

**This Report will be presented to the  
United Nations Secretary General, Kofi Annan  
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**FOR IMMEDIATE RELEASE**

**STRONG SCIENCE AND TECHNOLOGY CAPACITY A NECESSITY FOR EVERY NATION**

NEW YORK CITY – All nations, whether industrialized or developing, face a broad array of challenges that will require the application of up-to-date scientific knowledge and technology. Such challenges include stimulating economic growth, mitigating environmental problems, safely adopting beneficial new technologies, and quickly responding to sudden outbreaks of new diseases. No nation can now afford to be without access to a credible, independent science and technology (S&T) research capacity that would help it to develop informed policies and take effective action in these and other areas, says a new report by the InterAcademy Council (IAC), an organization in Amsterdam created by 90 of the world's science academies.

These are among the findings of *Inventing a Better Future: A Strategy for Building Worldwide Capacities in Science and Technology*, presented today to U.N. Secretary-General Kofi Annan at the United Nations. The IAC study panel that drafted this consensus report included experts from 11 different nations, and was co-chaired by Jacob Palis, professor, Instituto Nacional de Matematica Pura e Aplicada, Rio de Janeiro, Brazil, and Ismail Serageldin, director, Bibliotheca Alexandrina, Alexandria, Egypt.

"*Inventing a Better Future* delivers on the commitment that member academies have made to apply sound scientific knowledge and evidence-based principles to the critical issues that affect all nations: poverty, hunger, disease, the effects of globalization, and economic transformation," said Bruce Alberts, IAC co-chair and president of the U.S. National Academy of Sciences. The report calls for a worldwide effort from many sectors, with a strong emphasis on what the world's scientific community can do to help bring the benefits of science and technology to every corner of our globe." Goverdhan Mehta, IAC co-chair and former president of the Indian National Science Academy, emphasized that "the culture and values of science are key to building a more rational and peaceful world community. Science serves to transcend and connect national cultures. It can positively affect societies in which it flourishes, including those that have in the past been racked by war and civil or economic strife."

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Enhancing local S&T capacity is essential, the report states, because trends in the development and use of new technologies have left a growing gap between "have" and "have not" nations. The world is experiencing a vicious cycle in which developing countries that lag in S&T capacity fall further behind, as industrialized nations with financial resources and a trained scientific work force exploit new knowledge and technologies more quickly and intensively.

Stark differences exist in R&D budgets. Wealthy industrialized nations spend between 1.5 percent and 3.8 percent of their gross domestic product on research and development. While India allocates 1.2 percent; Brazil, 0.91 percent; and China, 0.69 percent, most developing nations devote less than 0.5 percent of GDP to research and development. Similarly, in high-income nations, the number of scientists and engineers averages 3,281 per million population. In middle-income nations, there is an average of 788 scientists and engineers per million. But in most developing nations, the number is too small to be reliably calculated.

These types of deficits, in the case of rapidly emerging fields such as biotechnology and nanotechnology, can leave entire developing economies behind. And when nations need to respond to diseases such as HIV or SARS, or make decisions about issues such as stem-cell research or genetically modified foods, this lack of S&T infrastructure can breed unfounded fear and social discord.

"This study panel," the report says, is "convinced that all nations, particularly developing ones, require an increased level of S&T capacity to enhance their ability to adopt new technologies – as in those related to the new life sciences – and adapt them to local needs. Enhancing S&T capacity in developing countries is truly a necessity and not a luxury."

*Inventing a Better Future* recommends that every nation develop an S&T strategy – one that reflects local priorities and specifies available funding – in consultation with that country's science, engineering, medical, and industrial communities. Each nation's strategy should include support for basic science, education, and training that will allow it to achieve local competence in selected areas of national priority. The report suggests that developing nations commit a minimum of 1 percent to 1.5 percent of their GDP to S&T capacity-building, and it stresses the critical importance of using competitive merit reviews to allocate these resources.

Other keys to success include national policies that help develop, attract, and reclaim S&T talent; regional cooperation in training scientists; the creation of strong universities and autonomous research and training centers of excellence; and integration of a nation's talent pool into regional or global "virtual networks of excellence" in areas of prime S&T interest. Clear national legal frameworks that promote and protect public-private partnerships are also critical, as are increased international collaboration and the expansion of global funding for local S&T capacity building.

The report asserts that there is no reason why, in an era in which national economies are already tightly interconnected by air travel and the Internet, S&T capacity-building should not be a worldwide priority. Developing countries must begin strengthening their national capacities. "And they must do so soon through their own focused efforts, with help from their friends. Given the current rate of change in science and technology, there is no time to waste if the majority of humanity is not to suffer further marginalization," the report concludes.

In 2000 the leaders of the world's national science academies formed the InterAcademy Council, which is headquartered at the Royal Netherlands Academy of Arts and Sciences, to mobilize the world's best science and provide expert advice to international bodies such as the United Nations and the World Bank. The IAC is a nongovernmental organization that provides its advice on a project-by-project basis. It is funded by private foundations and international organizations. Its governing board comprises the presidents of 15 academies of science from Brazil, China, France, Germany, India, Israel, Japan, Malaysia, Mexico, Russia, South Africa, Sweden, the United Kingdom, the United States, and the Third World Academy of Sciences.

(MORE)

Each IAC study panel is established by the governing board after consultation with the 90 science academies of its parent organization, the InterAcademy Panel, headquartered at the Third World Academy of Sciences in Trieste, Italy. IAC's consensus studies are subjected to intensive international peer review to ensure that they are free of national or regional bias. Upcoming IAC reports will focus on such topics as agricultural productivity in Africa, global transitions to sustainable energy systems, and the role of science in World Heritage Natural Sites, which are places around the world that the United Nations and more than 100 countries have agreed to help preserve because of their outstanding cultural, ecological, or scenic value.

A panel roster and other information about the IAC's membership follow.

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Reporters may obtain copies of *Inventing a Better Future: A Strategy for Building Worldwide Capacities in Science and Technology* from the Office of News and Public Information (contacts listed above).

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[ This news release and the report are available at <http://national-academies.org> ]

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## InterAcademy Council

Sound scientific knowledge is fundamental to addressing the critical issues – such as economic transformation and globalization; reduction of poverty, hunger, and disease; and the sustainable use of natural resources – facing the world today. The InterAcademy Council (IAC) was created by national science academies to mobilize the world's best scientists for providing expert knowledge and advice to international bodies, such as the United Nations and the World Bank, charged with addressing these issues. The IAC aims to complement, rather than duplicate, the roles of other scientific institutions, such as the Third World Academy of Sciences (TWAS) and the International Council for Science (ICSU).

The IAC brings together the collective expertise and experience of national academies from around the planet. Headquartered at the Royal Netherlands Academy of Arts and Sciences in Amsterdam, the IAC governing board is composed of the presidents of 15 national academies of science and equivalent organizations – representing Brazil, China, France, Germany, India, Israel, Japan, Malaysia, Mexico, Russia, South Africa, Sweden, the United Kingdom, and the United States, plus the Third World Academy of Sciences. Additional programmatic consultation is provided through the InterAcademy Panel on International Issues (IAP), representing over 90 national scientific academies.

As a nongovernmental organization, the IAC works on a project-by-project basis. When requested to advise on a particular issue, it assembles an appropriate international study panel, composed of members who serve on a voluntary basis. The panel prepares a draft report on its findings, conclusions, and recommendations, which is then subjected to an intensive process of peer review by experts in the field. When the IAC Board is satisfied that the study panel has adequately responded to feedback from this outside review, a final report is released to the requesting organization and the public. Every effort is made to ensure that IAC reports are free of any national or regional bias.

IAC projects are funded by multiple sponsors, including private foundations and international bodies. U.N. Secretary-General Kofi Annan in particular has welcomed the creation of the IAC as a platform for launching studies of specific interest to the U.N. While primarily designed to respond to external requests, the IAC will undertake self-initiated projects.

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**January 2004**

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<b>Switzerland</b>	Council of the Swiss Scientific Academies
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