

## Structural Funds and perspectives for Polish science

by Michal Sewerynski

In the financial perspective 2007-2013 Poland will benefit from the inflow of 67 billion euros of structural and cohesion funds. These funds will be used to modernize infrastructure and enhance the productive capacity of human capital in many sectors and across the country. About 6% of this amount, or over 4 billion euros is earmarked for various projects concerned with science sector. On average this represents additional one half of the annual science budget in Poland (at present close to 1.0 billion euros).

While related new opportunities for the Polish science are very promising, the administration is determined that these extra funds will be primarily directed towards raising an innovative capacity of the science sector and intended to help the industry to create increasing demand for innovation.

One of the fundamental weaknesses of the Polish R&D lies in lacking of sufficient links with the economy and society. This situation is rooted in multiple causes, such as traditionally high esteem associated with basic research, politicizing of science under the soviet system and a fragile industrial base unable to create sufficient demand for scientific results and innovation.

Since the 1990's scientists have gained the freedom to perform research according to their interests. What is more, in the name of full democracy they collectively became responsible for science policy and funding allocation. The commercial exploitation of scientific achievements was not a universal priority. Particularly, that science funding was inadequate and aiming rather at obsolete, abstract targets than the real needs. In response, the society turned out to be disillusioned with the usefulness of science, which lead to further reduction of science funding.

In this context participation in the European Framework Programmes, first as an associated country and then as a member with the full rights, was to certain extent an eye opener. While Polish teams from academia and research units have been able to engage in competition, albeit at low but acceptable level, the industry based teams are virtually nonexistent. This unfavourable situation continues to date and it is increasingly clear, to the scientists themselves and to the science policy makers that prolongation of such isolation from the real life problems is very detrimental and will result in eventual deterioration of both quality and capacity of the scientific research in Poland.

The science administration, particularly since Poland's accession to the EU, has undertaken a number of initiatives to reverse this isolationist trend. However, with persistently low funding from both public and private sources it became a task doomed to failure. For the modern industry requires modern science, capable of providing innovative solutions, developed in high-tech laboratories and using up to date infrastructure. Unfortunately these in the first place are lacking in Poland. The severity of such situation is aggravated by the fact that Poland intensified production of university graduates, creating on an unprecedented scale large numbers of well educated, dynamic young people. But the scientific career is not sufficiently attractive for them.

These developments therefore lead to recognition that if Poland wants to realize its capacity to be a useful and meaningful player on the European science scene, it needs a steep change in investment in science. The present government plan, still in early stages of implementation, to double the current science funding within four years and to gradually aim for the Barcelona target of 3% GDP, is clearly a step in the right direction, but in the present circumstances does not seem to be sufficient.

However, mentioned above additional financial resources should open new horizons in front of the Polish science. The bulk of these funds, under the National Programmes "Innovative Economy" and "Infrastructure and Environment" will be used to modernise existing and develop new research and academic

infrastructure (1.3 + 0.6 billion euros). Interdisciplinary, integrated research centers will be created in the fields of materials sciences (Warsaw and Wroclaw), in the biomedical sciences (Warsaw), in the advanced technologies (Poznan), in the physical sciences (Krakow) and in the clean coal technologies (Katowice).

Second biggest component of the funds, under the National Programme "Innovative Economy", will be dedicated to development of new technologies (1.3 billion euros). Again, the relevant activities will be carried out in selected, leading research centres across the country in many diverse research domains. They will include fields such as high temperature reactor technology, nanotechnologies and new materials, medical diagnostics and therapies, body armour technologies, biodegradable materials and high energy transmission.

Finally, the strengthening of human capital (1.0 billion euros) will be undertaken under the National Programme "Human Capital". This activity will include various schemes and programmes of continuous and tertiary education as well as assistance in early stages of professional career. Selected, top universities will be given tasks to undertake specially designed professional education programmes. Also, an emphasis will be placed on raising the number of doctoral students. The most aspiring of these activities concerns a plan to establish 'elite' interdisciplinary PhD studies, targeting the brightest and ambitious to become future leaders in many aspects of the society life.

Important aspect of all these activities will be to enhance an innovation absorption capacity of enterprises, by system of sponsored projects, undertaken jointly with research units and academia, and grants enabling employment of scientists in non-research sectors. The other key issue will be to raise attractiveness of the research career, particularly amongst university and PhD graduates.

While such a perspective looks very promising, its realisation in reality will require a great effort of all stakeholders, namely the scientists and research institutions, the industrial enterprises and the administration. Absorption of additional funds and their wise and effective use constitutes considerable challenge. In order to make this a successful operation, modernisation and reform of science system is indispensable. Such reform has been already initiated, and its key element includes creation of two funding agencies. One concerned with the realisation of large, strategic research programmes and the other directed towards the frontier research. Further actions will also include streamlining of existing research institutes, both industrial and those belonging to the Polish Academy of Sciences. The underlining theme of this reform will be a separation of science policy making from research financing and from research performance. However, the above mentioned challenges cannot be met only by the administrative measures. The change of attitudes towards more entrepreneurial, more pro-innovative, more society oriented has to take place foremost in the minds of scientists. The science administration in Poland is working together with many scientific communities to achieve this transformation.

Summarising, it should be underlined that availability of structural funds for Polish science opens many new and exciting perspectives. It will change Polish science landscape during the coming decade. However, it also brings new challenges, which will require mobilisation of all stakeholders and resources available to them.

*Prof. Michal Sewerynski*

*Minister of Science and Higher Education*

*Poland*