sarc.sk/	Slovak Development, Science and Technology Centre
http://www.azzz.sk/a3z_us.htm	Federation of Employers' Associations
http://www.iminerva.sk/default.aspx?clt=2&ami=107&smi=178	Minerva Programme (Mobilisation of Innovation in the National Economy and the Development of Scientific-Educational Activities)
http://www.veda-technika.sk/angl/default.htm	The Information system of research and development potential of the Slovak Republic
http://www.cvtisr.sk/	Centre of Scientific and Technical Information
http://www.zsvts.sk/a_index.asp	Association of Slovak Scientific and Technological Societies

http://www.nadsme.sk	National Agency for Development of Small and Medium Enterprises
http://sario.sk	Slovak Investment and Trade Development Agency
http://www.uvtip.sk/sapv	Slovak Academy of Agricultural Sciences
http://irc-slovakia.sk	Innovation Relay Centre Slovakia
http://www.test.sopk.sk/an/index.php	Slovak Chamber of Commerce and Industry
http://www.azzz.sk/a3z_us.htm	Federation of Employers' Associations of the Slovak Republic
http://www.zps.sk	The Entrepreneurs Association of Slovakia
http://www.alianciapas.sk/pas/english/index.htm	Business Alliance of Slovakia
http://www.szz.sk	Slovak Craft Industry Federation

4. Further information and feedback

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