

"Bulgarian Academy of Sciences: Increasing Scientific Research Effectiveness"

Florian Fichtl's speech

Honorable Minister Fandakova, Honorable Academic Sabotinov, Honorable Ambassadors, Ministers, Deputy Ministers, Colleagues in Government, representatives of business associations and the scientific community.

I am honored to speak at this forum.

A change in Government, and the current economic situation, offer Bulgaria an opportunity to take stock, review its position in Europe and the World, identify and remove constraints to economic growth and unlock new sources of productivity to enhance competitiveness. In this line of thought, increasing the effectiveness of scientific research at the Bulgarian Academy of Science, and in Bulgaria, is of great importance because this could instigate firm innovation which lies at the heart of productivity growth.

Bulgaria -- and that is true for Europe as a whole -- **does not have the option to compete at the low end of the market but needs to absorb new technology, increase capacity for innovation, and promote industry-research collaboration in R&D.** At this stage, however, Bulgaria ranks very low on many related indicators. Bulgaria's level of competitiveness is ranked the 76th out of 133 countries and the lowest among EU countries as per Global Competitiveness Report 2009-2010 (World Economic Forum, 2009).

Bulgaria's challenge is to react to a dynamic environment where the technological frontier is constantly being pushed forward by more advanced countries. Bulgarian firms must acquire technologies faster than the technology frontier is being expanded or face a widening technological gap. Bulgaria cannot ignore innovation, which goes hand in hand with technology absorption. Therefore, I agree, Bulgaria must strengthen R&D capacity in its research institutes, universities and firms and lay the grounds for a competitive knowledge economy. Equally important, technology absorption and adaptation requires a highly skilled work force, underlining the necessity for Bulgaria to continue to modernize its education system at all levels.

Now, allow me to share three observations to be discussed at this forum.

- **First: Investment in R&D is low and in the past most of the investment has been for research, directed to the Bulgarian Academy of Science.** Private sector R&D expenditure, estimated at close to 0.2 percent of GDP is particularly low in Bulgaria which is not a good sign since privately funded R&D is more likely to respond to market needs. University research, which could be more dynamic in responding to private sector demand, has remained little developed, constrained by institutional issues and size of the universities. As you know, the EU's Lisbon Strategy calls for increasing R&D spending to 3 percent in 2010 with a larger share of the spending being done by the private sector. Achieving this goal in the medium-term will be a major challenge for Bulgaria and would require further strengthening conditions for private sector to innovate, i.e. enhancing competition which forces the private sector to innovate, and Government can support this by promoting competitive product markets and flexible labor markets and equipping the labor force with knowledge and skills needed by the economy.

- **Second: Human capital in the research sector is vital in identifying, absorbing, adapting and upgrading foreign technologies.** Availability of well-trained researchers, scientists and engineers is critical for innovation, but Bulgaria is currently behind. Many researchers have left Bulgaria to look for opportunities abroad. The total number of researchers in Bulgaria dropped significantly in the past decade. In two new EU countries, Slovenia and Estonia, respectively 32 percent and 61 percent of R&D personnel are employed by the private sector. In comparison, only 13 percent are employed in the private sector in Bulgaria. Moreover, the share of R&D personnel employed by the private sector has stagnated in the past decade and shows no signs of increase.
- **Third: A number of new government strategies, policies, institutions and programs for research, innovation and technology absorption have been established in the past five years.** However, new instruments to promote these programs have not always been adopted in a coherent manner through a clear strategy tailored to national priorities and a number of institutional challenges still persist.

... and make some suggestions to elevate the role of R&D and innovation:

International experience indicates that more effective and coherent policies can be developed through a single coordinating body and a single integrated strategy for research, innovation and technology. Bulgaria could consider developing an integrated national strategy for research and innovation policy under the guidance of a single consultative council that represents government, research and industry at a high institutional level. This would result in a more coherent national innovation system.

Competitive funding, clear performance metrics, and agreed strategic plans for public R&D funding need to be established. Funding of research institutes and universities needs to be increasingly competitive, with clear performance metrics, and in line with national research priorities. Multi-year funding commitments could be introduced to allow for research institutes and universities to be more strategic in their planning. Institutional funding may not only be conditional on prior performance but also on periodic independent evaluations of the recipient institutions.

Skill composition of the labor force matters for innovation. A more educated labor force is quicker in adopting new technologies. Research indicates that tertiary education investment increases a country's ability to make leading-edge innovations, while primary and secondary education impact the country's ability to implement existing technologies. Despite impressive reforms in the education sector in recent years, Bulgaria continues to face the major challenge of improving learning outcomes, as evident from the recent 2006 PISA student assessment which highlighted significant reading literacy deficits of 15 year-olds at the end of the compulsory education cycle. At the same time, tertiary enrollment rates in Bulgaria are much lower than in the rest of the EU. The fact that in the age of globalization, knowledge is becoming an increasingly important driver of growth further emphasizes the importance of higher education.

Universities could play an important role in supporting private sector innovation through research. The Government may need to introduce incentives for universities to strengthen their research capabilities. Education and research are poorly integrated in Bulgaria, and universities tend to focus almost exclusively on their teaching roles. Universities and research institutes play complementary roles in the national innovation system and a weak university research base cannot necessarily be compensated solely by strengthening research institutes. Research could be encouraged in Bulgarian universities by improving governance, consolidating universities, and increasing the share of competitive funding reserved for universities until universities have developed their research capabilities. University research could be boosted by linking educational curricula with research activities. Universities will have to aim to attract more science and engineering graduate students, which represent essential assets for certain types of industry research projects.

Finally, more public incentives are needed for R&D institutes to increase their collaboration with industry, particularly in areas in which domestic firms are lagging behind their European counterparts. In this respect, reform in the Bulgarian Academy of Sciences is expected, especially addressing those research institutes that have the highest potential to be re-oriented toward industry. Measures that can contribute to reshaping these institutes include the introduction of market departments, incentives schemes for researchers to seek contracts with industry, requirements for all self-initiated research projects to be formally vouched by industry, project management training for researchers, the introduction of researcher mobility schemes to increase their exposure to industrial problems and the introduction of industry representatives in the boards of directors of the individual institutes. These measures, together with a shift of focus from institutional to competitive funding, can help re-orient selected institutes operating under BAS towards the needs of domestic firms. Today's meeting and the topic of the conference are very encouraging, and we are delighted to support efforts to increase the effectiveness of research, that is the effectiveness of precious resources allocated for it, to support the aspiration of BAS to become more competitive, to raise standards and impact of research to the benefit of the Bulgarian economy and society.

Thank you very much.