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**Science diplomacy for a
sustainable development: from the
perspective of the South**

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Science diplomacy for a sustainable development: from the perspective of the South

Bonn, 9 November 2009. In Budapest last weekend the 4th World Science Forum under the auspices of UNESCO, the International Council for Science (ICSU) and the Hungarian Academy of Science was ended. 500 representatives from politics and scientists from more than 80 countries gathered to discuss the relevance of knowledge in questions concerning the future. Given the global economic crisis, the key question in the foreground was: what role can science play for sustainable development.

10 years after the first global science conference, which likewise took place in Budapest in 1999, the global scientific landscape has changed. China, India, Brazil and Russia have developed up robust scientific systems in parallel to their economic growth. In Brazil, the number of scientists holding a doctorate has tripled per year during the past decade. In spite of everything, the way to a science-based economy is still a long way off. Although on the whole more scientists are being trained, only very few of them have any engineering knowledge, which is required in industry. Universities and industry are thus collaborating in exceptional circumstances.

Also with regard to state investments in research and development (R&D), none of these emerging economies has exceeded the critical limit of 2% of the GDP. Innovation has still not been made the key premise in the manifesting industry. A lack of information and an absence of qualified research staff restrict the innovative potential of most companies in these countries. Social inequalities and huge income differential are still firmly anchored at a structural level.

Only during the 1990's did the governments in these newly industrializing countries explicitly take action to associate their development policy strategies with industrial policies in order to thereby increase the innovative potential in manufacturing and services.

China for example has designed an action plan for the development of science and innovation until 2020. Brazil too has been systematically investing in industry-oriented research since the late 1990's and has passed an innovation law, which makes it easier for university researchers to move into industry. Similar initiatives, even if somewhat hesitant, are being implemented in India and South Africa. These strategies are founded on the basic idea to increase the competitiveness of economies and anchor growth firmly on science and innovation-based approaches in the long-term.

In many different ways, the governments learn from the experience of the industrialized nations and make use of the methodology of the OECD. At the same time, important new empirical and policy models are developed here with regard to the promotion of science and innovation in the context of social inequality. These models can also be interesting for less developed countries and moreover give reason to reflect on the traditional indicators for research-based innovators.

Last week, the participants of the World Science Forum in Budapest were well aware of the great importance of science for global development. This insight did not exist around ten years ago.

How to structure further education and training measures universally and thus promote qualified staff in all levels and sectors of the economy is a central problem in the development strategies in Brazil, India and South Africa, and partly in China and Russia. Frequently, the countries are



facing the challenge that on the one hand they are striving for international excellence in science and at the same time first have to develop the educational system in its diversity. Despite increasing collaboration between researchers from emerging economies and already industrialized nations, it is still difficult to use and disseminate knowledge as market innovation in a way that will promote development.

Most emerging economies have made great economic policy progress in the past few years and are now playing a stabilizing role in the global economy in the present crisis. This is not sufficient however to develop the innovative potential that is necessary to transform the manufacturing systems of the emerging economies and developing countries in the required time and put these on the path to sustainable, i.e. above all low-carbon growth. This will hardly be possible without increase cooperation in science and technology.

The international economic crisis shows clearly the limits of state policy and the necessity of new international forms of taxation. It is becoming increasingly clear that independent development strategies cannot lead to a long-term transformation to a science-based economy.

For this reason, governments must act together to strengthen their activities in the area of science and innovation diplomacy. Science diplomacy is based on the premise that development can only be successful if besides national strategies the global character of development is also taken into account.

Answers to global challenges such as climate change, migration, the fight against poverty and the development of a global knowledge community require new common efforts in science diplomacy. Given the problems that are looming for the world community in the next few decades, a global science pact is necessary, which expressly incorporates the emerging economies and developing countries and makes knowledge on the solution of global problems a generally accessible global asset.

On 10 November, the UNESCO World Science Day was celebrated. This day commemorates the important role played by science in the promotion of peace and development.

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