A PROPOSAL FOR A SCIENCE AND TECHNOLOGY SUSTAINABLE DEVELOPMENT FUND AS PART OF A PORTFOLIO OF S&T FUNDING MECHANISMS

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THE CHALLENGE

UN Secretary General Kofi Annan reflected a growing consensus when he wrote in the Millennium Report to the General Assembly that “Freedom from want, freedom from fear, and the freedom of future generations to sustain their lives on this planet” are the three grand challenges facing the international community at the dawn of the 21st century.

Science and technology are increasingly recognized to be central to both the origins of Secretary General Annan’s three challenges, and to the prospects for successfully dealing with them. But there is a great imbalance in the resources and attention devoted to harnessing science and technology in the service of these three transcendent goals. Efforts to achieve “freedom from fear” and “freedom from want” are supported by mature, problem-driven R&D systems based in military establishments and international agricultural and health research systems. Even though much more could be done to strengthen and appropriately direct these efforts, they constitute a reasonable starting point for generating knowledge to achieve freedom from fear and want.

In contrast, efforts to achieve a more sustainable future for the planet and its peoples are relatively new because, in the words of the Secretary General, the “founders of the UN could not imagine that we would be capable of threatening the very foundations for our existence.” (Annan 2000). As a result, efforts to harness science and technology for sustainable development have largely had to draw on R&D systems built for other purposes – begging monitoring data from the world’s military establishment, piggy-backing on the already over-extended international agricultural research system, and borrowing insights gained from basic research programs on global environmental change. With a few important but relatively small and under-funded exceptions, efforts to “sustain the lives of future generations on this planet” still lack dedicated, problem-driven and solution-oriented R&D systems with attendant funding mechanisms for research and technology innovation of anything like the scale or maturity of those devoted to security and development.

1 Significant contribution to this proposal was made by Francisco Sagasti, though he was not in attendance at the Mexico City Workshop.


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THE EMERGING NEED: A NEW GENERATION OF INTERNATIONAL FINANCING FACILITIES

At the same time that there is a lack of S&T funding mechanisms, there is an increasing demand for building research capabilities, expanding the intellectual capital engaged in science and technology, and developing and deploying appropriate technologies. Through both existing literatures and a series of international conferences on S&T for sustainable development in the last several years, this demand is seen growing across sectors (e.g., energy, water, natural resource management), across countries (from industrial economies to emerging economies to least developed countries), in international and domestic scientific organizations (e.g., International Council for Science (ICSU), the Inter-Academy Panel, and Third World Academy of Sciences), research institutes, universities, NGOs, and sub-national governments addressing sustainable development issues. Parallel with this increasing (unmet) demand, is a growing interest in socially responsible investment by foundations, firms, fund managers, individuals, and countries. As sustainable development has risen on international, national, and local agendas, it has been difficult to link this supply and demand in such a way that adequately supports the deployment of S&T for sustainable development.

The array of current multi-lateral and regional development Funds and the World Bank have been instrumental in the financing of development projects throughout the world. These organizations, however, are less suited for building S&T capacities. While these organizations have recently been attempted to broaden their portfolios to better meet sustainable development needs, the mandate, structure, culture, project appraisal and evaluation techniques of these banks have made it difficult to engage in the kinds of flexible, problem-driven, long-term research and development and the building of human and technological capital that is required for a sustainability transition. Addressing these needs, particularly in the emerging economies and other developing countries around the world, is seen as a fundamental prerequisite for facilitating sustainable development as it can enable the knowledge bases and intellectual capital so essential to the needed transitions to sustainability throughout the world.

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3 These conferences included: "Transition to Sustainability in the 21st Century" a conference of the InterAcademy Panel on International Issues, Tokyo, Japan, May 2000; “Friibergh Workshop on Sustainability Science”, Friibergh Manor, Orsundsbro, Sweden, October 2000; “Challenges of a Changing Earth: Global Change Open Science Conference”, Organized by the International Human Dimensions Programme on Global Environmental Change (IHDP), World Climate Research Programme (WCRP), and the International Geosphere-Biosphere Programme (IGBP) Amsterdam, The Netherlands, July, 2001; “Next Steps in Linking the Global to the Local: Challenges for Research, Assessment and Decision making in a Multi-Level World” at the Open Meeting of the Human Dimensions of Global Change Research Community, Rio de Janeiro, Brazil, October, 2001; Science, Technology and Sustainability: Harnessing Institutional Synergies, Trieste, Italy, organized by the Third World Academy of Sciences (TWAS), February, 2002; “Science and Technology for a Transition Toward Sustainability” A symposium at the Annual Meeting of the American Association for the Advancement of Science (AAAS), Boston, Massachusetts, United States, February 2002; “Mobilizing Science and Technology for Sustainable Development”, Sponsored by ICSU, TWAS, and ISTS , Cambridge, Massachusetts, United StatesApril, 2002; Cites for ICSU, AAAS meetings, Corell; Regional Workshops on Science and Technology for Sustainability sponsored by ISTS: Abuja, Nigeria; Chiang Mai, Thailand; Santiago, Chile; Bonn, Germany; Ottawa, Canada (Winter and Spring 2001-2002).
**THE VISION: A SCIENCE AND TECHNOLOGY SUSTAINABLE DEVELOPMENT FUND AS PART OF THE PORTFOLIO OF S&T FUNDING MECHANISMS**

A general consensus is emerging that moving forward in supporting S&T for sustainable development will require not only radical increases in investments in S&T, and restructuring of existing funding mechanisms at local, national and regional scales, but a multinational funding mechanism that is designed specifically to meet the unique needs of harnessing S&T for sustainable development. Such a funding facility would have a broad mandate for building social, human, and technical capacity, enhancing education, supporting research institutions, and improving scientific capacity and technology innovation, development and dissemination, particularly in emerging economies and other developing countries. Such a funding facility would be founded on but would likely need to extend the remarkably effective financial leveraging strategies of existing multinational development banks, hence as part of a new generation of financing facilities, it might be called a Science and Technology Sustainable Development Fund (STSDF). It is proposed, therefore, that such an international funding facility should, as a minimum, include:

- A diverse portfolio of products (e.g., innovation and venture capital funds, education funds, loans, grants, start-up funds, etc.) that could meet heterogeneous needs in different types of countries;
- The ability to leverage resources to build countries’ own research capacity and appropriate technology;
- The capacity to tap resources from private capital markets, which have grown enormously during the last two decades, and which are increasingly paying attention to sustainability issues – for example, through the emergence of “green” investment funds and institutions;
- Engagement of multiple shareholders, including, foundations, NGOs, countries, private banks, citizen groups, the development banks;
- An evolving and flexible structure; and
- Responsibility for and authority in the management of the facility by the potential beneficiaries of S&T funding.

**THE WAY FORWARD: NEXT STEPS**

To move forward on the basis of the general consensus that is emerging on the need for a Science and Technology Sustainable Development Fund it will be necessary to organize a participatory design process, in which the various stakeholders in such a venture could contribute to make this vision a reality.

The following steps are envisaged for such a participatory design during a period of twelve months:

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• Creation and organization of a “champion team” of several institutions with expertise and interest in the creation of a Science and Technology Sustainable Development Fund. This team, ideally chaired by someone with international stature and credibility (e.g., a Maurice Strong or Oscar Arias).

• Preparation of a short baseline document, which would describe the present situation with regards to funding for science and technology for sustainable development. This should be done by a small team of experts building on recent and current initiatives aimed at mapping initiatives in this field.

• Organization and implementation of a consultation process with relevant stakeholders in research institutions in developed and developing countries, in financial institutions and markets, in regional and international organizations concerned with science and technology and with sustainable development, and in non-governmental organizations, academic centers and with independent scholars.

• Preparation of an initial design document, providing an outline of the institutional and financial arrangements of the proposed STSDF. This initial outline should be presented and discussed at an expert meeting to obtain reactions and suggestions, prior to the preparation of a revised design document that would be taken to senior policy and decision makers in developed and developing countries, and in the foundations, investment firms, multilateral development banks, development assistance agencies, among other institutions, whose views and actions are critical for the implementation of the project.

• Completion and dissemination of the proposal to establish a Science and Technology Sustainable Development Fund, which could eventually be followed by a “Founders Conference”