

Ciro de Falco
Executive Vice President
Inter-American Development Bank

Global Forum:
Building Science, Technology, and Innovation Capacity for Sustainable Growth and Poverty
reduction

The World Bank

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Introduction and Welcome

Dear Ministers, distinguished presenters, ladies and gentlemen:

On behalf of the President of the Inter-American Development Bank it gives me special pleasure to welcome you all to this Global Forum on building Science and Technology Capacity for Sustainable Growth. I would like to take this opportunity to thank the World Bank for taking the lead in organizing this event, which the IDB has wholeheartedly supported. As you can see in the program, a number participants from Latin American countries responsible in public and private institutions, at national or local levels, for the development of STI capacity programs will share their experiences with you over these 3 days.

In front of this distinguished audience, there is no need for me to insist upon the importance of building STI capacity for sustainable growth and poverty reduction. In my remarks today I mainly want to address two topics: The first is related to situation and performance of Latin America and the Caribbean with respect to science, technology and innovation. The second is to share with you what the IDB is doing in the LAC region to strengthen STI capacity.

STI for Development in LAC

After years of benign neglect, most LAC countries are increasingly acknowledging the importance of promoting investment in STI activities and human capital to foster sustainable growth, to undertake structural adjustment of their productive sector to increase its international competitiveness, and to better respond to pressing social and environmental challenges. Their efforts, however, still don't measure up to those of their main competitors across the world to compete in today's knowledge economy.

- LAC countries are notable under-performers in knowledge investment. Brazil, whose R&D/GDP ratio, at 1.1 percent is the highest of the region, was overtaken by China in 2000. China is now investing more than 1.4 percent of its GDP in R&D. Korea alone invests the double in R&D than the whole LAC region.
- Contrary to advanced countries, in LAC countries R&D is overwhelmingly funded and performed by the public sector, including universities. The private sector, which is the main source of innovation, invests very little in R&D; and the linkages between this sector and public research are weak, hindering the leverage effects of collaboration on the expansion of research and innovation that characterize STI systems in most advanced countries.
- The supply of high-skilled personnel, and more specifically of scientists and engineers, remains limited, even in areas in which countries are well endowed in terms of natural resources. India and China, on their side, are creating large pools of talent, skilled in disciplines such as physics and chemistry that are increasingly falling out of fashion in the UK and the US. Between them South China, India and Korea have about 2500 universities.
- In many of the lesser-developed countries the basic technological infrastructure, including ICT, a key enabler to knowledge based economy, is lacking; and capital markets are ill adapted to the financing of innovation

But I would not like to convey too bleak a picture of the current situation. There are undoubtedly bright spots in the region. In many countries successful programs to enhance STI capacity are progressively implemented at national or more often than not at local levels. The development of ICT and their application in the economic and social spheres is rapidly increasing. Access to technological information and technology transfer mechanisms are improving. Best or better practices to promote innovation are disseminated, such as the one of Fundación Chile that you will hear about during this Forum. Or to muster STI capacity to add value to natural resources while at the same time tackling energy and climate change problems as is the case of the ethanol program in Brazil.

Let me now turn to the IDB Vision

Historically the IDB has played a pioneering role in the development of S&T capacity in the region, providing cumulative funding of over \$ 2 billion for the S&T sector from 1962 to 2006, or over US\$ 4 billion, including related support to higher education and agricultural research. These efforts have contributed to training thousands of scientists, to the creation or expansion development of centers of excellence in over 120 universities, and the establishment of national science and technology institutions. But the outcomes of such efforts still fall short of responding to the current and prospective challenges. Today it is vital that within the region we engage in a dialogue on effective strategies for building technological capacity and including S & T in the policy agenda of the countries.

In this context the Bank priority lines of action in fostering STI the next three years focus on:

(i) Mainstreaming STI issues in the Countries Political Agenda and in the portfolio of Bank operations ; (ii) Strengthening Institution Building and Technological Infrastructure; (iii) Developing Human Resources; (iv) Supporting R&D and Innovation in Strategic Sectors or Technologies; (v) Promoting Innovation in the Private Sector; and (vi) Fostering Regional Cooperation in STI.

On this occasion, I would like to highlight the issue of qualified human resources, a keystone of the capacity of a country for effectively using knowledge for development. To ensure meaningful impact, actions geared towards increasing the availability and the use of improved human capital need to encompass both the supply and the demand side. On the supply side, the Bank aims at supporting policies and programs aimed at fostering the production of a skilled work force at post secondary technical levels, and increasing the supply of science and engineering graduates, notably through the financing or co-financing of student loans. On the demand side the Bank expects to support incentives systems increasing the capacity of firms to recruit research and high skilled personnel, fellowships or traineeships schemes that facilitate the mobility of science and engineering graduates in the private sector, as well as life long training programs. The Bank also aims at placing renewed importance to acting in the field of Higher Education, particularly in the areas of science, engineering and technical training, and with emphasis on curricula design and accreditation.

But, we cannot think of developing capacity for sustainable growth without a solid base of Technological Infrastructure

Many countries of the region still lack some of the basic infrastructure and services that is crucial for establishing and disseminating standards and ensuring quality control (metrology laboratories). Services specialized in the provision of technological information or transfer, are also very often underdeveloped. Intellectual property regimes and patent offices frequently need to be better attuned to the needs of would be innovators both in terms of the protection they offer and access to new knowledge. By international standards, many countries of the region are still lagging with respect to public and private investment in ICT. Although the IDB is committed to foster such investment more efforts will be made to support this type of infrastructure and equipment, as there is widespread evidence of its contribution to knowledge diffusion, skills improvements and productivity gains.

Walking the Talk: IDB's Commitment and Actions

Let me now highlight some examples of what the IDB is doing towards strengthening STI capacity in LAC.

At the Summit of the Americas, at Mar del Plata in 2005, the Bank committed itself to promoting increased funding and investment in science and technology, engineering and innovation. In particular to building local engineering capacity to create knowledge that ensures the solution of local needs and opens the chance to compete for global opportunities. Engineering excellence is a key ingredient in the application of S&T to the solution of the world's economic and social problems to achieve economic growth.

IDB as a Convener: Facilitator of dialogue on key issues

E.g.: STI Network of the Regional Policy Dialogue

In the framework of its Regional Policy Dialogue Initiative, the IDB recently established a Science, Technology and Innovation Network. This network provides a Forum for high-level policy makers of countries in the region to exchange their experiences and identify best practices in STI policies and programs. While the Bank is essentially a demand driven institution the Policy dialogue is a powerful mechanism to identify priority lines of action and regional cooperation initiatives.

The first hemispheric meeting of the network will be take place in April 2007 and focus on s two topics: (a) Incentives systems to support innovation in the private sector and (b) governance of public research institutions, in particular as regards their collaboration with the industry and the contribution to forms on the application of S&T to social needs such as energy, health and environment.

The IDB also acts as a Generator of Initiatives

E.g.: Regional Engineering Accreditation System for the Greater Caribbean Region

Following the Action Plan from the Lima Declaration and the Summit of the Americas in 2004, the Regional Public Goods Program of the Bank has recently received a proposal to develop a Regional Engineering Accreditation System, comprised of common standards, methodology and criteria that will be widely adopted in the participating countries under the leadership of a collaborative body for the Greater Caribbean countries. In this sense, if approved as I hope it will, the region and beneficiary countries would benefit through an expanded national capacity to invent and innovate and a strengthened capability to plan, execute, and maintain infrastructure of national importance.

E.g.2: Bio Fuels

While there is probably some hype surrounding biofuels, for many Latin American countries the potential is indeed very important. In fact, Brazil's long term commitment to the development of biofuels has not only produced the world's most efficient ethanol industry, it has clearly demonstrated what a serious long-term commitment to Research and Development in the agro-industry can do to reduce dependence on imported fuels, lower vehicle emissions and offer greater consumer choice.

We are currently working closely with the Brazilian government on the early stages of a strategic plan to help them develop a world-class innovation and production hub around biofuels in that country, and to promote the commoditization of these fuels in the world market. This initiative will also emphasize transferring know-how and best practices to other countries in the hemisphere.

E.g 3: Public/private partnerships

If governments have an undeniable role to play in strengthening STI capacity, at the end of the day innovation is primarily a private sector activity. Development Banks must be able to muster the tangible and intangibles resources of large innovative firms and to draw on their concrete experience in enlisting them in S&T related development activity. The IDB has done just that recently in setting up a formal framework scheme for partnerships with private enterprises and signing MOUs with such firms as Microsoft, Hewlett-Packard and Intel. Collaboration with such firms can certainly benefit from their technological expertise and capacity in projects aimed at enhancing human capital, raising productivity, and reduce poverty. In this context, the recent wide-ranging Bank Initiative on “Opportunities for the Majority” will draw upon the advantages offered by the private sector in the development of collaborative projects in which the use and dissemination of technology is an important component.

IDB Loans and Technical Assistance

E.g: AR- Technological Modernization III

In 2006 the IDB approved to Argentina its largest loan for modernization of science and technology (US\$ 280 M). The program includes a set of actions to promote, encourage and facilitate the links between small and medium-sized companies, and the primary sources of scientific and technological knowledge. Main areas expected supported include biotechnology and biological sciences; chemical sciences; information technology; agricultural machinery; cattle and crop farming, forestry and fisheries technologies; food processing and medical sciences.

E.g: Korean Technology Fund

The Knowledge Partnership Korea Fund for Technology and Innovation is a new instrument of the IDB, made possible by a contribution of US\$50 million from the Korean government, that

will contribute to increase the flow of technical assistance in the area of STI. Particular emphasis is given to proposals from lower income countries and countries with a weak science and technology capacity. As of January 2007, 10 projects have been approved for a total of 2 million US dollars and 20 more proposals are in the pipeline. The first approved project aimed at developing an e-government strategy in the Dominican Republic by strengthening STI capacity in the ICT sector.

Concluding words

In thanking again the World Bank for having take the initiative of convening this important Forum and asked us to contribute to it let me conclude with one word of modesty and another of hope. Modesty because for Multilateral Financing Institutions like the World Bank and the IDB, the power to disburse funds for loans and technical cooperation should never lead to attitudes of righteousness and pretenses of certitudes. Evidence-based assessment of the impact of our operations and constant learning through our and others' experience should be an ingrained part of our culture, particularly in such a rapidly evolving area as Science and technology. Hope because this Global Forum is precisely a means to enrich our experience and draw on it to a higher efficiency and impact of our future operations in STI capacity building.

In 1915 Lawrence Bragg, Nobel prize of physics said: *“The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them”*. Today, I would like to add: Let's discover more during these three days but above all let these discoveries lead us to improve our actions in favor of development. I wish you a fruitful journey ahead. Thank you.