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93-0015

**DONOR CONSULTATION ON AGENDA 21 RESEARCH AND CAPACITY-BUILDING
INITIATIVES**

Bellagio Study and Conference Centre
Bellagio, Italy

November 8-11, 1993

**SELECTED DONOR PROFILES:
ENVIRONMENTAL RESEARCH
AND
CAPACITY DEVELOPMENT**

BACKGROUND PAPER 1

Prepared for:
IDRC and SAREC
as background for a donor consultation
on environmental research and capacity building

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September 30, 1993

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OVERVIEW

INTRODUCTION

The donor profiles have been assembled specifically as background material for the **Donor Consultation on Agenda 21 Research and Capacity Building Initiatives** with the purpose of providing participants with "thumbnail" sketches of the donor organizations whose representatives would be sitting around the table. The sketch is a partial one, focussed on environmental activities and specifically, follow-up to Agenda 21. The selection of organizations profiled is therefore a purposive sample and has no particular legitimacy beyond the Bellagio meeting in November 1993.

The material in the profiles has been assembled from recently published reports and through interviews with organization staff. A few profiles were prepared in-house by the organization in accordance to an agreed outline. Sources for each profile are provided at the end of the document. Drafts of the profiles were sent to each respective organization for review and correction. Where a response had not been received by October 1 1993, the profile is indicated as a draft.

CONTENT AND FORMAT OF PROFILES

Following this overview, this paper provides brief profiles of the environmental mandates and activities, including support for environmental research, of some key donor organizations (multilateral agencies and national organizations, including foundations). Where relevant, particular emphasis is given to activities in the areas of climate change, biodiversity and desertification. The profiles also contain information on approaches to capacity development, and experiences with donor collaboration. Thus, the profiles generally conform to the following outline:

1. **Overview**
 - overall mandate, organization, budget
2. **Environmental Mandate and Activities**
 - UNCED-specific activities (esp. climate change, biodiversity, desertification)
 - general environmental activities
 - environmental research
3. **Capacity Development and Donor Collaboration**

SOME KEY FINDINGS BASED ON THE PROFILES

As a general point, although the broad mandate of most of the organizations profiled is similar (i.e., to provide support to developing countries to improve human welfare) it should be noted that these organizations profiled cover a wide range in terms of size/budget, key interests and activities, and methods of operation.

■ Organizational Structure

Multilateral aid agencies are broadly mandated by the participating donor governments. Some donor governments and/or their bilateral aid agencies may take a very active role in establishing policy and strategies, and determining program priorities, for multilaterals to which they contribute. For the most part, however, there is little direct scrutiny of the disbursement of funds channelled through the multilateral system, except for post-hoc evaluations.

Bilateral aid programs are linked, to a greater or lesser degree, with their country's foreign policy, and may even be directly administered by the Ministry of Foreign Affairs. In European countries in particular, numerous national agencies, housed in different ministries, may have responsibilities in the area of international development. While inter-ministerial committees often exist to coordinate these agencies (e.g., in the UK, the Netherlands, Italy, and the Scandinavian countries), support for research and capacity development is often administered by a multitude of administrative units with little or no coordination.

Foundations are not bound by the foreign policy objectives and strategies of their home governments, but linkages may nonetheless be quite strong, as evidenced, for example, by recent commitments of aid to the former Soviet Union and Eastern European states.

■ Environment/Sustainable Development

All of the organizations profiled have supported natural resource management projects and other environmentally-related activities for many years, and some have also long supported programs and projects specifically focussed on environmental/resource conservation. More recently, in the wake of the Brundtland report, sustainable development was embraced in the policy frameworks of most donor organizations, often accompanied by organizational restructuring, new operational directives (in many cases centred around environmental assessment of projects, but in some cases attempting to apply more broad-based sustainable development criteria in the selection of projects), and in some cases new program areas.

In fact, a number of those interviewed for the profiles suggested that in relation to the development agenda, it was more appropriate to speak of environmental activities under the heading of "sustainable development". And either implicitly or explicitly, many agencies have

attempted to follow the Bruntland-recommended approach of introducing environmental considerations across a wide range of activities; and at least on agency made a conscious decision to avoid "sectoralizing" environment.

In sum, for virtually all of the donor organizations, UNCED reinforced an established trend, rather than prompting a new direction. Many had been involved in the preparation of materials for UNCED, and in negotiations leading to the development of Agenda 21 and other Rio documents. Many have also actively reviewed, or are in the process of reviewing, their policies and project portfolios in terms of Agenda 21, to improve the "fit" of their activities with the Agenda 21 framework. In most other cases, there has at least been informal consideration given to the relationship between program activities and Agenda 21. It is primarily multilateral agencies (e.g., GEF, the EEC's JRC, the UNDP), however, that have made explicit commitments related to the UNCED conventions (climate change, biodiversity and desertification). Although a few bilateral agencies (e.g., Danida, SAREC) have also done so, most seem to view the multilateral channels as the main vehicles through which their convention responsibilities are discharged. However, numerous agencies expressed a commitment to helping strengthen the participation of developing countries in global environmental fora. Moreover, at least some of the environmental programs and projects supported by most donor organizations are relevant to the issues of climate change, biodiversity and desertification.

In terms of other environmental issues, several themes of common interest emerge from the profiles. These include sustainable agriculture (primarily at the small-farm level); energy conservation and energy alternatives (including renewables); and more broadly, natural resource use, including the social and economic factors affecting use. It is also interesting to note that a number of agencies (e.g., UNEP, the World Bank, GTZ and SIDA) provide support for the development of national environmental action/sustainable development plans.

■ Research

Only three of the organizations profiled are devoted primarily to development research (IDRC, ORSTOM and SAREC), and of the other organizations, those that have a specific research policy and/or program are in the minority (e.g., USAID, ODA, the Netherlands' agencies, the World Bank). Indeed, many of the organizations profiled do not have a working typology, or even general definition, of "research". (It should also be noted that with the administrative compartmentalization of much bilateral aid, particularly in Europe, different goals for development research may be pursued without coordination.)

Given this, it is probable that most of the support given to research is integrated into other types of development assistance programs and projects, rather than to research projects per se. To the extent that this is true, funding for basic and strategic research would appear to be at a premium. However, another "indirect" venue through which many agencies provide support for research is through the sponsorship of graduate and post-graduate studies; and this may provide more opportunity for basic and strategic research.

In discussions about environmental research, there was sometimes a failure to distinguish between international environmental research (which is not necessarily development-oriented), in-house research to assist in priority-setting etc., and environmental research by/for/in developing countries and regions. It is also apparent that while most (but not all) organizations now require that research proposals involve a developing country partner, in many cases, proposals continue to originate from researchers and institutions in the donor's home country.

Numerous organizations profiled (e.g., IDRC, Italy, the Netherlands' OGIS, Norway) are committed to providing support for the dissemination of research results, and for technology transfer. There was, however, little if any discussion of research on mechanisms for, and conditions affecting, dissemination and transfer.

■ **Capacity Development**

Virtually all organizations profiled are philosophically disposed to supporting developing countries to acquire the capabilities necessary to address their own development problems. At the same time, some of those interviewed were of the opinion that the donor community lacks an operationally valid understanding of environmental capacity development.

Capacity development for environmental management and/or environmental research may in some cases form the basis of a funded programme or project, but more commonly, it is a component (often an explicit component) of another programme or project. Many donors are clearly supportive of "capacity-emphasizing" research (versus strictly "results-emphasizing" research).

Capacity development is a major rationale for collaborative research programmes, and in fact, many environmental research programmes and projects are undertaken as collaborative efforts. Indeed, unless clearly qualified, the term "collaboration" tends to evoke the notion of collaboration between development actors and institutions in developing countries and their counterparts in the donor country, rather than collaboration between donors. This reflects the reality that most donors are committed to promoting links between Northern and Southern institutions, thereby building and maintaining competence in international development in the donor's home country.

■ **Donor Collaboration**

All agencies collaborate with other agencies at a variety of levels (from information exchange to attempts to harmonize policies and programs, to financial support) and scales (from efforts involving only one other sponsor, to multi-sponsor initiatives, to ongoing multilateral programs). Financial collaboration may be directed to single, specific, short-term projects, or to much broader, long-term efforts, including institutional development. While there was no unequivocal

rejection of any particular type of collaboration, preference for certain forms was apparent in some cases.

However, no consistent pattern seems to emerge. Many agencies do, however, make use of some key multilateral channels for information exchange and harmonization with other donors. These channels include the OECD's Development Advisory Committee, the EEC, and country-level forums, including the consultative groups convened by the World Bank. Some agencies are also looking to the CSD and the Convention Secretariats for direction on collaboration. A majority of agencies, or their sponsoring governments, also contribute financially to such key multilateral agencies and programs such as the World Bank, the GEF, and the UNDP's Capacity 21.

MULTILATERAL ORGANIZATIONS

THE GLOBAL ENVIRONMENT FACILITY (GEF)

1. OVERVIEW

1.1 Overall Mandate and Organization

The GEF was created in 1990, as a pilot program, to manage the allocation of international funds to projects that address global environmental problems in developing countries. The GEF provides grants to developing countries to help them deliver projects that: reduce depletion of the ozone layer; reduce greenhouse gas (GHG) emissions; preserve biodiversity; and protect international waters.

The intention of the GEF is to provide support for actions that contribute to global, as opposed to strictly local or national, environmental benefits. Thus, the facility operates on the principle of incrementality: that is, it supports projects that are unlikely to otherwise be included in the host country's development portfolio, because domestic costs exceed anticipated domestic benefits. All countries with per capita incomes below \$4,000 per year qualify for GEF grants.

It was the intention of the donors that no new bureaucracy be created to administer the GEF. Thus the GEF is implemented through three existing agencies:

- The UNDP handles technical assistance and research projects; administers the Small Grants Program; and helps coordinate preinvestment studies for investment projects. The UNDP is also responsible for assessing the viability of proposed projects, via pre-investment feasibility studies, on behalf of the three implementing agencies; and the UNDP Resident Representatives assist in coordination at the country level.
- The UNEP provides environmental expertise to the GEF, and provides the Secretariat for the Scientific and Technical Advisory Panel (STAP).
- The World Bank handles investment projects; administers the GEF; and is the repository of the Trust Fund. The chairmanship of the GEF is vested in the World Bank, and the administrator -- who coordinates the work of the three implementing agencies -- is also located at the Bank.

Governance of the GEF is exercised through semi-annual Participants' Meetings, where, among other things, the work plans submitted by the implementing agencies are reviewed and approved.

The GEF's three-year pilot phase runs from July 1991 to June 1994 (although disbursements of funds for pilot phase projects will continue for some years thereafter). An ongoing operational phase will likely follow, pending the outcome of current discussions on restructuring (wherein the direction is towards universality of membership, greater transparency and a more democratic structure), and donor replenishment. An independent evaluation of the GEF pilot phase is currently underway.

1.2 Funding Sources

GEF funds come from two separate sources. The Global Environment Trust Fund (GET), the so-called "core fund", is made up of contributions by 27 member countries (the Participants), of which approximately 9 are developing countries. As of March 31, 1993, some \$813 million has been pledged to the GET. The second source of funds for GEF projects is co-financing and parallel financing arrangements by certain donor governments. To date, a total of \$174 million has been pledged for cofinancing, and the U.S. administers a \$150 million parallel financing arrangement through USAID.

GEF funds are often used to complement initiatives being funded by the implementing agencies. Indeed, a major objective of the GEF is to leverage global benefits from World Bank projects that might not otherwise address global concerns. The Bank is also looking at ways to mobilize private capital.

1.3 Project Criteria and Project Approval

STAP has set out suggested resource allocations, and priority approaches or instruments, for each of the three main areas financed by the GEF. For reduction of GHG emissions, for example, STAP recommended that the majority of resources be devoted to improvements in end-use efficiency and reduction of emissions intensity of energy production. For biological diversity, it is recommended that the majority of funding go to tropical forests, temperate forests and marine and coastal systems, and favoured approaches include establishment and consolidation of protected areas, promotion of sustainable use, and education, training and research. Only a small amount of GET funds are devoted to arresting ozone depletion, because most developing country signatories to the Montreal Protocol are eligible for funding through the multilateral fund of the Montreal Protocol. (The GET focuses on CFC phase-out for the Eastern Europe/CIS Region, where producers and users are currently ineligible for funding under the Montreal Protocol.)

Proposals originate from a variety of sources (e.g., governments of developing countries, UNDP, UNEP, the Bank, NGOs). All proposed projects must be accepted in principle by the government of the country where the project is situated. A variety of agencies are likely to be involved in appraising a proposal, including the prime GEF agency and the other GEF partner agencies, independent experts, and the STAP. Appraisal of cost-effectiveness of investment projects takes into account environmental benefits rather than financial returns (i.e., physical versus monetary measures). The Implementation Committee, made up of representatives of the three implementing agencies, plus STAP and the GEF Administrator's Office, looks to striking an appropriate geographic and thematic balance in selecting the final group of projects (to date there have been five groups or "tranches" of projects). Approved projects return to the sponsoring agency for further preparation and final approval. (GEF projects may be sponsored by intergovernmental agencies -- regional development banks and specialized UN agencies -- other than the three implementing agencies).

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Relationship to UNCED

The GEF is currently the only multilateral vehicle that explicitly provides for financial transfers for work related to global environmental problems, as defined at UNCED. The GEF has been designated as the interim mechanism for financing fulfilment of the goals of the Climate Change and Biodiversity Conventions, and participating governments have agreed that at the end of the pilot phase, the GEF should move to a more permanent status. Thus, assuming successful restructuring, the GEF is likely to remain the key multilateral vehicle which industrialized countries support for work related to the conventions.

2.2 Activities to Date

Projects in a wide range of regions and topics have been supported, with the intention of developing a base of approaches that are replicable elsewhere (replicability is an eligibility criteria for GEF funding), and an understanding of where the greatest "payback" is possible. In the first five tranches of projects (to December 1992), project funding amounted to about \$727 million. Biodiversity, global warming and international waters received 42%, 40% and 16% of resources respectively; roughly reflecting the division of funds that had been directed by the GEF participants. Of the total, \$468 million was managed by the World Bank for 53 investment projects; \$242 by the UNDP for 55 technical assistance project; and \$17 million by the UNEP for 5 projects, and Secretariat support to the Biological Diversity Convention. A significant proportion of Bank/GEF funding goes to add-ons to projects already in the Bank pipeline. This is particularly true of GHG projects, which tend to be relatively capital intensive, hence high cost, in comparison to biodiversity and international waters projects.

The GEF Small Grants Programme, administered by the UNDP, awards grants of up to \$50,000 (up to \$250,000 for regional projects) to NGOs and other groups for small-scale activities, particularly those that enable communities and people to maintain local biodiversity. The goal is to identify and demonstrate effective community-based approaches that could, if replicated, reduce threats to the global environment. As of April 1993, \$7 million had been allocated to this programme from the GET. Other UN agencies are sometimes involved in project execution.

In addition to funding projects, the GEF has produced a number of working papers to guide its thinking and activities. Topics have included: economic costs of carbon dioxide reduction strategies; economics of biodiversity in relation to incremental costs; and legal and institutional mechanisms for the establishment of foundations in developing countries.

2.3 Environmental Research

Because of a donor-directed emphasis on concrete action and results, only a small proportion of GEF financing has been directed to research projects per se. In the first four tranches of the GEF, only about \$20 million of the \$229 million allocated by UNDP went to research projects. It is generally acknowledged, however, that the GEF portfolio should include a small, targeted

research element; and also, that many projects require research to facilitate implementation. A sampling of STAP's recommended priorities for GEF-sponsored research in relation to GHG emissions and biodiversity include: national inventories of GHG sources and sinks; methodologies for least-cost emission curves; inventories of flora and fauna for baseline biodiversity information; in vitro propagation; and in-situ conservation plot experiments. There are proposals that in the future a fixed proportion of GEF funds -- in the order of 5% -- be dedicated to research. As the program becomes more directly driven by the Biodiversity and Climate Change conventions, support for research projects may increase.

Research projects currently supported through the GEF include START (Global Change Systems for Analysis Research and Training), ICRAF's inter-regional research on alternatives to slash and burn, and the Research Programme on Methane Emissions from Rice Fields. Examples of projects with research components include the afforestation project in Ecuador, which includes monitoring and evaluation of interactions of replanted areas with remnant forest, and a national biodiversity conservation plan for Mongolia, which includes a component of study on the effects of traditional agricultural methods and lifestyles on ecology and biodiversity. A limited number of research-oriented projects are also sponsored by the UNEP, including country case studies on biodiversity, and sources and sinks of GHGs.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

It is a GEF eligibility criteria that projects develop human capability (through education, training and research) and institutional capability.¹ The development cycle for each potential GEF project is meant to include a determination of the capacity needed to ensure effective and sustainable project execution, and all projects are also to include plans for the dissemination of results and knowledge, and to be participatory in nature, involving close collaboration with local communities wherever possible.

In some cases, institution building/strengthening is a central project component. For example, the Black Sea environmental management/protection project provides seed money for institution building. Support given to executing agencies in developing countries -- be they government departments, NGOs or others -- also contributes to the strengthening of these agencies. For example, the Patagonian Coastal Management Plan aims to strengthen institutions and develop human resources for the establishment of an integrated management plan. Projects may also include funds for strengthening the units of ministries that are responsible for the project.

¹ In the NGO Small Grants Programme, provision for capacity building is a key project selection criterion.

3.2 Donor Collaboration

As noted, both parallel funding and co-funding are donor collaboration approaches that are used with GEF projects. Several countries have separate co-financing arrangements; and the U.S., which did not contribute to the core fund, provides parallel financing through USAID. Several Third Tranche biodiversity projects are parallel-financed by USAID.

**THE JOINT CENTRE OF
THE COMMISSION OF THE EUROPEAN COMMUNITY (JRC)
(Draft Profile)**

1. OVERVIEW

Organization and Mandate

The Joint Centre of the Commission of the European Community (JRC) is a European scientific and technical research centre. JRC's four sites in Belgium (Geel), Germany (Karlsruhe), Italy (Ispra) and the Netherlands (Petten) house eight different institutes, each with its own focus of expertise:

EI	-	Environmental Institute (Ispra)
IRSA	-	Institute for Remote Sensing Applications (Ispra)
IRMM	-	Institute for Reference Materials and Measurements (Geel)
ITU	-	Institute for Transuranium Elements (Karlsruhe)
IAM	-	Institute for Advance Materials (Petten, Ispra)
ISEI	-	Institute for Systems Engineering and Informatics (Ispra)
STI	-	Safety Technology Institute (Ispra)
IPTS	-	Institute for Prospective Technology Studies (Ispra)

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED - Related and other Environmental Activities

Contributions to international programmes on Global Change such as the International Geosphere Biosphere Programme (IGBP) the World Climate Research Programme (WCRP) and the Human Dimensions Programme (HDP) are handled through the Commission of European Communities R&D Shared Cost Action Programme and the Environment Research Programme of the JRC. The environment research programme of the JRC is concentrated to the EI and the IRSA, both in Ispra in Northern Italy.

After UNCED, the Community and its member states made two important announcements: one to make available 3 billion ecus as new and additional resources for implementing Agenda 21 in developing countries and the confirmation of its decision to stabilize carbon dioxide emissions at 1990 levels by 2000. The strategic environment and development policy frameworks for the follow up to UNCED were set at meetings of the Development and Environment ministers.

In November 1992 the Development Council of the Community laid down priorities for an EC Development Co-operation Policy in the run-up to 2000 and adopted a series of measures to promote clean and efficient energy use for developing countries. The Commission's work plan for 1993-1994 includes a variety of important policy and action oriented commitments in the environmental field, including ratification and publishing of national strategies for the Climate Change and Biodiversity conventions. By the end of 1993 the implementation of the new

Initiatives to assist developing countries in achieving sustainable development and to promote transfer of environmental technology should have started.

2.2 Environmental Research

IRSA's research is focused on tropical deforestation, biomass burning and ocean productivity. A cooperation with the European Space Agency (ESA) has led to joint projects such as:

TREES (Tropical Ecosystem Environment Observation by Satellites) focused on tropical ecosystems dynamics, vegetation climate interaction and impact on atmospheric chemistry of burning of biomass patterns;

OCEAN (Ocean Colour European Archive Network), aimed at studying ocean primary productivity and marine transport processes and geochemical fluxes. EI's research includes activities on atmospheric sulfur aimed at clarifying the formation and evolution of atmospheric aerosols;

BEMA (Biogenic Emission in the Mediterranean Area) is a cooperative project with collaboration from many European laboratories. The aim of the study is to clarify deposition-emission exchange processes of compounds from the vegetation and to the reactions of such compounds in the low atmosphere.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

The Commission has also recently suggested the setting up of a European Network of Research in Global Change (ENRICH) with the purpose of supporting public policy objectives by collection, analysis and dissemination of information, as well as training. ENRICH has the ambition of playing a role in stimulating research capabilities in developing countries mainly in Africa and the Mediterranean but also in Eastern Europe. The Network would rely as much as possible on existing Global Change research programmes mentioned above and on the Global Systems for Analysis, Research and Training (START).

Several other projects are planned including a Centre for Earth Observation (CEO) aimed at facilitating the use of remote sensing data and data from land-based stations.

Some initiatives for Eastern Europe as well as developing countries on environmental research and environmental research capacity development have been announced to be implemented mainly through the STD3 (Science and Technology for Development), the ISC (International Scientific Cooperation), and the AVICENNE initiatives. Specific programmes within the present Third Framework Programme are also involved, such as JOULE II and THERMIE (Clean and Efficient Energy for Development Initiative) and through the above-mentioned JRC centres. The Development Council of the EC decided on May 25, 1993, to allot an initial tranche of 600 million ecu in 1993 for specific projects and programmes in key Agenda 21 sectors. Additional resources may amount to an extra 20% of the 600 million.

**UNITED NATIONS
EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION
(UNESCO)**

1. OVERVIEW

Mandate

UNESCO was established in 1946 as the UN Specialized Agency for education, science, culture and communication. This broad mandate puts UNESCO in a strong position to promote the kind of research, national capacity-building and education, as well as intersectoral work, required for sustainable development in general, and for the implementation of Agenda 21 in particular. UNESCO's programmes in the natural and social sciences seek to provide the scientific information and human resources needed for sound policy-making. UNESCO's education programmes seek to promote education that will provide citizens with the knowledge and skills they need to act in an environmentally responsible manner. Cultural considerations permeate the organization's work, by virtue of its overall mandate.

While its Headquarters are located in Paris, UNESCO also has about 50 sub-offices, located primarily in developing countries, including regional and sub-regional offices in education, science and technology and culture. UNESCO's work is supported at the national level by UNESCO National Commissions, and national committees established to carry out specific UNESCO programmes. UNESCO also works in close collaboration with other UN agencies and numerous nongovernmental organizations.

Funding Sources

UNESCO's regular budget is provided by its Member States (176 as of September 1993). Additional "extrabudgetary" funds come from diverse sources, including "funds-in-trust" for specific projects from Member Countries (31%), the UN Development Programme (26%), the UN Population Fund (12%), the regional development banks (9%), the World Bank (3%), and other sources (19%). Over the next several years, UNESCO hopes to establish closer links with the private sector.

Total Budget

UNESCO's regular budget for the 1992-93 cycle is US\$ 444 million. With an additional US\$ 247 million in extrabudgetary funds from various sources, the total operating budget for 1992-93 is about US\$ 691 million.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

Environment and development problems have been a major focus of UNESCO's work for the past 40 years. Beginning with Arid Zone Programme in 1951, numerous UNESCO programmes have been launched to address research, education, training and policy needs related to specific environment and development issues (e.g. water resources management, conservation of biological diversity) and specific ecological systems (e.g. islands, tropical forests, mountains and arid lands).

Since the Rio Conference, Agenda 21 follow-up has become one of UNESCO's top priorities and will be a central concern for the UNESCO Medium-Term Plan to be prepared for 1996-2000. For its 1994-95 programme and budget period, UNESCO has reoriented its environment and development programmes to meet the specific objectives of Agenda 21. UNESCO has focused particularly on those chapter of Agenda 21 in which UNESCO already substantial programmes and expertise, including the chapter on conserving biodiversity (15), protecting oceans and coastal zones (17), managing fresh water (18), strengthening the role of the scientific and technological community (31), science for sustainable development (35), promoting education, training and awareness (36), and capacity building (37), UNESCO also has launched four cross-sectoral initiatives intended to chart new directions across established programme lines. These initiatives focus on (1) capacity development, (2) information and communication on environment and development, (3) interdisciplinary sciences for sustainable development, and (4) biological diversity. A small committee of outside experts has been appointed by the Director-General to advise UNESCO on developing and implementing these initiatives. UNESCO is also about to launch a major inter-agency initiative on environment and population education and training with UNEP and UNFPA, in cooperation with UNDCP, WHO, UNDP and UNICEF.

UNESCO is actively involved in UN system-wide collaboration in implementing Agenda 21. UNESCO is one of nine core members of the Inter-agency Committee on Sustainable Development responsible for increasing co-operation and co-ordination among UN bodies. UNESCO has been asked to serve as "task manager" to coordinate within the UN system implementation of Agenda 21 Chapter 35, "Science for sustainable development" and Chapter 36, "Promoting education, public awareness and training".

UNESCO is participating fully in efforts to implement the conventions signed at UNCED, as well as in ongoing negotiations for a convention on desertification. UNESCO is involved in preliminary work to implement the Convention on Biological Diversity with the Intergovernmental Committee on the Convention. UNESCO, in particular its Intergovernmental Oceanographic Commission (IOC), is participating in the implementation of the Convention on Climate Change. In this respect, the IOC is coordinating efforts to launch a Global Ocean Observing System and Programmes to train scientific, technical and managerial personnel. UNESCO is providing technical support to the INC on the proposed convention on desertification and will host its final meeting in June 1994.

The UNESCO Bureau for the Coordination of Environmental Programmes, established in 1990, is responsible for coordinating UNESCO's follow-up to Agenda 21 and for spearheading cross-sectoral work on themes such as climate change, biodiversity and information/communication. The Bureau is also responsible for input to UN system-wide effort up UNCED.

2.2 General Environmental Activities

UNESCO's four primary functions in the field of environment and development are to: (1) promote research that addresses environmental and development problems, (2) ensure that developing countries have trained researchers and managers, (3) promote education that will provide citizens with the knowledge they need to make environmentally sound decision, and (4) disseminate research result to policy-makers. UNESCO achieves these goals by working through international networks of researchers, trainers and educators, and donors to identify research, training, education and policy needs, and to mobilize human and financial resources to address these needs. UNESCO sponsors a wide range of environment and development programmes, many in cooperation with other UN agencies and scientific NGOs.

2.3 Environmental Research

The fundamental thrust of UNESCO's environmental science programmes is to promote policy-relevant research, particularly the interdisciplinary research needed to address environment and development problems in all of their complexity.

UNESCO coordinates international research programmes on global environment and development issues through international networks of researchers from different disciplines, countries and sectors of society. These programmes identify gaps in research; organize training for researchers in developing countries (see 3.1 below); develop standardized methods for data collection, management and analysis; and centralize and disseminate research results. Key scientific programmes include the:

- **Intergovernmental Oceanographic Commission (IOC)** - implements numerous programmes focusing on the marine environment, including the Global Ocean Observing System (co-sponsored with WMP, ICSU and UNEP), and the World Climate Programme (co-sponsored with WMO, UNEP, FAO, and ICSU); **Inter-Regional Project on Research and Training in Coastal Management (COMAR)**
- **Man and the Biosphere Programme (MAB)** - focuses on ecosystem functioning under different intensities of human impact, and on the management and restoration of ecosystems. Sub-programmes include the: **Diversitas Programme** and the **Tropical Soil Biology and Fertility Programme** (co-sponsored with UNEP).
- **International Hydrological Programme (IHP)**. Sub-programmes include the: **Humid Tropics Programme**.

- **Microbiological Resources Centres (MIRCEN) Network.**
- **International Geological Correlation Programme (IGCP).**
- **Social Sciences Programme.**

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

Capacity building consists of developing human resources through education training, and providing an adequate institutional framework and material support to enable researchers to use their skills. Capacity building for sustainable development, therefore, spans UNESCO's education and science programmes in environment and development.

The fundamental thrust of UNESCO's education programmes is to increase the number of people in developing countries who receive a basic education. UNESCO activities focus on improving access to primary education, increasing scientific and technological literacy, promoting equal access to education for girls and women, strengthening adult education, using new technologies for education, increasing environment and population literacy, strengthening technical and vocational education, and strengthening public awareness programmes. To these ends, UNESCO develops curricula and resource materials, collects and disseminates information about innovative teaching material, trains teachers, develops methods for evaluating education programmes, publishes technical journals on education, maintains profiles of national and regional trends in education, establishes standards for educational Commission on Education for the Twenty-First Century, headed by EEC Commissioner Jacques Delors, in order formulate policy recommendation for reforming education. Key programmes include the:

Education for All Programme (EFA) - promotes literacy through efforts to make primary education available to all children and to provide basic education for adults and young people who are not attending school.

International Environmental Education Programme (IEEP) (co-sponsored with UNEP) - promotes the integration of information needed for sustainable development into education at all levels, both within and outside the formal education system.

Associated Schools Programme - encourages educational institutions to organize special programmes designed to increase knowledge of world problems and international cooperation through the activities of a network of over 3,000 primary and secondary schools in 117 countries.

UNITWIN and UNESCO Chairs Programme - supports higher education systems and institutions in developing countries through 15 regional inter-university networks and 35 UNESCO Chairs in 20 developing countries (including 4 Chairs in sustainable development).

A central objective of UNESCO's environmental science programmes is to work towards ensuring that every country has an adequate number of researchers and institutions through which they can work, and to promote through training and integrated research approach that will provide scientific information relevant for policy-making. Each year, UNESCO:

Trains about 400 scientists, managers and administrators, primarily from developing countries in fields such as the management of biological diversity, arid lands, tropical ecosystems and small islands; about 250 researchers and managers in water resources management through a network of 32 post-graduate courses and mobile training courses; 200 researchers and managers in the marine sciences, through post-graduate courses and individual study grants; and 200 researchers through post-graduate courses in earth sciences.

Supports institutions that offer in-service training in topics such as eutrophication control, agroforestry and soil fertility, water management in the humid tropics, and marine environmental monitoring.

Prepares modules, curricula and lecture notes on topics such as water resources management and marine science.

Established about 10 new UNESCO Chairs in universities in developing countries.

3.2 Donor Collaboration

UNESCO works closely with other relevant UN agencies, in particular UNEP, WMO and FAO. In addition, UNESCO works closely with major international scientific and professional associations in the environment and development field. Particularly close cooperation exist with ICSU and its member unions and committees, and IUCN (the World Conservation Union). UNESCO is actively seeking opportunities for new partnership arrangement for the implementation of Agenda 21, including arrangements with foundations, bilateral donors and the private sector.

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

1. OVERVIEW

UNEP is the secretariat of the environment programme of the United Nations. It reviews, analyses, catalyses and coordinates environmental issues and actions on a global and regional level, and implements the Programme through executing agencies. Its mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing and enabling nations and peoples to improve their quality of life without compromising that of future generations. It was founded in 1972 by the UN General Assembly as a result of that year's Stockholm Conference on the Human Environment. That Conference reflected increased worry about environmental issues, particularly pollution, during the late 1960s and early 1970s.

Administration and Budget: UNEP'S Governing Council generally meets every two years. Its 58 members, from all geographic regions, are elected by the General Assembly for four-year terms. As an integral part of the UN Secretariat, all UN Members and observers take part in its proceedings. The Governing Council establishes programme priorities, reviews the world environment situation and approves expenditures; it reports directly to the General Assembly. UNEP's Executive Director is elected by the Assembly for a four-year term, upon the recommendation of the Secretary-General.

The Environment Fund was set up under the authority of the Governing Council to finance wholly or partly the costs of new environmental initiatives within the UN system. It is made up of voluntary contributions and comprises about two-thirds of UNEP's budget. Over the last 10 years, 95% of the contributions have come from 15 countries, 60 countries have paid 5%, and well over half the UN Member States do not contribute at all. The stated target for 1992 was \$100m, but so far only \$64m has been received. The Fund is supplemented by trust funds (20%), counterpart contributions (8%) and the UN regular budget (6%), which is was meant to bear the costs for servicing Governing Council. A budget of \$120 - \$130 million has been approved for the biennium 1994 - 1995.

UNEP's Role within the UN System

UNEP contributes to the coordination of environmental policies and practices within the UN system and the international community. This means that it works directly with the Commission on Sustainable Development (CSD) and the Inter-Agency Committee for Sustainable Development (IACSD). These agencies were set up after UNCED to coordinate all activities relating to development and the environment within the United Nations system.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

UNEP in the world after UNCED:

UNEP's Governing Council sets its policy, which, for its first 20 years, focused on three broad areas:

- Environmental Assessment
- Environmental Management
- International Environmental Law

There were many particular parts to the programme that evolved under these three themes. There was the environmental monitoring capacity built up in the Global Environment Monitoring System (GEMS), and the establishment of a computer-based store of data in the International Register of Potentially Toxic Chemicals (IRPTC). More computer-based capability was developed to show how both natural and human resources are distributed in the Global Resource Information Database (GRID). Another key information system is INFOTERRA, UNEP's international network for the retrieval of global environmental information. It is a world-wide network with national focal points in 160 countries, providing Governments, industry and researchers with access to a vast reservoir of environmental data and information gathered from about 6,000 institutions and experts in more than 1,000 priority subject areas.

Environmental management and legal instruments were developed. The most successful example of international environmental law can be seen in the instruments used to protect the ozone layer, the Vienna Convention and the Montreal Protocol. The Mediterranean Action Plan has been used as the model as UNEP's Regional Seas Programme has spread. The protection of endangered species under the CITES convention has also seen much successful international cooperation to stamp out trade in rare plants and animals. UNEP has also contributed to the drawing up of conventions on hazardous waste, climate change, biodiversity and is currently helping with a convention on desertification. It also supplies the Secretariats for many of these respective conventions.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

UNEP, along with the World Meteorological Organization (WMO), also established the Intergovernmental Panel on Climate Change to provide scientific assessments on the magnitude, timing and potential environmental and socio-economic consequences of climate change and realistic response strategies.

The organization has, this year, also been given responsibility for all of the UN's activities involving freshwater. Among regional initiatives are the Action Plan for Latin America and the Caribbean and the programme for environmentally sound management of inland waters in the Zambezi Basin.

UNEP, along with UNDP and the World Bank, administers the Global Environment Facility (GEF), and is responsible for GEF's Scientific and Technical Advisory Panel (STAP).

The Future

UNCED and Agenda 21 marked a new beginning for the world community as a whole. Agenda 21 reaffirmed UNEP's role as the principal environment body in the UN system and expanded UNEP's role to encompass a vast range of world environmental needs and problems. However, Agenda 21 also acknowledged that if UNEP was to perform all these functions it needed access to greater expertise and the provision of adequate financial resources.

Specifically Agenda 21 set out priority areas which were confirmed by UNEP's recent Governing Council:

- Capacity building
- Environmental management of terrestrial ecosystems and their resources
- Data collection and dissemination, assessment of environmental conditions and early warning of environmental problems
- Promotion of environmental management of marine and coastal areas
- Support and cooperation for environmental action, including global and regional cooperation
- Environmental management of freshwater resources
- Environmental health, settlements and human welfare
- Industry, energy and the environment
- Environmental economics, accounting and management tools
- International law on sustainable development, institutions and policies
- Toxic chemicals and waste management
- Protection of the atmosphere

During that same Governing Council the Executive Director outlined three priorities for a revitalized UNEP programme:

Capacity building

Future UNEP activities must build up the capacity of developing nations to manage their environment and its resources in a sustainable way. This will include developing environmental institutions and legislation and better environmental education.

Catalyzing Environmental Responses

UNEP must identify emerging environmental problems and, by bringing governments together, stimulate the development of programmes and policies which will set about solving these problems. UNEP will continue to play this role in such areas as biodiversity, climate change, and desertification. UNEP will also seek to realize its great potential as an agent to resolve environmental conflict.

Sensing the Environment

UNEP will in the future concentrate on the dissemination of data which can be used by those who need it.

The Programme itself is currently being reviewed to determine what the organization can hope to kind of structure and division of responsibilities will help bring about these achievements. The theme which must link all of these structural reforms is the need to contribute to attitudinal and behavioural changes which have an impact on the environment. In parallel to the programme review, significant reform in the management of UNEP is required and action has been underway to:

1. Develop a clear mission for the organization
2. Institute a results management approach and service orientation
3. Strengthen the role of the regional offices
4. Improve financial administration and human resource management systems to ensure empowerment and accountability
5. Improve the partnership with the rest of the UN system in particular HABITAT, the other UN agency headquartered in Nairobi where a common administrative structure is currently being designed. There will also be greater participation in the GEF.

THE UNITED NATIONS DEVELOPMENT PROGRAM (UNDP)

1. OVERVIEW

Mandate

The UNDP, established in 1966, is designated as the central coordinating organization for the United Nations for development activities. The Program has offices in 130 countries; and, working with UN technical agencies, supports over 6000 projects in 152 countries. The UNDP serves primarily as a catalyst, facilitator, and coordinator of activities, relying on other UN agencies and governments to act as executing agencies. NGOs, the private sector, and academic and other institutions to serve as implementing agents.

Funding Sources

The UNDP receives contributions from the governments of more than 150 countries.

Total Budget

The UNDP is the world's largest multilateral source of grant funding for development. The 1992 budget included US \$1.178 billion for core programmes; \$140 million for special purpose funds; and cost sharing contributions of \$294 million.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

Agenda 21 calls on UNDP to: strengthen mechanisms for coordinating the instruments, initiatives, and funds following from UNCED; play a lead role in coordinating UN efforts in capacity development, and in mobilizing donor support for capacity development; undertake programs to address desertification and drought; and promote the involvement of women, youth, NGOs and other major groups in implementing Agenda 21. In June 1993, the UNDP Administrator presented a report to the Governing Council of the UNDP on follow-up to UNCED. A key effort in this regard is Capacity 21, a programme which encompasses a wide range of activities aimed at enhancing developing countries' capacity to prepare and implement sustainable development strategies. UNDP is also preparing for a detailed review of current Country Programmes to ensure that they support a sustainable development approach.

Through the United Nations Sudano-Sahelian Office (UNSO) and the Global Environment Facility (GEF), the UNDP is directly active in the areas addressed by the three UNCED conventions. UNSO, a joint activity of UNDP and UNEP, is primarily concerned with projects to combat drought and desertification in 22 countries of the Sudano-Sahelian region of Africa. UNSO is supporting negotiations for the Desertification convention. The GEF, which UNDP co-manages with the UNEP and the World Bank, is described in a separate profile. The UNDP's role is to coordinate and manage the financing of pre-investment and technical

assistance activities, and to administer the Small Grants Programme, which is oriented to community-based NGO projects. UNDP GEF funding for the first five 'tranches' of projects totalled \$270 million, with most of the funds going to global warming and biodiversity.

2.2 General Environmental Activities

The environment is viewed as central to development objectives in almost all sectors with which the UNDP is involved. In 1990, the UNDP Governing Council selected the environment and natural resources management as one of six areas of focus. Continued growth in spending on environment is anticipated. UNDP currently finances more than 630 environment-related projects valued at over \$700 million, and anticipates that in the order of 30 per cent of its resources over the 1992-1996 cycle will go toward environment-related programmes.

The principal office in terms of environment/sustainable development is the Environment and Natural Resources Group (ENR). Its responsibilities include: coordination of and policy/strategy development on environmental matters; the "mainstreaming" of environmental concerns into all UNDP programmes; and provision of technical advice on sustainable agriculture, forestry, energy, water management, waste management, environmental education, and sustainable development policies and strategies. However, while ENR is responsible for ensuring a coherent strategy amongst various UNDP actors and programmes, it is the regional bureaus and the field offices that must ensure a coherent implementation of this strategy at the national level.

Staff units dealing with the GEF and Capacity 21, as well as with the Montreal Protocol and the Sustainable Development Network, are attached to ENR. With respect to the Montreal Protocol, the UNDP, in partnership with three other agencies, is assisting developing countries to phase out use of CFCs and other ozone depleting substances, under the Multilateral Fund of the Protocol. UNDP's Sustainable Development Network (SDN) -- an international information exchange network on policies, technologies and training opportunities related to natural and human resources -- was launched in 1989 to strengthen learning and other links between sectors (governments, NGOs, the private sector, and development donors) and between developing countries. Networking takes place through a variety of mechanisms, including electronic messaging and conferencing. To date, 35 pilot SDNs have been launched, three of which are regional. UNDP allocated \$1.2 million for SDN pilot projects, through June 1993. UNDP's support is catalytic, with each SDN expected to develop long-term financing arrangements.

In addition to UNSO, environment-related interests of other UNDP associated programmes include: the state of environment of local communities; rural water supply in least developed countries; the community resource management roles of women; and the role of NGOs and grassroots organizations in managing natural resources.

2.3 Environmental Research

UNDP does not have resources for research per se, and in neither Capacity 21 nor the GEF is there much emphasis on research. Nonetheless, as discussed in the GEF profile, there are a small number of GEF-supported research projects, and many of the other projects have a research component. Similarly, although Capacity 21 is primarily focussed on policy and operations, the goal of assisting in the practical integration of environment with national development policies and activities often requires some research.

A small applied research component is also contained in the Sustainable Agriculture Network. NGOs and local farmers will be the main research participants. And in a programme with the private sector and with academic institutions (MIT) there is a component for research on technologies for the urban sector.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

The UNDP is committed to the belief that all development activities need to integrate capacity development. The Governing Council identified capacity-building and capacity-strengthening as the priority for each of the six areas selected for the current programming cycle. With respect to capacity development related to environment and sustainable development, the ENRF has taken numerous important initiatives. In the preparations for UNCED, about 100 UNDP field offices contributed assessments of national capabilities for dealing with environment-and-development issues, and these assessments formed the basis of a report on capacity development for sustainable development. Improving research capabilities was one of the areas addressed.

Capacity development for the purposes of translating Agenda 21 into national action is also the central objective of Capacity 21. Capacity 21 is meant to complement related capacity-development initiatives taking place through other programmes. The focus is on local and national, rather than global, environmental priorities. It is oriented not only to helping to establish a national framework for capacity development in support of sustainable development, but also to identifying critical gaps, and mobilizing resources to help address these gaps. Assistance will be provided in the areas of policy development, human resource training, institutional development, and public participation and information exchange. Some of the priority areas include technology transfer, the promotion of indigenous approaches to and participation in resource management, and the strengthening of opportunities for involvement by women and NGOs.

Capacity 21 will focus on a limited number of countries in which there is long-term national government commitment to UNCED follow-up. Implementation is planned for 10 countries in 1993, and an additional 15 to 20 countries in 1994. Preparatory activities will be supported in an additional 30 to 40 countries. In selecting participant countries, a representative range of conditions and programme content will be sought. The budget for the initial phase of Capacity 21 is estimated at US \$100 million.

Another UNDP-associated fund, the United Nations Fund for Science and Technology for Development (UNFSTD), helps developing countries make use of the latest advances in science and technology, through projects in areas such as: science and technology policy; technology innovation and entrepreneurship, information technology, quality control and maintenance and renewable energy.

The UNDP also contributes to capacity development through its Environmental Management Training Program which will have been held in nearly all UNDP countries by the end of 1994. The course, open to government counterparts, UN agencies, and NGOs is based on the UNDP Handbook and Guideline for Environmental Management, which provide specific tools for development practitioners to integrate environment into development activities.

The UNDP has also made efforts to increase its own capacity, through training programmes for staff and partners, and through the recruitment of environmental advisers and consultants. Some field office capabilities are being strengthened through the appointment of national officers dedicated exclusively to environmental matters.

3.2 Donor Collaboration

Capacity 21 provides a framework for collaboration amongst a host of different partners. Country level programmes provide a framework in capacity development between all these partners (e.g. UNEP, WHO, UNIDO, ILO, FAO, and UNESCO). Capacity 21 is also seen as an instrument for marshalling both sustainable development expertise and financial resources from bilateral and multilateral agencies. Thus, the programme is seen as an opportunity for improved coordination amongst bilateral and multilateral donors in relation to their support for capacity development. Similar results are expected from the Forestry Capacity Programmes. More generally, the UNDP is involved with a large number of collaborative activities, including supports for co-funded activities, such as with US EPA, the Business Council for Sustainable Development, and academic institutions. Many UNDP projects are co-funded with bilateral donors and the Bretton Woods Institutions.

THE WORLD BANK
International Bank for Reconstruction and Development (IBRD),
and the International Development Association (IDA)

1. OVERVIEW

Mandate

The common objective of the World Bank institutions is to help raise standards of living in developing countries, through financial resources provided by developed countries, with an emphasis on improving the well-being of poor people by integrating them in the development process. The IBRD, which was established in 1945, makes loans to governments of more advanced developing countries to stimulate economic growth. Lending decisions are based solely on economic considerations. The IDA, established in 1960, provides assistance primarily to the very poor developing countries, and on less demanding terms than IBRD loans.²

Funding Source(s)

The IBRD's capital is subscribed by its member countries, and its lending operations are mostly financed from its borrowings in world capital markets. Retained earnings and repayments on loans contribute to IBRD resources. The IDA is funded by subscriptions, general replenishments from members, and transfers from the net earnings of the IBRD.

Total Budget

In 1992, IBRD's commitments were over US \$15 billion, and IDA's commitments were over \$6.5 billion.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

The Bank was very active in the lead up to UNCED, and the event itself. It participated in preparatory meetings, etc.; published a special *World Development Report 1992* on environment and development; and established an office of UNCED coordination to develop relevant Bank policies and positions. The Bank's policies on forestry, energy, urban development and other sectors have been adapted to reflect developments and agreements arising from UNCED. The Bank also participates in a UN task force related to an interagency division of labour in implementing Agenda 21. The Bank's emphasis on capacity development, policy reform, and improved technology reflect the broad thrusts of Agenda 21. It should be noted, that the Bank

² The International Finance Corporation and the Multilateral Investment Guarantee Agency are IBRD affiliates. The former supports economic development in less-developed countries by assisting growth in the private sector. The latter was established to encourage investment flows to developing countries through the mitigation of non-commercial investment barriers.

itself has not received any additional finances from its members as a result of UNCED, but through the GEF, which the Bank co-manages with UNDP and UNEP, new money has been committed for climate change and biodiversity projects. The Bank is the repository of the \$1 billion GEF trust fund, and manages GEF investment projects. In some cases, projects are financed solely through the GEF, and in others, GEF may fund a component of a Bank project. The GEF is described in a separate profile.

2.2 General Environmental Activities

The Bank began addressing environmental issues when it engaged an environmental advisor in 1970; but the reorganization in 1987 marked a turning point towards much greater attention to the environment. The central Environment Department that was established at this time formulates and coordinates the Bank's overall environmental policies, approaches, standards, etc., and develops cross-regional and cross-sectoral approaches to promote their application. The Environment Department works closely with the Regional Environment Divisions -- also established in the 1987 reorganization --, housed within the six regional vice presidencies. The Bank's legal department has its own environment unit, and environment is a major cross-sectional theme of the Economic Development Institute in its training activities for borrowing countries. A Vice Presidency for Environmentally Sustainable Development, established in late 1992, houses the Environment, Agriculture and Natural Resources, and Urban and Infrastructure Departments, and is responsible for guiding the Bank's work in applying new environmental initiatives.

The Environment Department's range of responsibilities and activities is wide. It houses the Office of the Administrator of the Global Environment Facility -- the central coordinating body for the GEF's three implementing agencies -- and the GEF Office of the Operations Coordinator, which coordinates the Bank's GEF activities. It prepares "best practice" papers for land and water pollution, atmospheric emissions and air quality, and global climate change. It works on valuation of environmental damages and the environmental impacts of economic policies, and seeks to improve integration of environmental costs and benefits into the economic evaluation of Bank projects and policies. The Department also addresses social aspects of sustainable development, including issues related to popular participation, indigenous people's land use, etc..

The Department also works to ensure effective application of the Bank's environmental assessment process, which is mandated, by an operational directive, for all Bank-sponsored projects with potentially significant negative impacts. Other directives relevant to the project level address such issues as protection of wildlife, resettlement, and protection of indigenous people.

More broadly, recipient countries are now required by the Bank to prepare National Environmental Action Plans (NEAPs), to provide a framework for integrating environmental issues into a country's economic and social development approaches, and a strategic framework for investment planning. The nature of NEAPs may vary greatly from country to country. The degree of Bank support for NEAP preparation depends on the country government's capacity to design and manage the process, but the Department's role is primarily one of providing guidance

and technical assistance. The Department also assists in the preparation and analysis of sector environmental strategies.

Notwithstanding the guiding role of the Environment Department, responsibility for actual implementation of the Bank's environmental policies and programs rests with the operational units and the country departments. The Regional Environment Divisions promote the day-to-day application of the Bank's environmental policies. They deal with both specific projects, and with country or regional level strategic approaches. There are also a growing number of environmental units in country departments.

In terms of project funding, nineteen of 222 projects approved in 1992, representing lending of about \$1.2 billion, were deemed to have primarily environmental objectives (e.g., rehabilitation of water and sewage infrastructure, forest management, protection of critical wildlife areas, community natural resource management, planning for sustainable development and the conservation of biodiversity), and 43 had environmental components. Increased support for environmental projects, particularly clean water, sanitation and energy efficiency, is foreseen.

2.3 Environmental Research

The World Bank's environmental research activities can be discussed in terms of in-house research, and in terms of studies that are financed as part of an investment project (i.e., are aimed at the immediate needs of a particular Bank lending operation). With respect to the former, the central role of the Bank's Research Program, which expended \$24 million in 1992, is to respond to the Bank's needs in performing its work. Research on environment and natural resources -- considered a priority area -- may be carried out by various branches of the Bank, and by regional bureaus. A focus on environmental economics reflects an orientation to the use of fiscal incentives and the marketplace to achieve environmental objectives. Research activities currently carried out by the Environment Department itself cover a range of issues, including environmental accounting, adjustment and the environment, integrated land and resource management, global environmental issues, and the protection of biodiversity.

The funding of environmental studies in developing countries via research components of credits and loans is probably much higher than the value of the Bank's in-house research, but is hard to tabulate. Infrastructure projects usually have many associated studies, a small but increasing number of which are environmental assessment-related, including research on baseline environmental conditions. Some of these studies would likely qualify as adaptive research. However, the results are rarely evaluated, and there is no networking to share resultant information and ideas.

As a general rule, the Bank does not fund stand-alone environmental research activities in developing countries, though a portion of the central Research Support Budget is used to support research in developing countries, including visiting research fellows, and research networks in Sub-Saharan Africa. The Bank also contributes to multilateral research networks (about \$26 million annually in mid eighties), and, together with the FAO and the UNDP, is a cosponsor of the CGIAR. The Bank provides the CGIAR chairman, and the executive secretariat.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

The Bank has increasingly expanded the scope of its technical cooperation activities beyond the limits defined by capital project preparation and execution. Environmental capacity development focuses more on assessment and management than on research; but growth in support of it, particularly via institutional strengthening, has been rapid, as it is seen as an integral and cost effective component of the Bank's new environmental strategy. Environmental capacity development occurs through several mechanisms. The first is through support for the full environmental assessments required for so-called Category A projects (i.e., projects likely to have significant adverse impacts): the Bank sponsors training for project-related impact assessment, and usually also requires and supports the establishment of an environmental unit for the project within the national proponent agency. In addition, if the central environment ministry is weak, the Bank may support measures (e.g., training) to strengthen it.

The second mechanism for environmental capacity development is through the increasing number of so-called "free-standing" environmental projects which are oriented to strengthening national environmental capabilities; usually within government, but sometimes also through centres of excellence. Of the nineteen primarily environmental projects approved in 1992, six were for developing institutional capacity to plan and implement environmental action plans, and ten were primarily concerned with better management of resources.

A third mechanism for environmental capacity development, which involves direct technical assistance and training more than financing, is support for the preparation of NEAPs. Related initiatives may include workshops and other forms of training for environmental assessment in a particular sector of importance to the country. The Bank's Economic Development Institute is also increasingly involved with environmental capacity-development initiatives, ranging from information dissemination to training.

3.2 Donor Collaboration

The Bank cooperates on environmental policies and programs with other multilateral institutions, especially the UNEP and the UNDP. Implementation of funding mechanisms for the Montreal Protocol, and implementation of the GEF, institutionalize policy coordination between these three agencies. The Bank and the UNDP have also agreed to strengthen cooperation in the area of aid coordination for technical assistance, and to cooperate in developing local capacity for management of technical assistance, using the UNDP-sponsored National Technical Cooperation Assessment and Programmes approach. The Bank will also make use of UNDP's regional representatives, and has begun coordinating extensively with UNDP's Capacity 21 initiative (sustainable development plans) to promote and facilitate the development of NEAPs. At the country/project level, the UNDP, UNICEF, the WHO, the FAO and the World Food Programme are regular institutional collaborators.

The Bank is also a member of the InterAgency committee for Sustainable Development (IACSD) of the ACC, which was established to improve coordination within the U.N. system for the implementation of the RIO accords, particularly Agenda 21.

A new position was recently created in the Bank's European office to improve coordination with the rapidly increasing aid activities of the EC. The Bank also maintains a dialogue with the OECD's DAC to enhance mutual understanding of priorities, policies and practices with bilateral and multilateral aid donors. The Bank contributes to DAC work on environmental matters of mutual concern to multilateral and bilateral aid donors. The report of a recent task force on the Bank's role in technical assistance acknowledged the need for better aid coordination of technical assistance with other agencies and donors, and recommended establishment of a technical assistance grant facility. The Bank's environmental training activities often involve teaming up with other agencies or organizations. The Bank is also promoting NEAPs as an important input to country-level donor coordination (in particular, to guide donor pledging as it occurs through country-specific consultative groups).

The Bank is also engaged in a systematic effort to expand NGO involvement in the projects it finances. In 1992, 66 of 222 approved projects had NGO participation, and ten of these were primarily environmental projects. The IUCN and the WWF are major NGO partners.

EUROPEAN ORGANIZATIONS

DENMARK: Danida

1. OVERVIEW

Organization and mandate

Danida is an important part of the Ministry of Foreign Affairs responsible not only for planning and conceptualization of foreign assistance but also for its implementation.

The principal aim of Danish development cooperation is to contribute to lasting improvements in the economic and social conditions of the poorest groups. Concern with environment and development is an important part as well as human rights, health and hygiene, water development and the position of women. Sustainable development is a basic prerequisite in all projects.

The Ministry is advised by a Board of International Development Cooperation. There is also a Council of International Cooperation with 75 members. The composition of the Board and the Council ensures a broad area of contact between the various groups and organizations that are central to Denmark's participation in international development cooperation. Recent major legislation includes (a) new guidelines for assistance from 1989 including a reduction of recipient countries to about 20 - 25, and (b) an important decision by the Danish parliament (Folketinget) in the fall of 1992 to establish a permanent budget line for environmental and humanitarian development assistance over and above "normal" Danish development assistance of one per cent of GNP. The intention is that this allocation shall increase annually until it reaches 0.5 percent of GNP around year 2000, and that a significant share of these funds shall be used in accordance with the priorities set by UNCED. There is a research advisory council to the Ministry and a Department of evaluation, research and documentation in Danida.

Danida has good relations with the research community through a Council for Development Research and the Centre for Development Research, Copenhagen (CDR) which receives core funding from development assistance funds. CDR is also involved in the ENRECA capacity development programme (see below). Research funding is about two per cent of the total development assistance.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Related Activities

Danida and the Ministry for the Environment are not yet ready with the UNCED report and follow-up plan. The reason for the delay is the recent creation of the above-mentioned large allocation for environmental research for which the operational details are not yet available, but preparation is well under way. Support for regional environmental planning and the

development of national plans is considered important. One of the multilateral departments at Danida has a small UNCED office.

2.2 Environmental Mandate

Administrative capacity building is an important part of Danida's work. Assistance has been given to set up an environmental secretariat for the government of Bhutan to deal with land resource management, a Pollution Control Board in Tamil Nadu and Karnataka in India with SIDA and NORAD, and a collaborating arrangement between the Egyptian and Danish Environmental Ministries exists.

2.3 Environmental Research

There are several levels of research activities. As with all European countries, Denmark has a large and widely diversified research programme on global environmental problems. The Council for Development Research meets twice a year to discuss the funding of some 70 project applications from Danish researchers covering the whole spectrum of research activities. At present 120 projects are active at 30 mDK/year (US\$4.5m). Recently the Council has recommended that Danida develop new initiatives to strengthen the environmental research component nationally and internationally. The Ministry of Foreign Affairs will thus be a part of the interministerial group of eight ministries concerned with a Danish strategic environmental research programme. The programme is a five year initiative to stimulate research in critical environmental problems. The Council also recommended that funds from the new environmental allocation should be channelled as a post-UNCED package.

Research plans include support for the SADCC environmental program on the Zambesi river basin, the so-called ZACPLAN, for the CGIAR system, and for the Centre de Suivi Ecologique in Dakar. Environmental monitoring in Uganda and Ghana, and water resources management in Tanzania are also supported.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

Research assistance policy is based on the idea that research on developing countries should be carried out in those countries and thus support is considered important for capacity development and the creation of viable research environments.

The Bilateral Programme for Enhancement of Research Capacity in Developing Countries (ENRECA) became operative in December 1989 as a new kind of activity for Danida. It is administered by the Department for Evaluation and Research. Its first projects came on line in 1990. The programme supports capacity building in developing countries through provision of equipment and other physical facilities and training and by facilitating the participation of developing country researchers in global research cooperation. The support is provided to individual cooperative or twinning projects through Danish research institutions (universities, research institutes, or private companies) which function as cooperating partners with the developing country researchers and are responsible for the formal management of the ENRECA

support to the project. The programme currently supports 30 projects. Selection criteria are discussed in two Danida documents (reference, see below). A recent evaluation concluded that ENRECA is an important part of Danida research activities. The report points out that there are certain areas that not yet have been included, such as mathematics and physics. Vague interest among some senior researchers in Denmark has contributed to limitations on success. Relying on individual researchers rather than institutions for the twinning arrangements has caused problems. Of the 30 projects several are in the environmental or related fields, such as energy conservation and renewable energy (Ghana), remote sensing units (Ghana), wildlife genetics (Kenya), tropical marine mollusk programme (India, Thailand, Indonesia), and botanical investigations (Ecuador, India).

FRANCE: ORSTOM

(L'Institut français de recherche scientifique pour
le développement en coopération)

1. OVERVIEW

Organization and Mandate

The French Scientific Research Institute for Development in Cooperation (ORSTOM) is not a donor agency, but rather a public research institution specializing in tropical research. It reports to the Government of France through two ministries: Ministry of Research and the Ministry of Cooperation and Development. The annual budget is approximately US\$ 200 million.

ORSTOM's staff of 2500 includes 1500 scientists and engineers. Research programs are carried out in partnership with scientific colleagues in some 30 countries in the tropical zones, with ORSTOM covering the costs of both its own researchers, and usually also the associated operational costs (e.g. lab facilities, equipment, etc.). Much of the research in which ORSTOM participates takes place through centres that have been established by ORSTOM.

For the past 50 years scientific research has been carried out in the following disciplines: geology, geophysics, hydrology, hydrobiology and oceanography, plant sciences, biological and biochemical sciences as applied to humans, social sciences, engineering and communications.

ORSTOM's staff of soil scientists, hydrologists, botanists, zoologists and geographers has historically worked in Central and West Africa, the French-speaking islands in Oceania, French Guyana and the West Indies. In recent decades, work had expanded to the Amazon region, the Andes and tropical Asia, and the focus grew to include anthropology, demography, economics, sociology and environmental studies.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post UNCED Activities

The Government of France has followed up on Agenda 21 through participation on commissions and agencies devoted to environmental issues and problems. France contributed to the establishment of the Commission for Sustainable Development in June 1993. It has recently created the Conseil pour les Droits des Générations Futures.

With respect to ORSTOM in particular, the organization had not undergone much explicit post-UNCED restructuring, partly because ORSTOM's scientific orientation already aligns well with many of the main Agenda 21 themes.

ORSTOM's 5 multidisciplinary departments are:

1. **Earth, Ocean, Atmosphere** - natural hazards, mineral resources, marine environment, climate, volcanic activity, remote sensing.
2. **Continental Waters** - water resources management, pollution control, soil and water quality biodiversity and production of aquatic living resources.
3. **Sustainable Agricultural Activities** - food security in arid zones, conservation of biodiversity, desertification, demographics/migration, biotechnology.
4. **Health** - tropical disease vectors, nutrition.
5. **Society, Urbanization, Development** - policy formulation.

ORSTOM attempts to adopt a regional focus in its research. However, one dimension requiring ongoing attention in the post-UNCED period is better integration of the natural and social sciences.

2.2 Environmental Research

ORSTOM conducts basic and strategic research on the natural environment and on human societies. Thus, much of the research supported by the organization is environmental. In 1992, ORSTOM devoted its entire Annual Report to a discussion of environmental research.

ORSTOM is driven by 4 main themes:

- The function and evolution of major ecosystems
- Tropical agriculture in fragile regions
- Environment and health
- Human activities and changing societies

National and international programs include the study of biodiversity, water resource management, climate change and desertification. One of ORSTOM's priorities is the diffusion of research results.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

Through training and other support programs, ORSTOM contributes to the strengthening of scientific capacities of Third World nations. The organization's departments decide on the allocation of research funding, in relation to the expressed needs of developing country research partners. Annual meetings are held with the research partners.

Some research programs have a training component allowing young southern scientists to gain experience in field work at ORSTOM centres in the South or at laboratories in France. ORSTOM gives grants for university training and thesis writing. ORSTOM has links with some international, regional and national research centres in Africa (e.g. Senegal) and Latin America (e.g. Brazil), and Asia. Most contact with South American and Asian scientists is within the university system.

In order to improve the dialogue between specialists of different disciplines, and to strengthen scientific capacities and institutions in the South, ORSTOM will be using mechanisms such as:

1. Transformation of ORSTOM centres into regional or international research centres. ORSTOM is attempting to reduce its ownership and management of research centres in the developing world, via transfer of these functions to national authorities or international boards. Two examples are the International Institute of Scientific Research for Development in Africa (IRSDA) in Côte d'Ivoire for biotechnology in Africa, and a centre in the Congo for managing forest, water and soil conservation, and nutrition and health.
2. ORAGE (ORstom Anthropisation Gestion des Ecosystèmes) is a centre being established near Paris for training French and foreign scientists in interdisciplinary research on human interaction with the environment.
3. AIRE (Agence pour l'investissement de la recherche à l'étranger). Plans are underway to create a non-governmental funding agency with other French partners which will give research grants to individuals or teams of scientists, and will support the North-South and South-South transfer of knowledge through networking activities between research institutions, NGOs and industries.

3.2 Donor collaboration

There is an acknowledged need for better coordination of research support and research activities. ORSTOM attempts to involve other donors and research organizations in its projects, and had participated in the development of collaborative undertakings.

As one notable example, ORSTOM has worked for the past 20 years with the WHO and the World Bank in the multi-donor program to fight onchocercosis in West Africa, integrating its medical and environmental expertise.

Opportunities for collaboration with UNEP and the GEF are expected to materialize in the near term.

GERMANY: BMZ, GTZ, AND KFW

GENERAL OVERVIEW

The German aid organization is somewhat different from that of other countries in that it still makes a marked distinction between technical and financial assistance. Authority is highly concentrated in the Ministry, *Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung* (BMZ) which is the policy making institution with political responsibility through the minister to the Bundestag. If necessary it requests the approval of other ministries of the government. It is responsible for selecting projects and programmes, ensuring that they comply with development policy and supervising the implementation. Target groups for assistance are the poor, particularly women and organized self help groups. Agricultural production systems, including preservation of the environment, are the focus of all the agricultural projects. The private sector is a third target group and here BMZ through GTZ supports the development of entrepreneurship, business cooperation and training and technical education and a wide variety of project approaches. German development assistance has for a long time been very rurally oriented, but the environmental issues have had an impact on policy and generated interest in urban areas.

The BMZ entrusts the implementation of projects to a number of executing agencies of which the most important are the *Gesellschaft für Technische Zusammenarbeit, GmbH* (GTZ) and the *Kreditanstalt für Wiederaufbau* (KfW).

The BMZ also finances, partly or totally, the German Foundation for International Development, The Carl Duisburg Society (CDG, training of technical personnel in collaboration with German industry), the German Volunteer services (DED) and some research institutes, such as the *Deutsche Institut für Entwicklungspolitik* in Berlin and *Wissenschaftszentrum Berlin für Sozialwissenschaft*.

The BMZ is supported by a Research Advisory Group (*Wissenschaftliche Beirat*).

I. GESELLSCHAFT FÜR TECHNISCHE ZUSAMMENARBEIT, GMBH (GTZ)

1. OVERVIEW

Organization and mandate

GTZ is a limited company and the main operational arm for technical assistance of the BMZ. It has a very wide specialist competence in a variety of fields. The GTZ largely relies on the service of private consultants, and occasionally universities and research institutions for project implementation.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post UNCED activities

The Environmental Department coordinates the work on how Agenda 21 fits in the current programme. New priorities do not exist, as much of the work suggested in Agenda 21 is already being done by GTZ in one form or another.

BMZ has ordered the development of two projects on the follow up of the two conventions: (a) on how to support developing countries in their reduction of green house gases, and (b) on how to support participation of developing countries in the biodiversity follow-up.

2.2 General Environmental Activities

GTZ considers development cooperation in the environment sector as one of their main objectives and has currently approximately twenty pilot projects, especially for the development of new environmental instruments. Two areas are considered important: the training and development of administrative capacity in handling environmental questions, and the development of environmental action plans as well as methods for *Umweltverträglichkeitsprüfung* (Environmental Impact Assessment). Support is given initially for field and laboratory equipment as well as other infrastructural items, and the collaboration that has been introduced in this way later leads to discussions and cooperation on environmental training and policy development.

2.3 Environmental Research

Research and "studies" take place mainly in the context of bilateral projects. Training, which is an important part of the GTZ policy includes research training on site or in postgraduate courses in German universities or other more tailor-made courses. The support is channelled through the bilateral programme and there are at present some 75 university projects of which a few are in environmental science. There are some new accents in the support for universities and higher education, such as support for activities aimed at increased efficiency and management in universities rather than quantitative increases of various kinds. Training also includes research training on site or in postgraduate courses in German universities or other more tailor-made courses.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

Support for Capacity 21 is discussed. One important issue is "popular dissemination of environmental facts and issues through schools and media."

Collaboration with other donors takes place in the working groups of the OECD or within international joint action on for example Tropical Forest Action Plans.

II. KREDITANSTALT FÜR WIEDERAUFBAU (KfW)

OVERVIEW

The *Kreditanstalt für Wiederaufbau* was originally set up to administer Marshall aid to Germany after the war and still has a large part of its efforts geared towards providing credit and investment advice to the German economy, especially with the problems of integrating the former East Germany into the German economy. One part of the KfW is concerned with credit and provision of capital and to a certain extent capital projects for developing countries. Funds for this activity come from the BMZ.

KfW has no research of its own, but commissions "studies" and various types of reports, often with imaginative approaches such as on the use of self-help and self-help organizations in financial cooperation or on socio-cultural problems in financial assistance. KfW has no special division or actions devoted to UNCED.

KfW is to a certain extent involved in personnel assistance. Financial cooperation needs functioning institutions at the receiving end. Environmental control measures are the first to go if a project is not an economic success. Therefore training and institutional development are considered an important first step in financial assistance.

ITALY: DIREZIONE GENERALE (FOR DEVELOPMENT COOPERATION) (Draft Profile)

1. OVERVIEW

Organization and mandate

Development cooperation is an integral part of Italian foreign policy. A *Direzione Generale* for development cooperation within the Ministry of Foreign Affairs has the mandate to promote, and implement medium-term projects and follow through emergency activities.

The *Direzione* has twenty offices. Decision-making and consultative organs include the Inter-ministerial Committee for Development Cooperation, which has the mandate to establish planning directives for development cooperation and determine priorities for geographical areas. A Consultative Committee, including experts from outside government, formulates planning policy. Finally, the Committee of Administration defines directives for implementation and approves large-scale cooperation initiatives.

There are 20 priority countries as well as a Sahel programme. The sectors of interest to Italian cooperation are agriculture and food production, research and studies in soil conservation and post-harvest technologies, health care, infrastructure development (especially transportation and telecommunications), industry (especially entrepreneurial capacity development and local employment) energy and raw materials development, the promotion of women, and natural resources and the environment.

2. ENVIRONMENTAL RESEARCH ACTIVITIES

Research and "studies," involvement of universities in development activities and training are parts of the bilateral programme. This programme includes university training in Italy or on site, research for the dissemination of technical knowledge and new technologies, and the support for cooperation between NGOs.

In the environmental sector support is given to prevent "ecological degradation" as well as to the provision of essential services to large towns. Several projects in this area contain research at various levels. Almost all include a training component.

In the multilateral programme, funds are made available for the CGIAR system. Collaboration, especially in capacity development, is also carried out through support for a variety of EEC programmes.

THE NETHERLANDS: DGIS, MOW, AND NUFFIC

GENERAL OVERVIEW

Several institutions in the Netherlands are involved in development of environmental research and of research capacity in developing countries: The Directorate General for International Cooperation in the Ministry of Foreign Affairs (DGIS), The Directorate of Research and Science Policy of the Ministry of Education and Science (NUFFIC), and The Advisory Council for Scientific Research in Development Problems (RAWOO). Input also comes from the literally hundreds of institutions involved in environmental research or issues.

I. DGIS

1. OVERVIEW

Organization and mandate

The DGIS is a major part of the Ministry of Foreign Affairs and is responsible for policy and executive aspects of administration of the development programme. A wide variety of advisory services and institutions assist DGIS. Most projects are executed by outside agencies under supervision of the Minister for Development Assistance. Aid is directed primarily to low income countries and ten programme countries that receive more than 40% of bilateral ODA.

Strengthening functional research policy in developing countries is a new goal for Dutch research assistance. Another is promoting the participation of development country researchers in international research programmes and in international scientific organizations. A third goal is maximization of the accessibility of research carried out elsewhere.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post UNCED activities

The government is still working on its UNCED report to Parliament, but the report should be ready by August/September 1993. Delays are due to the shared responsibility with the Ministry of the Environment. The environmental department of the DGIS deals with research issues and Agenda 21 issues as they pertain to developing countries. Overall responsibility for UNCED affairs rests with the Ministry of the Environment.

2.2 Environmental Research

The Netherlands is at present spending about 4.4% of their total development cooperation expenditure on environmental policy issues. the Research and Technology line of the budget is 0.6% of total development cooperation disbursement but is mainly earmarked for AIDS and malaria research, agriculture and environment, and incentives for biotechnology development.

Research within DGIS is organized around a research coordinator with the responsibility for the coordinated development policy and for the feedback of research findings to policy-makers. There is also a Research Projects Committee (PCO) with the task to review and assess research projects for funding from DGIS funds. The Spearhead Programme on Research was set up in 1992 geared towards policy implementation, creation of new knowledge and strengthening of research capacity.

The Ministry has published a *Policy Document on Research and Development* outlining how research policy has been elaborated as an instrument in development cooperation. Three basic principles may be distinguished which are also valid for environmental research:

- 1) Research can play an important part in improving the quality of development cooperation policy if it is geared towards sustainable development and economic self-reliance, especially towards the alleviation of poverty, sustainable environmental management and gender issues.
- 2) The policy document adopts a broad definition of the various types of research and the role that research can play, especially its functionality aspect.
- 3) In order to maximize the utility of research an attempt is to be made to integrate research activities into all relevant policy fields of development cooperation.

The Netherlands Organization for Scientific Research (NWO), and the Netherlands Foundation for the Advancement of Tropical Research (WOTRO) the Ministries of Education and Science and of Agriculture, Nature Management and Fisheries as well as other ministries will participate in an Interministerial Steering Committee on Educational Cooperation for Developing Countries (ISOVO). Ministerial activities are also divided into so-called Spearhead programmes (one of which is on the environment). The Ministry has earmarked 10% of all special programmes to research and 5% of all bilateral funds (approximately DFL 250 m or US\$ 130m) go to research.

The Spearhead programme on the Environment provides scope for financing projects in areas such as a review of non-renewable energy sources in calculations of national wealth; technology research into the deployment of renewable energy sources; low-investment agriculture; tropical rainforests, i.e. through co-funding the Tropenbos Foundation and ICRAF, biodiversity through CGIAR institutes, and climatic/coastal zone management. Each of these fields will be the subject of separate policy documents. Ten per cent of the

programme budget will be earmarked for research. Important factors are the long-term, multi-year approach and a multidisciplinary approach.

The DGIS made an inventory of its research projects in 1990 that revealed a lack of perception of research needs in the developing countries concerned. Research proposals were often initiated from the Dutch side. "Development related research has often been rather a subsidy to Dutch researchers and institutions than an investment in development." (Box and Boer 1991:8). In this respect the Dutch findings are very similar to those found in most other European collaborating research programmes with developing countries. Almost half of the research projects were carried out in the context of country and regional programmes. Fifty-five per cent of all research activities were in the agricultural sector.

Many large scale programmes are supported by DGIS in collaboration with other ministries, so, for example, in the environmental field support is given to The Tropenbos Foundation (DFL 1.8m - US\$ 930k), the Centre for World Food Studies (DFL 1.9m), the Special Programme on Biotechnology (DFL 10m - US\$ 5m annually), and the Royal Tropical Institute (KIT).

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

The coordination of research donors is presumed to take place through existing consultative groups, in an EC framework and in biennial informal discussions between like-minded donors (SAREC, IDRC). Research cooperation is considered to be a CSD responsibility.

Netherlands has supported university cooperation through NUFFIC and provided universities with teaching staff is now changing into another model. Instead of the strong emphasis on cooperation with Dutch universities that may cause dependence, one now wants instead to concentrate on other forms of support to institutions in developing countries.

Capacity building in terms of PhD programmes and training of researchers is the goal of many imaginative experiments in the Netherlands. The Spearhead Programme on Research and the Netherlands Fellowship programme will set up a fund that will finance Ph.D. fellowships mainly on a sandwich basis. From a total of one million DFL a year the fund will be able to finance some 40 fellowships. Several research schools have been set up and a Graduate School of Environmental Research with international collaboration is in an advance stage of planning helped i.a. by the Joint Financing Programme of Cooperation in the field of Higher Education (MHO).

II. MOW

1. OVERVIEW

In the **Ministry of Education and Science**, (MOW) is responsible for much of the DGIS funded development-related education and research implementation. There exists a considerable interest in environmental research in its Directorate of Research and Science Policy. Research and Science policy is a shared responsibility and each minister is responsible for R&D in his or her own field. The coordination of the science policy activities is the responsibility of the Ministry of Education and Science, and that of technology research policy is the Minister for Economic Affairs. As in most western countries, there is a multitude of bodies advising on research and funding research.

2. ENVIRONMENTAL RESEARCH

The Netherlands is an active participant in all the major international and global environmental research activities such as the Global Change programme, and the START concept as well as the Land-Ocean Interactions in the Coastal Zone (LOICZ) within the International Geosphere Biosphere Programme (IGBP), World Climate Research Programme, and many others. The Ministry has established i.a. a research centre for fundamental climate research at the University of Utrecht, and supports the Tropenbos programme; it is also contributing through a variety of national programmes to international research, for example the Human Dimensions of Global Environmental Change programme and the Netherlands Indian Ocean Programme.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

The Dutch Institutes for International Education is a set of five graduate schools that provide training and research opportunities also for people from developing countries. Especially relevant for environmental research are the International Institute of Aerospace Survey and Earth Sciences (ITC) at Enschede, The International Institute for Infrastructural, Hydraulic and Environmental Engineering (IHE) at Delft (with environmental projects in the Philippines, Indonesia and Uganda), and the Institute of Social Studies at The Hague.

Lately, much advanced training takes place in new graduate research schools set up at various universities. A proposal from IHE to set up a Research School in Environmental Science for Developing Countries (ESDEC) with international collaboration was discussed in March at a workshop in Delft with participants from five European countries.

III. NUFFIC

The promotion of cooperation between Dutch universities and their counterparts in developing countries is a special task of a national organization, NUFFIC, funded by the MOW and by a special programme from the DGIS. NUFFIC also handles OECD research cooperation and the evaluation and comparison of higher education degrees in Europe.

The Advisory Council for Scientific Research in Development Problems (RAWOO) has the task to advise the Minister for Development Cooperation and the Ministers of Education and Science and of Agriculture, Natural Resources and Fisheries on the policy to be adopted in respect of research important to Third World Development. RAWOO links researchers with those who use or have an interest in research findings and with government.

RAWOO has had to target some very specific areas and now advises on priorities in medium and long-term research and on organizational infrastructure with which to implement such research. RAWOO has been requested to produce recommendations in a variety of fields i.a. the scope for reinforcing the position of developing countries in the international research community, particularly with respect to international research programmes, and the relation between international research agendas and national research priorities, and finally recommendations on how to strengthen research capacity in developing countries. All these areas are of interest to any type of environmental research programme.

NORWAY: NORAD

1. OVERVIEW

Organization and mandate

The political responsibility for Norwegian development assistance is through the ministry of Foreign Affairs. A general directorate, NORAD, under the political responsibility of the Minister, has as its main task to implement the bilateral part of Norwegian development aid. A main objective of Norwegian development cooperation is to assist the developing nations in their efforts to bring about lasting improvements in the political, economic and social conditions for the entire population, within the framework of the natural resource base. Institutional development that implies long-term objectives is an important policy as is the concentration on development of human resources, the importance of productive activities, and the improvement of the conditions of the poor, especially women and children. Capacity development for responsibility in the management of natural resources is another emphasis, as well as and the environment, and support of social, political and economic human rights. Improved knowledge of the conditions and circumstances in partner countries is seen as essential. There is a definite rural emphasis and the major share of Norwegian aid will be channelled to rural communities. All these policy statements are of importance for environmental research.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post UNCED Activities

A major government paper on the results of UNCED and its implications for Norway was produced in December 1992 and presented and discussed in parliament in the spring of 1993 (St. meld.nr. 13) (1993-93) *Om FN-konferansen om miljø og utvikling i Rio de Janeiro*). In commenting on the various chapters of Agenda 21, the paper stresses the importance of using the knowledge of local groups concerning the management and conservation of natural resources. The collaboration with academic milieus in developing countries and suggestions for support to such collaboration is stressed as important. Equally important is the transfer of relevant research results in a variety of forms understandable by users such as politicians, other researchers and the general public. NORAD's role in the implementation of Agenda 21 is not yet clear.

2.2 Environmental Research

Two aspects of the Norwegian research milieu are important: the creation of an organization for inter-university cooperation, which includes development research and the merging of the Research Councils during the spring of 1993 into one Norwegian Research Council. One of the sections is designed to deal specifically with environmental and development research.

The Ministry has a development assistance section, where research issues and some research funding are looked after by a small group. The major part of research funding is, however, channelled either through bilateral projects or to multilateral organizations. The administration of research is divided between very many different and separate administrative units with ensuing problems of coordination.

The declared research policy includes support for research capacity (including environmental research capacity) in developing countries as well as in Norway. The priority task is, however, capacity development in developing countries and the improvement of their access to research results and of their participation in international research. The issue that confronts most research capacity supporting organizations, whether the emphasis should be on high-quality research or capacity building in terms of formal training, has not yet been resolved. By implication, however, the emphasis seems to be on training.

The Ministry plans to continue supporting Norwegian thematic research within fields of particular importance to the aid administration. A programme for strengthening environmental competence related to developing countries was transferred to one of the former research councils in 1992. In the near future the responsibility of this programme will be transferred to the environmental section of the new Norwegian Research Council.

SWEDEN: SIDA AND SAREC

GENERAL OVERVIEW

The Ministry of Foreign Affairs has the political responsibility for development assistance and a special policy unit under a Minister of State for Development Cooperation is a part of the Ministry. This unit also handles multilateral assistance.

The Swedish International Development Agency (SIDA) is the largest agency for development aid. Through SIDA is channeled about 52 per cent of all Swedish development aid and almost 80 per cent of all bilateral aid. SIDA operates under a board of directors appointed by the government. Within SIDA environmental issues are handled by the Division of Natural Resources, except issues relating to urban development, water and climate change which are the responsibility of the Infrastructure Division. Support to higher education is the responsibility of the Education Division, but such support within the agricultural sector is handled by the Division of Natural Resources.

The Swedish Agency for Research Cooperation with Developing Countries (SAREC) supports research and capacity building for research in developing countries.

The Scandinavian Institute of African Studies at Uppsala is also under the ministry and concentrates on research on modern African issues. Other organizations exist under the Ministry of Foreign Affairs as well but are more geared to Swedish commercial interests. A variety of professional organizations, set up in conjunction with private industry and line ministries also exist, serving the above organizations with knowledge: SWEDFOREST, SWEDEHEALTH.etc.

I. SIDA

1. OVERVIEW

SIDA began in 1958 as *Nämnden för Internationellt Bistånd* (NIB) which succeeded an earlier Central Committee for Technical Assistance. The name was changed to SIDA in 1964. SIDA has enjoyed an extensive autonomy, but recent (1993) changes introduced by the present centrist-right government has centralized much policy decision-making to the unit in the Ministry of Foreign Affairs. Funding comes through the government budget each year. Ninety-seven percent of Swedish aid is given as grants. The annual budget in 1993 was 10 billion Swedish kroner (\$1.3 billion US dollars). SIDA had 560 employees in 1992.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post UNCED Activities

Several of the basic ideas expressed in Agenda 21 are already present in Swedish development co-operation. So, for example, the focus on poverty, popular participation and the role of NGOs have a long history in SIDA's assistance.

SIDA has given priority to two areas: capacity building and the sustainable use of natural resources. Both activities include qualified studies and research.

SIDA will support country initiatives to elaborate national environmental plans such as Environmental Action Plans, Tropical Forestry Actions Plans or Natural Conservation Strategies. It is considered important both to have such plans and that they be national undertakings. The assistance in this field also includes the strengthening and capacity upgrading of the staff of natural environmental institutions of various types.

2.2 General Environmental Activities

A new and fifth objective of Swedish development cooperation, "sustainable use of natural resources and protection of the environment," was added in 1988. A special environmental vote by the Swedish Parliament some years back has made it possible for SIDA to expand their environmental programme.

2.3 Environmental Research

Swedish development co-operation through SIDA has placed increasing emphasis on the central role of knowledge production and capacity building. SIDA supports higher education and research primarily as integral components of larger programmes, for example sector support programmes in agriculture or education. In addition, SIDA has separate budget headings for R & D and for the environment under which support is given to research.

General budgetary support is given to some universities such as UDar Es Salaam, ULusaka, UMaputo. Some of these have produced long term development plans that form the basis for SIDA support. SIDA does not, however, have a unified policy of support to higher education and research.

The SIDA *Environmental Action Plan* stresses that the key to improved environment is increased production on small farms and thus support should be given to "research on increased productivity, sustainable agriculture and forestry, sustainable resource management and other environmental research." Support to research should be long-term and focus on institution building, higher education and research as "it is absolutely necessary that developing countries establish their own competence and expertise."

Examples of environment and natural resources projects:

In Kenya, SIDA has for several years been supporting a successful country-wide soil conservation programme. Drawing on experiences from this programme SIDA has built up support to regional soil conservation units in East Africa, based in Nairobi, and in Southern Africa, based in Lesotho. In India support has been given to large programmes for social forestry in different states and also to rural water and sanitation programmes through Unicef. Forest and wildlife projects are supported in several countries, for example Ethiopia, Laos, Vietnam, Nicaragua, Tanzania and Costa Rica. SIDA supports environmental research through NGOs, for example IIED in London and the Beijer Institute in Stockholm. SIDA is also a substantial contributor to IUCN.

II. SAREC

1. OVERVIEW

Organization and mandate

The Swedish Agency for Research Cooperation with Developing Countries (SAREC) was established in 1975 to promote research efforts that contribute to the development of Third World countries as well as to support development research in Sweden. Substantial research resources have been committed for assistance to research of developmental relevance in a wide range of fields encompassing agriculture, environment, health and nutrition, natural sciences and industrial technology, social sciences and the humanities.

Over the years SAREC has evolved policies of research assistance that lay great emphasis on building national research capacity. This is carried out primarily within the context of bilateral support to about 15 developing countries. About 85 per cent of SAREC's support to African countries is directed to universities in those countries and is extended principally for the purpose of building capacity for research.

SAREC has defined its task as follows:

- 1) to assist developing countries in building up their own research capacity in the form of good research environments, training of researchers, as well as methods for planning of, setting priorities in and allocating resources to research.
- 2) to provide developing countries with financial and scientific resources to generate research results in areas important to developing countries, and to make available to such countries research results important to their development,
- 3) to assist developing countries if the need arises, in establishing scientific contacts and cooperation with international and Swedish research institutions.

The assistance is channelled through bilateral research cooperation agreements, through multilateral and international research programmes such as CGIAR, special programmes of the WHO such as the Tropical Disease Research programme, regional research programmes and special initiatives such as the Regional Marine Research Programme in East Africa, and

social science networks in Latin America and Africa. A small part (10 per cent) of SAREC's budget is set aside for support to Swedish research on development, and here SAREC functions in the role as a research council for Swedish research.

National research capacity is thus a key concept in SAREC's policies and programmes. A recent overview (Bhagavan 1992) stresses the difference between activities to strengthen national research capacity in countries with a weak scientific and technological capacity ("capacity-emphasizing cooperation"), and to assist in generating research results in collaboration with countries with a stronger S&T capacity ("result-emphasizing" cooperation).

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post-UNCED activities

The Swedish government has requested all development agencies for their reaction to UNCED and their planned follow-up of Agenda 21. In the following the focus is on SAREC, since that is the agency that primarily supports research for environment and natural resources.

SAREC has begun to concern itself with issues related to the conventions on biodiversity and climate change. For example, support was given to a conference in Nairobi in early 1993 on follow-up of the convention on biodiversity and to an analysis of intellectual property rights carried out by the IBPGR and other institutes of the CGIAR together with NGOs working with these issues. Support is given to preservation of genetic resource material in Ethiopia and a programme to strengthen East African institutions working in this area is under preparation. In the area of energy research SAREC is supporting the African network AFREPREN in addition to bilateral projects, for example fuel cell technology in India and solar energy in Mozambique and Ethiopia. Support has been given to the International Energy Initiative and a project on energy policy research is being developed jointly with SIDA and the Stockholm Environment Institute.

This fall (1993) SAREC has taken the initiative to organize two research meetings. One was held in collaboration with WHO/TDR in September on tropical diseases, environment and society. The other will be organized in November on the problems of land degradation and is connected to the ongoing work toward a UN convention on desertification.

2.2 Environmental research

One of the four problem-oriented sectors supported by SAREC is Rural Development and Environment. SAREC's guidelines in this sector stress sustainable utilization of natural resources and include a variety of research initiatives in agriculture, forestry and the aquatic resources. Examples of new projects now under preparation in the context of SAREC's programme for Agenda 21 follow-up include studies on the environmental consequences of felling of tropical rain forest in Malaysia; research on participatory approaches to social

forestry in India; the use of water resources in African regions characterized by "water stress"; policy research on sustainable development by NGOs; protection of coastal aquatic resources; protection of plant genetic resources in East Africa.

Other important projects in this sector, initiated prior to UNCED, include forestry research in several countries, agroforestry studies in Nicaragua and elsewhere, core support to ICRAF and its African network and support to dry lands research through Swedish universities and through IIED in London. SAREC is also supporting African forestry research through the African Academy of Sciences and a regional MSc/PhD programme in land management at the University of Nairobi.

In the social sciences sector, increasing emphasis is given to environmental economics. Several initiatives are under way to strengthen the teaching of environmental economics at universities in Africa and in Asia.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

The linking of institutions in the developing countries through various forms of twinning arrangements with Swedish institutions is a major SAREC activity and is currently involving some 120 Swedish academic institutions and 200 institutions in 15 developing countries. In addition, SAREC has jointly with SIDA recently been given a mandate by the Swedish government to extend support to common functions, including administration and governance, at selected universities in developing countries, primarily in Africa, with a view to halting the decline of those institutions.

SAREC is collaborating closely with IDRC on a number of activities related to Agenda 21 implementation. For example, a group of experts from developing countries has been established to advise both agencies on new sustainable development project initiatives.

SWITZERLAND'S SDC (Draft Profile)

1. OVERVIEW

Organization and mandate

The Swiss Directorate for Development Cooperation and Humanitarian Aid (SDC, German abbreviation from *Direktion für Entwicklungszusammenarbeit und Humanitäre Hilfe* - DEH) is the Department in the Swiss Foreign Ministry responsible for development cooperation. The Federal Office for Foreign Trade in the Economic ministry is responsible for economic policy measures, financial aid and relations with regional banks.

The SDC has the double mandate of humanitarian aid and of a development cooperation that supports efforts of developing countries to improve the living conditions of the inhabitants and self-reliance. In 1991 the total ODA was Sfr 1,156m - US\$ 800m.

The SDC does not fund research, but it finances a variety of activities of Swiss universities including environmental projects of the University of Bern in Ethiopia, Kenya and Madagascar.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post-UNCED Activities

The organization has not taken any specific internal policy or programme initiatives in response to UNCED.

2.3 General Environmental Activities

Environmental issues and initiatives at the SDC pre-date UNCED and the SDC is dedicated to "fostering the process of development while respecting the environment." Education and professional training are another development goal. The Rio conference, however, has contributed to an increase in the collaboration between various government agencies and ministries on environmental issues.

2.3 Environmental Research

Two initiatives are worth mentioning:

The Swiss National Science Foundation (SNSF) has a Priority Programme of seven different sectors or modules. The Module 7 is called Environmental Technology and Environmental Research (or Priority Programme Environment, PPE).

There was no financing originally allocated for this module for the 1992-1995 funding period but the module was reactivated, largely because of the profile brought to North-South relations by UNCED. Total funding to 1995 is Sfr 6m (US\$ 5m) contributed equally by SDC and SNSF. This initiative represents one of Switzerland's major responses to Rio.

The format includes the requirement for research partnership between Swiss researchers and researchers in developing countries and the introduction of proposal assessment criteria beyond the strictly scientific, "combining the aims of research and development policy." The goal of the programme is to assist in the development of long-term indigenous scientific competence in developing countries.

Another initiative that predates UNCED but was given impetus by the preparations for UNCED is a special fund allocated by the Swiss Parliament in 1991 for cooperation with developing countries. Of the total of Sfr 700m (US\$ 500m), about Sfr 300m is for environment and Sfr 180m is administered by SDC. (Some of the funds are going to the GEF.) Some of the SDC-administered funds are being applied to research. SDC has also provided the bridge financing for the first year of the Geneva-based International Academy of Environment. SDC is at present exploring mechanisms for ongoing support for and management of research.

THE UNITED KINGDOM: ODA (Draft Profile)

1. OVERVIEW

Organization and Mandate

Although three ministries are involved in development policy through a Joint Aid Policy Committee, ODA is the central authority for planning control and some implementation of development cooperation. It is a part of the Foreign and Commonwealth Office and the political responsibility for the ODA falls on the Minister for Overseas Development in the FCO. The aims of ODA are to promote sustainable economic and social development and to reduce poverty and other forms of suffering in developing countries through bilateral and multilateral aid.

Improved knowledge and the continuous supply of relevant and adequately tested technologies are considered essential elements in the process of achieving a better management of the World's natural resources. ODA commissions research directly or through multilateral agencies and the CGIAR. ODA manages the aid programme through five divisions, and representatives at British High Commissions and Embassies. Funding for 1991/92 was just over £1,800m (US\$ 2,250m).

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post UNCED Activities

Agenda 21 and the Rio documentation are under review. A small additional programme of specific environmental research has now (1993) been launched and ODA will commission research in the areas: biodiversity (biodiversity conservation); wetlands (quantification of the value of wetlands in developing country economies); sustainability (qualitative indicators, remote sensing); chemical pollution (environmental geochemistry, transboundary pollution on the marine environment); urbanization (growing demands on resources, environment and urban planning); climate change, (grassland management and climatic change, agrochemicals, the ocean as heat/carbon sinks); forestry (quantification of deforestation soil/atmosphere trace gas fluxes); and land use (sustainable land use and land use strategies, methane production from soil reduction, geochemical mapping).

2.2 General Environmental Activities

The environment issues occupy a crucial place on the aid agenda. There are currently (1992) 202 projects either ongoing or in preparation with a total value of £158m (US\$ 240m) including 54 forestry projects run by British NGOs. Funds are also being provided to help developing countries to tackle global environmental problems such as climate change, ozone layer depletion, inefficient use of energy and loss of biological diversity.

2.3 Environmental Research

The scientific arm of the ODA is the Natural Resources Institute (NRI) at Chatham. For the nineties ODA has developed a strategy for research on Renewable Natural Resources (RNR), published in 1990. Environmental research cuts across the resources-based research areas of the NRI under the Renewable Natural Resources Research Strategy. The strategy areas are: Resource Assessment, Agricultural Engineering, Integrated Pest Management, Food Sciences, Plant Sciences, Animal Health, Forestry and Agroforestry, and Fisheries.

ODA's Natural Resources and Environmental Department (NRED) has commissioned specific research on environmental institutional development, environmental management, and policy studies. There is also a budget separate from the rest of the aid programme, and specifically designed to address global environmental issues. The ODA contribution to the GEF comes from this allotment.

Examples of environmental projects include:

India: Hyderabad Slum Project and the Hindustani Zink Ltd. Integrated mine and smelter project;

Commonwealth: Institutional Capability Building for Management and Assessment of Development Programmes for Major Environmental Concern (Mauritius, Zambia, Ghana, Nigeria, Malaysia, Guyana);

Nigeria: Building the Federal Environmental Protection Agency;

Zambia: Integrated Rural Development Project (Includes much of interest on environmental awareness, and creating local capacity).

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

Capacity building is a part of most collaborative research programmes, not as a separate activity but within institutional development activities. Twinning arrangements with universities are organized by the British Council. International research collaboration on global issues is initiated through the usual channels, and the Department of the Environment. Environmental research collaboration between donors is not a big issue with ODA, (mainly because of limited staff availability) which would rather prefer that collaborative arrangements between donors, if necessary, are organized through the existing post-UNCED and other mechanisms (such as the CSD, the convention secretariats, CGIAR meetings, the EEC and the OECD committees).

ASIAN AND NORTH AMERICAN ORGANIZATIONS

CANADA: CIDA AND IDRC

GENERAL OVERVIEW

Canada's ODA charter gives priority to the world's poorest people and countries. Development priorities are: poverty alleviation; structural adjustment; increased participation of women; environmentally sound development; food security; and energy availability. Fostering partnerships between Canadian people/institutions, and those of developing countries, is also a key goal.

I. THE CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA)

1. OVERVIEW

Mandate and Organization

Established in 1968, CIDA is the main federal government agency for implementing Canada's ODA policies. Recent policy framework emphasizes sustainable development, with 5 pillars of sustainability being environmental, economic, political, cultural, and social. Within this context, a variety of programming activities include: human resource development; agriculture (including fisheries and forestry); energy development; income generation; and health and population.

Funding Source(s)

CIDA administers 75 per cent of Canada's ODA budget, which is voted by Parliament, and is proportional to the Canadian GNP.

Total Budget

CIDA's 1992-93 budget was in the order of \$2.6 billion. The budget is divided between direct contributions (principally bilateral agreements that provide products, and technical and financial assistance, as well as food aid) and funds disbursed through Canadian and international (multilateral) development partners. Canadian non-governmental organizations, the private sector, and the academic community are important partners. The number of staff in CIDA is close to 1200.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

CIDA's Policy for Environmental Sustainability (January 1992) was produced prior to UNCED, but strongly reflects the influence of the Agency's preparations for UNCED. While CIDA has not initiated new programs or projects specifically in response to UNCED, a May 1992 review of CIDA's programming in support of Agenda 21 indicated a broad

range of overlap. CIDA supports projects relevant to climate change, biological diversity and drought. In the five fiscal years from 1985/86 to 1990/91, \$32.8 million was devoted to renewable energy (particularly alternative energy sources for small-scale local use) and energy conservation; \$1.07 million to biological diversity (particularly via consolidation of protected areas, and support to developing country delegations at international biodiversity and conservation conferences); and \$68.37 million to desertification and soil loss (mostly to the Sahel region).

2.2 General Environmental Activities

Key organizational initiatives in relation to environment have included establishment of an environmental advisor office in 1983, and creation of an environment sector in 1987. CIDA's current approach is to integrate environmental considerations into policies, programming and projects, rather than to treat environment as a separate sector with distinct programming requirements. CIDA's recent Policy for Environmental Sustainability (PES) identifies three key concepts that require better comprehension and application in CIDA's programming: the productive potential and ecosystem limits to development (related to carrying capacity and assimilative capacity); the economic value of the environment; and the relationships among poverty, population dynamics, natural resource consumption and environmental degradation.

As articulated in the PES, and further discussed in section 3.1 below, the Agency is also committed to assisting developing countries to improve their capabilities for environmentally sustainable development. CIDA area branches and regional and country programmes have also worked to improve their ability to undertake environment and development programming. As part of its Country and Regional Policy Frameworks, CIDA has committed to analyzing country environmental policies, institutions and conditions, and to developing appropriate program environmental strategies. As further described below, CIDA actively participates in numerous key international fora for harmonizing donor approaches to environmental impact assessment, to national conservation strategies and sustainable development plans, and to capacity development for sustainable development. These activities are in recognition of the need to improve donor understanding of environmental capacity development.

The analysis of CIDA programming for the five fiscal years 1985/6 to 1990/91 estimated that over that period, \$1.32 billion (about 10% of CIDA's budget) had been committed to sustainable development projects. These include the following: projects in which environmental conservation/protection etc. is a primary or major secondary objective; natural resource management projects with long-term environmental objectives; environmentally appropriate activities to meet a development objective (e.g., biological pest control); and reduction of the negative environmental impacts of natural resource use (e.g., desertification control).

2.3 Environmental Research

CIDA is not a research organization, and does not directly fund research per se; although as with other donors, some of the programs and projects it does finance have research components, and research is also supported through extensive financing of graduate and post-graduate studies. More explicitly, as further described below, CIDA supports the development and strengthening of environmental research capacity, as part of its commitment to capacity development for sustainable development.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

Capacity development is a central CIDA commitment, and the agency is integrally involved in supporting capacity for sustainable development both through its work to develop and promote compatible definitions and approaches amongst donor organizations, and through its funding of human resource and institutional development in developing countries.

With regard to the first, CIDA is involved with numerous international initiatives. Perhaps key amongst these is the Task Force on Capacity Development in Environment of the OECD/DAC Working Party on Development and Environment (WPDAE), in which CIDA has taken the lead, along with several other bilaterals, as well as the UNEP, the IUCN, and the WRI. The goal is to generate analytic tools to help map existing capacity, planning tools to support the process of capacity development, modalities for cooperation, and guidelines for aid agencies to support endogenous capacity in environment.

CIDA has also commissioned a series of case studies on capacity development, oriented towards analyzing the process, evaluating the success of specific initiatives, and identifying indicators. Two of the case studies are related to environmental capacity development: one on women and sustainable development, and the other on environment in Pakistan.

In terms of direct support for capacity development, CIDA funds projects to increase the institutional, human resource and technological capacities of developing country governments, communities and organizations. Based on the 1985/86 to 1990/91 survey of programming, it was estimated that in that five year period, \$165 million was spent on institutional capacity development for sustainable development (including contributions to multilaterals for relevant projects), and \$49.67 million for environmental education, training and public awareness (including projects in support of educational institutions involved in environmental education). Third World students and trainees receive training in Canada, or financial assistance through lines of credit. CIDA also provides training on environmentally sustainable development to its own managers and staff, including field officers.

CIDA's emphasis is shifting from environmental institution-building per se, to support for networking amongst various actors in a given society, in recognition of the importance of a shared sense of vision and values in support of sustainable development. CIDA is

increasingly aware of the need for a systemic approach to capacity development for environment, and this requires an analysis of needs which will point to key limiting factors. In some cases, key limiting factors may be of a fundamental societal nature (e.g., environmental values, philosophy regarding public participation), rather than technical (e.g., research capacity or information management systems).

3.2 Donor Collaboration

CIDA has a reputation of being proactive in donor collaboration, and is involved at a variety of levels, from co-funding of specific projects to programming coordination at the country-level, to policy harmonization.

Some donor initiatives towards harmonizing policies and practices in which CIDA participates -- e.g., the DAC/WPDAE Task Force on Capacity Development in Environment, and the analysis of EIA processes used by donors -- have been mentioned above. (Greater ease of donor collaboration at the project level is an anticipated benefit of better harmonized EIA procedures.) CIDA, in collaboration with the Canadian Department of the Environment, is also contributing to a review by DAC and the OECD Environmental Policy Committee of national environmental plans (e.g., conservation strategies, environmental action plans, sustainable development strategies), in an attempt to develop guide-lines to harmonize related efforts. A workshop with developing countries will be held in late 1993.

At the country level, CIDA participates in UNDP-led round tables, and in donor consultation meetings convened by the World Bank. These meetings involve recipient governments, multilateral agencies such as the World Bank, the IMF, and various UN Agencies, and bilateral donors. CIDA's Asia program, for example, has participated extensively in consultative group meetings for Bangladesh, Nepal, Indonesia, India, Sri Lanka and the Philippines. These are useful fora not only for improving funding coordination amongst donors, but also for enabling the donor community to ally on basic issues such as human rights. CIDA is currently promoting a collaborative initiative amongst donors on strategic planning for the environment in Pakistan.

At the program and project level, CIDA has extensive experience with both parallel funding (including contributions to the CGIAR) and co-funding. One co-funded project in which CIDA is a sponsor is the AERC. On the environmental front, another project that CIDA is co-funding is the work by the WWF on the environmental impacts of structural adjustment.

In addition to international-level donor collaboration, CIDA's Institutional Cooperation and Development Services Program (ICDS) works with a variety of institutions active in development (e.g., volunteer-sending agencies, cooperatives, professional associations, universities). At an in-country level, CIDA also organized a recent meeting of Canadian actors (IDRC, the IISD and a number of universities) on capacity development in environment.

II. THE INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)

1. OVERVIEW

Mandate and Organization

IDRC was created by an Act of the Canadian Parliament in 1970 and is funded by the Canadian government. The Centre is directed by an international Board of Governors. Through support for applied development research, IDRC assists scientists in developing countries to identify fundamental, practical solutions to pressing development problems.

IDRC-sponsored research covers an extensive range of topics, from agriculture to health systems, and education to social policy. The Centre's focus has been on research needs as defined, and carried out, by developing countries themselves. Guiding principles for research are that projects be targeted to help the poor, maximize the use of local materials, and strengthen human and institutional capacity. The goal is to ensure that individuals and communities today can benefit from tangible and intangible resource values, yet leave those values intact, or even enhanced, for the benefit of future generations.

Total Budget

In 1992-93 IDRC appropriated \$120 million CAD to projects and operational support. The program budget is allocated to several divisions -- Environment and Natural Resources, Health Sciences, Social Sciences, Information Sciences and Systems, and Corporate Affairs and Initiatives -- and to seven Regional Offices in Africa, Asia and Latin America. The number of IDRC staff world-wide is 486, of whom 95 are officers or senior managers.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

At UNCED, IDRC was chosen by the government of Canada to be one of the key Canadian implementing agencies for Agenda 21. In the months since the Earth Summit, IDRC has established an Agenda 21 Unit to support its UNCED follow-through, and has launched an extensive consultative process to develop and strengthen strategic partnerships and help create the basis for a broadly based North-South coalition dedicated to Agenda 21. IDRC has also reorganized its programs and activities to ensure that a minimum of 50% of its support goes directly to work in support of Agenda 21.

2.2 General Environmental Activities

While the term sustainable development is of recent origin, its underlying philosophy has been a leitmotif for all the work that IDRC has done during its 20-year history. Program activities are directed at policies, institutions and technologies that affect the use, conservation and management of natural ecosystems. Activities include projects in: health and the environment; sustainable agriculture, forestry and fisheries; desertification; biodiversity; alternative management regimes and use patterns for water; common property

resource management; people and nature reserves; and human settlements. Research and training on new information technologies for assessing and monitoring natural resources are also supported. Careful attention is given to small, innovative environmental research projects as these often produce results which are highly applicable and easily disseminated.

2.3 Environmental Research

Environmental research is carried out both as an independent activity and within the framework of other research projects. As noted, research priorities are determined by the developing country institution, but IDRC commonly supports the extension of proposed research to reflect not merely technical, but also social, aspects of environment and sustainable development.

The programs for sustainable and equitable development are organized under the four subject matter headings for which the Centre's divisions are responsible.

Environment and Natural Resources:

Low input sustainable agriculture
Water resources management
Sustainable cities
Green technologies

Information sciences and systems:

Policy research
Capacity building for sustainable and equitable development
Software development and applications

Health Sciences:

Threats to health
Health policy and programs

Social Sciences

Social policy
Learning systems for change
Macroeconomic policy
Industrial and agricultural policy
Regional Integration

Within the universe of sustainable and equitable development IDRC will, over the next three years, devote not less than fifty percent of its program resources to projects falling within six core research themes that relate directly to the environment: biodiversity; food systems under stress; health and the environment; technology and the environment; information and communication for environment and development; and integrating environmental, social and economic policies.

3. CAPACITY BUILDING AND DONOR COLLABORATION

3.1 Capacity Building

IDRC is committed to enhancing indigenous research capacity in developing countries, strengthening human resources development, and augmenting gender research capacity and gender equity. Funding is given directly to research institutions and scientists in universities, and in the private, government and non-profit sectors. IDRC also supports the development of partnerships between developing country and Canadian organizations, institutions, and

scientists. In such cases, the emphasis is on South to North, as well as North to South, flow of information.

In terms of environmental research and management capacity in particular, as an Agenda 21 Organization, IDRC is, with its partners, exploring ways in which the capacity of developing countries for formulating environmental policy, and creating appropriate implementing institutions and regulatory regimes, can be rapidly enhanced. IDRC's experience in supporting capacity development for research and analysis (including use of formal and informal mechanisms at the national and local levels) is being applied to the development of capacity in environmental research and policy-making. For example, a small grants project, conducted jointly by Queen's University and Makerere University in Uganda, encourages managers from government agencies to undertake theses linked to environmental protection. Two projects involving the Mount Everest ecosystem are focused on expanding the capacity of the Nepalese and Tibetan governments to manage the interaction of people and parks. Another project has enabled a consortium of environmental NGOs (ENGOS) to undertake their own state-of-the-environment report for Nigeria.

The creation and strengthening of networks between research institutions, and enhanced access to knowledge, have been key components in IDRC's capacity-building strategy. IDRC has created networks in a variety of research areas, and has helped to link centres of excellence to each other and to weaker institutions. IDRC is also committed to disseminating information generated by Centre programs. IDRC's strength in information sciences and communications was one of the reasons why it was selected as the repository of all the documents emerging from the World Commission on Environment and Development (the Brundtland Commission).

IDRC recognizes the particular strengths of non-governmental organizations (NGOs) in implementation at the local level, and their credibility with local communities. Thus IDRC is working increasingly with NGOs, as well as private research foundations. Action-oriented NGOs have, through partnerships with IDRC and the research community, increased their capacity for research and evaluation of the development process in which they are key players.

3.2 Donor collaboration

IDRC has contributed to numerous donor consortia targeted at research, and/or the strengthening of research and policy capacity of developing countries. The Centre was one of the original donors to the Consultative Group for International Agricultural Research (CGIAR). And in some cases -- for example, the African Economic Research Consortium and the Task Force on Health Research for Development -- it has played a lead role in the formation and operation of consortia for the strengthening of research and research capacity. Other relevant international consortia of donors with which IDRC has maintained active collaboration over the past several years include the International Working Group in Education, and the Task Force of Donors to African Education. In its enlarged post-UNCED mandate, IDRC anticipates working even more closely with other donors to deploy a critical mass of resources for the implementation of Agenda 21.

Key among IDRC's donor partners is the Canadian International Development Agency (CIDA). The two organizations have had particularly close co-operation in developing their strategic thinking on environment and development, and capacity-building in science and technology. Another key partner is the International Institute for Sustainable Development in Winnipeg (IISD). IISD, as a smaller and younger organization than IDRC, has focused its work on policy research and the vital task of communicating sustainable development to a wide audience. SAREC, the Swedish research-for-development agency whose mandate and activities are similar to IDRC's, is another frequent IDRC partner. SAREC and IDRC recently cooperated on the establishment of the Commission on Developing Countries and Global Change. The Commission, composed of eminent Third World scientists, produced a report giving a Southern perspective on environment and development. *For Earth's Sake* was published in time for the Earth Summit and widely distributed.

IDRC has also undertaken a number of collaborative activities with the specialized agencies of the UN system, including WHO, UNDP, FAO, UNESCO, UNEP, UNU, Habitat, and with the World Bank and the Regional Development Banks. The linkage between IDRC and the UN family of international institutions has recently been further formalized through the nomination of non-Canadian governors to the Board of IDRC by the Secretary General of the United Nations. Moreover, in the context of the move to more formal global partnerships by key institutions in Agenda 21 -- such as UNEP, UNDP, the Global Environmental Facility (GEF), major bilateral donors such as CIDA, and major international NGOs -- IDRC anticipates playing a key role in capacity building. IDRC will be consulting with its old and new partners in the very near future to develop the concept of Global Partnerships for Agenda 21.

JAPAN: JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
(revised profile)

1. OVERVIEW

Organization and Mandate

Founded in 1974, JICA is responsible for a major portion of Japan's bilateral grants contributions, in the form of technical cooperation, and assistance in implementing of grant aid cooperation.

JICA's budget for fiscal year 1992 coming from the Foreign Affairs Ministry was about 140 billion yen. A small portion comes from investment and from the Ministry of International Trade and Industry. The volume of ODA and the number of grant aid projects more than quintupled in the decade 1977-1987. In 1993 the number staff members are 1126 in total, of whom 283 are stationed at 50 overseas offices.

JICA is not responsible for the whole process and schemes of grant aid programmes, but takes charge of expediting execution of grant aid programmes: general grant aid; grant aid for fisheries; and grant aid for increased food production. JICA provides equipment and materials for technological enhancement, dispatches expert missions to undertake various development surveys, and administers grant aid programmes for constructing facilities such as hospitals, schools and research institutes. It also administers an emergency Disaster Relief Program, and an Emigration Service for Japanese emigrants.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 Post UNCED Activities

The Earth Summit did serve to reinforce pre-existing trends at JICA and in February 1993, JICA drew up a 5 year plan to reinforce environmental cooperation:

- greater funding for environmental projects
- more emphasis on capacity building
- more caution with respect to environmental aspects of other projects.

A brochure produced subsequent to UNCED, entitled "JICA and the Environment" outlines JICA's activities in support of environmental management and conservation.

2.2 General Environmental Activities

At a summit in London in July 1991 "Japan's ODA Policies on the Preservation of Global environment" were introduced. Conditions were established to include a requirement that cooperation projects be conducive sustainable development, and that environmental impact assessments be undertaken as part of new development plans that are likely to have a strong impact on the natural environment, especially for infrastructure improvement projects. Between 1989 and 1991, Japan increased the level of ODA devoted to work on the preservation of global environment.

Government policy also emphasizes cooperation and collaboration between developed and developing countries, preserving the environment through effective use of technology, holding transgovernmental talks to define the needs of developing countries to identify relevant projects, and alleviating poverty and controlling high population growth when directly linked to environmental problems.

JICA responded to the increased environmental commitments by modifying its organizational structure to handle environmental concerns more effectively: a new division call the "Environment, WID and Other Global Issues Division" was formed, and environmental officers are now located throughout JICA, not just in the Environment Division. Technical cooperation since 1990 has included training, the dispatch of experts and volunteers, and development studies in environmental administration, air and water pollution, water supply and sewerage, groundwater development, waste disposal, mining pollution, ecosystem conservation, afforestation, disaster prevention, flood control, and energy conservation. Some of the Japan Overseas cooperation Volunteers (JOCV) work on Green Projects which aim to alleviate sub-Saharan desertification.

2.3 Environmental Research

Except as studies are needed prior to project implementation (e.g. drilling to determine hydrogeology prior to a water project), JICA neither engages in nor funds research. However, funding has been used to prepare master plans and studies behind those plans, and for educational institutions at levels ranging from technical schools to post-graduate medical facilities.

Examples of environment-related research associated with technical cooperation projects include:

- Forestry Research Project in Brunei (forest conservation and afforestation)
- Guanabara Bay Ecosystem Study in Brazil (water pollution control)
- Tropical Rain Forest Research Project in Indonesia (forest preservation in collaboration with 3 Indonesian universities)
- Joint Study Project on Wildlife Conservation of Yacyreta in Paraguay (rescuing endangered large mammals)

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

Objectives of technical cooperation are "human development, nation-building, and heart-to-heart communications". Capacity building is now getting high priority but it does not conform to any priorities, except for general lines of emphasis set out in the country profiles prepared for internal purposes. JICA uses a country-by-country approach over a global one.

JICA's activities to develop human resources include accepting trainees from developing countries, and dispatching Japanese experts and volunteers. JICA runs 12 training centres in Japan. Trainees study at the training institutes of the Agency, government research organizations, universities, and training centres operated by private enterprise. Some third country training programmes are sponsored to provide training at institutes abroad.

In 1983, JICA established the Institute for International Cooperation (IFIC) for the purpose of strengthening the organization and functions of its technical cooperation. The Institute recruits and trains experts in technical cooperation, conducts surveys and research on technology transfer, and provides information regarding records of international cooperation.

Examples of capacity development in the area of environmental research and management include: Air Pollution Control Course (training at Japanese facilities) and Environmental Research and Training Center in Thailand (anti-pollution).

3.2 Donor collaboration

In the ODA Charter published by the Japanese Government in June 1992, collaboration with other donor agencies is emphasized as one of the important measures for effective implementation of Japan's ODA. Based on this policy, JICA is promoting such collaboration through appropriate communication and cooperation with the aid agencies of other donor countries, United Nations agencies and multilateral institutions. The Japanese Government is contributing to various multilateral organizations through the Ministry of Finance, and the Ministry of Foreign Affairs. It was, for example, the second largest donor to the UNEP in 1991, providing \$7.1 million.

On the other hand, JICA, as an executing agency, has a great deal of experience of cooperation with other donor agencies. To cite two good examples:

- 1) Cooperation with USAID in Higher Education Development Support Project in Indonesia
- 2) Cooperation with the World Bank in the Natural Conservation Project in Kenya

JICA is continuing to investigate possibilities for cooperation with other donor agencies through the exchange or secondment of personnel and information exchange.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

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Examples of capacity development in the area of environmental research and management include: Air Pollution Control Course (training at Japanese facilities) and Environmental Research and Training Center in Thailand (anti-pollution).

3.2 Donor collaboration

However, with rare exceptions, JICA has not collaborated directly with other donor agencies. The exceptions are generally large multi-donor efforts coordinated by the World Bank.

Japan is a major contributor to various multilateral organizations. It was, for example, the second largest donor to the UNEP in 1991, providing \$7.1 million.

THE FORD FOUNDATION

1. OVERVIEW

Mandate

The Ford Foundation was established in 1936, with international work beginning in the 1950s. The Foundation addresses problems and issues in the US and in developing countries related to urban poverty, rural poverty and resources, reproductive health and population, human rights and social justice, governance and public policy, and education and culture. In its international development work, the Foundation has a predisposition towards in-country projects, and has adopted a highly decentralized approach. Thus, most funding for developing country programs is spent at the country level, and field staff work directly with grantees to generate proposals that respond to local and national priorities. Projects receive approval through the relevant regional program offices, of which there are three (Africa and Middle East Programs; Asia Programs; and LAC Programs).

Funding Source(s)

The Foundation's earnings are derived from its assets; a portfolio of stocks, bonds and other investments valued at \$6.1 billion as of September 1991.

Total Budget

The program budgets for fiscal 1992 and 1993 (October 1, 1991 to September 30, 1993) total US \$644.5 million, of which \$476.1 million is budgeted for program grants, and \$30 million for program-related investments (loans etc.). About 35% of the program budget is allocated for work in developing countries. In 1992, actual program approvals totalled \$264.4 million, of which \$80.7 million was spend on developing country programs.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

There has been no specific policy or program reorientation following UNCED, although global environmental problems have been receiving increasing Foundation attention. In particular, through the Rural Poverty and Resource Division, the Foundation supports initiatives that address climate change and other key issues on an international basis. A key goal of the division, which often works in collaboration with the International Affairs Division, is to ensure that global environmental debates are open to as many constituencies as possible. The initiatives have often been headed by northern institutions; one example being the climate change advocacy work of the Environmental Defense Fund.

2.2 General Environmental Activities

Key environment/development areas of current interest are land management, water management, and global issues, with an emphasis on the linkages between environment, resource management and poverty. Related interests include poverty, agricultural productivity and rural community development.

Allocations to developing country programs are coded to one of seven Foundation divisions. The Rural Poverty and Resources Division is the main "home" of international environmental activities, and it is also the division which accounts for the largest single share of expenditures in developing countries (\$24.2 million in 1992). The focus is on improving management of resources to benefit poor families in ways that are economically and ecologically sustainable. Thus, support is given for: activities which will help rural people use their natural resources productively, while protecting the environment (e.g., community forestry projects, participatory resource management); research and analysis of public policies for the improvement of resource management and alleviation of poverty; strengthening NGOs that serve the disadvantaged; and the participation of developing countries and NGOs in international policy debates. Grants for environmental protection and natural resource management to the former Soviet Union and Eastern Europe began in 1990.

2.3 Environmental Research

Research is not a discrete mandate of the Foundation's international development work. Thus, to the extent that environmental research is supported in developing regions, it is most commonly a component of other programs and projects, and is therefore tied to specific, applied objectives (e.g., improved forestry management in a given region). However, the Foundation does support rural social science programs in universities and other institutions in Africa, Asia and Latin America, and has recently made an explicit commitment to the funding of policy research and analysis in the area of economic opportunities for rural people. Issues related to natural resource use are a component of this work. Some of the farming-systems research supported by the Foundation addresses environmental factors that impinge on, or are affected by, agricultural production. Support is currently being provided for a new Initiative in International Economics and Development, which includes policy analysis, research, training, and networking on emerging critical issues.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

Capacity development is seen to be part of the institutional culture of the organization: that is, there is a fundamental commitment to strengthen the capacity of grantees, and field staff work to build relationships with institutions in developing countries, rather than simply taking a project-by-project approach. In some regions, there is considerable concern about the status and fate of universities. Grants made to North American universities include funding for linkages with Southern-based institutions. In terms of capacity development in relation to environmental

issues, the International Affairs Division supports a variety of educational, institution-building and networking activities for the promotion of equitable and sustainable development. The Rural Poverty and Resources Program is currently sponsoring the International Institute for Environment and Development (London) to undertake a strategic review of how successful their programs have been in developing capacity.

Ford is also searching for ways to change donor/recipient dynamics that result in donor-driven activities. One highly innovative proposal relating to research is that funding be given to locally-based organizations to directly commission their own research.

3.2 Donor Collaboration

Ford considers donor collaboration to be a strength in programs and projects, and sees partnerships with other organizations as an increasingly valuable means of achieving broader scope and impact. It has a range of experience from small project involving limited donors, to larger collaborative efforts such as AERC and CGIAR. Ford is currently very active in the World Bank's initiative to coordinate donors in Bangladesh.

THE JOHN D. AND CATHERINE T. MACARTHUR FOUNDATION

1. OVERVIEW

Mandate

The John D. and Catherine T. MacArthur Foundation is a private, independent, grant-making Foundation established in 1978 for charitable and public services purposes. Grants are made through special Foundation-Wide Initiatives, and through eight Programs. International work is supported through three program areas: the Program on Peace and International Cooperation, which seeks to enhance prospects for peace and cooperation through the support of training, research and public education; the Population Program, which focuses on women's reproductive health and the relationship between population and the environment; and the World Environment and Resources Program, which supports conservation, public education, policy studies and sustainable development programs related to biodiversity conservation in tropical ecosystems. Work in the areas of environment, sustainable democracy, and human rights in the newly independent states of the former Soviet Union is supported through a three-year special initiative for that region.

Funding Source

The Foundation's earnings are derived from its assets, a portfolio of stocks, bonds, real estate and other assets valued at \$2.95 billion as of December 31, 1992.

Total Budget

In 1992 the program budgets totalled \$168 million, of which \$141 million was authorized for program grants and \$3.4 million for program-related investments. The World Environment and Resources Program made approximately \$16 million in grants in 1992. Most of the budgets for both the World Environment and Resources and Population Programs support work in developing countries.

2. Environment Mandate/Activities

2.1 UNCED-specific Activities

In 1991, the Foundation's Board of Directors authorized a special initiative for preparations for the UNCED conference. Seventeen organizations received support through this \$1.5 million initiative. The grants supported a variety of activities including extensive planning, policy research, facilitating the attendance of NGOs from developing countries, and educational program to increase public awareness of the conference in the United States.

2.2 General Environmental Activities

The World Environment and Resources Program (WER) expresses the Foundation's ongoing concern about the rapid degradation of the world's natural resources. The Program seeks to increase understanding of the delicate relationship between the health of the biosphere and the welfare of human communities. Within this context, it focuses primarily on efforts to stem the destruction of tropical ecosystems and the consequent loss of species.

In 1988, the WER Program initiated a strategy to fund projects serving a limited number of geographic areas where both species diversity and the danger of extinction are extremely high. Activities supported by the program include: Conservation science and policy studies; conservation action and education; and conservation and sustainable economic development programs. The WER Program makes grants in concentrated packages, each comprised of several grants that address the same program theme or geographic area, from a variety of angles.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

The World Environment and Resources Program is fundamentally interested in fostering local and regional scientific and technical capability; supporting local leadership; and building organizational capacity in tropical countries. Since the Foundation supports multifaceted programs, rather than projects, elements of institutional capacity development are frequently part of scientific research, conservation action, and public environmental education grants. In an effort to improve the scientific capacity in developing tropical countries, the WER Program supports training for professionals at various levels and through a variety of structures.

3.2 Donor Collaboration

The World Environment and Resources Program considers donor collaboration as a high priority for current and future grantmaking. Successful collaborations with the Inter-American Foundation, the Ford Foundation, the Heinz Charitable Trust, and the Boticario Foundation (a Brazilian corporate philanthropy) have led the program to seek such collaborative funding arrangements in all of its geographic focus areas. A recent agreement with the Global Environmental Facility to co-fund the establishment of a tri-national trust fund in the Carpathian mountains of Ukraine, Poland, and the Slovak republic is another example of this activity.

THE ROCKEFELLER FOUNDATION

1. OVERVIEW

Mandate

The Rockefeller Foundation was chartered in 1913. Its mandate is "to promote the well-being of mankind throughout the world". The principal program areas supported by the Foundation are International Science-Based Development, Arts and Humanities, and Equal Opportunity.

Funding Source(s)

The Foundation was endowed by John Rockefeller, and funds derive from investments.

Total Budget

Grants, appropriations, program-related investments, and fellowships in 1992 totalled US \$103.2 million. Of this, the International Science-Based Development (ISBD) Program totalled \$55.3 million. A significant proportion of ISBD's budget goes to the work of labs and organizations in the industrialized world. Since the early 1980s, however, many more grants are being made directly to institutions in the developing world.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

The Foundation focuses efforts on a limited number of well-defined, relatively long-term initiatives. Thus, it has not undertaken specific policy shifts or restructuring in response to UNCED. However, the impetus for the Leadership for Environment and Development Program (LEAD) program (see below) can be related to the recognition, pre-Rio, of the need to build capacity for the participation of developing countries in international fora. With respect to the UNCED conventions, the Foundation is not directly involved in climate change work per se, although the International Energy Efficiency (IEE) initiative (see below) may contribute to greenhouse gas reduction. The Foundation's biotechnology work is of limited relevance to the conservation of biodiversity, although wide hybridization work has included surveying and collecting of wild relatives of rice and cassava. Also, the Foundation supports the Biotechnology Advisory Commission of the Stockholm Environment Institute, which will take into consideration the impact of biotechnology on biodiversity; and Foundation-sponsored research on intellectual property rights has addressed issues related to the use and protection of genetic resources. Similarly, though the Foundation does not support work directed specifically to desertification, land degradation is an issue that has been addressed through various projects of the Agricultural Science Division.

2.2 General Environmental Activities

The mission of the ISBD Program is to help the developing world acquire and apply science and technology, in environmentally sound ways, to increase people's access to essential goods and services. There are four divisions under the Program: Global Environment, which has just recently been established as a division; Agricultural Science; Health Science; and Population Science. There is also a special area of activity entitled African Initiatives. Global Environment, with approved allocations of \$6.4 million in 1992, and Agricultural Science, with 1992 allocations of \$18.0 million, are the key divisions in terms of environment-related activities.

The work of the Global Environment Division is currently divided into two main portfolios: the LEAD program, and work related to the development and promotion of environmentally sound and efficient energy technologies. The LEAD program, which had a 1992 appropriation of \$3.3 million and has a current-year budget of \$4.5 million, currently operates in half a dozen countries. Through a two year training and networking program, and an electronic information network, it supports selected professionals in a range of disciplines and sectors to develop the capabilities to integrate and promote sustainable development approaches in their work, and more broadly. It is hoped that LEAD fellows will stimulate the institutional and socio-cultural contexts and strategies for sustainable development in their countries, and will help strengthen developing country participation in international fora. The intention is that the National Steering Committees, through which the program operates in each country, will begin to find other sources of funding.

The Foundation has been funding energy efficiency and alternative energy projects since the Global Environment Division was established in 1990, and has recently gathered much of this work under the umbrella of the IEE initiative, with current funding in the order of \$1.8 million. The goal is to demonstrate the potential of environmental alternatives, and in particular, to support the early stage work necessary to bring promising projects to the stage where they can attract private sector and/or other donor support. The Foundation is also considering establishing a stand-alone enterprise that would, via the services (e.g., investment analysis, financing strategies) of a network of project development professionals, assist in arranging developing country energy projects.

The mission of the Agricultural Science Division (ASD) is to help developing countries use modern agricultural science and technology on their own terms, in ways that are environmentally sound, to provide adequate livelihoods, and food, fibre and fuel. There are currently three key program foci. The first is the natural resource management program (with current funding of about \$3.3 million), which aims at increasing understanding and knowledge of sustainable approaches to resource management. The emerging strategy with respect to natural resource management is to: take advantage of promising field experiences of rural people in managing their resources; support research and actions to improve the sustainability of these approaches; and strengthen direct links between farmers, community organizations and scientists. There is a focus on marginal farming lands in Mexico. In 1992, a major appropriation was also made for research on the environmental and health impacts of pesticide use in developing countries.

The second major program focus is African agricultural technologies for small-scale (family) food production systems, with a concentration in Kenya, Uganda, Malawi and Zimbabwe (about \$5 million). Through this, the ASD supports a variety of projects with important environmental dimensions (e.g., research on sustainable use of soils and water). The third focus is on rice biotechnology, primarily in Asia, and similar work on other key food crops (about \$9.7 million). Success in this work will help reduce the need for chemical insecticides in rice production.

Numerous other initiatives, including some under the Health Science and Population Science Divisions, have environmental components. One key example is a major investigation in the Brazilian Amazon of the relationships between human health and demographic and other changes in tropical forest habitats. Support is being given to the development of carrying capacity measures for the Amazon Basin, and for training in tropical forest ecology.

2.3 Environmental Research

The Foundation's main environmental division, the Global Environment Program, does little if any direct funding of research. Much of the work supported through the Agricultural Science Division has a research orientation or a significant research component, and as noted, some of this research is environmental (sustainable development). Research on socio-economic factors affecting resource use is also supported.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

The Foundation's commitment to institutional capacity development and training (whether for research, analysis, implementation, and/or program management) is broadly reflected throughout its programs. The LEAD program is specifically a capacity-development initiative. Other Global Environment grants are used to strengthen existing institutions and support networks, workshops and other forms of information dissemination. Support is given to labs in both the industrialized and the developing world, and to formal environmental education initiatives (e.g., for curriculum development). Fellowships are given for graduate studies, and grants for dissertation research. Efforts are made to link developing country specialists with colleagues in international or industrialized-country institutions. The ASD estimates that about one-third of its total expenditures are devoted to human capital development within the three substantive areas identified above. Capacity-development is built into projects. For example, in supporting the research and development necessary to introduce genetically engineered rice strains in Asia, the Division strives to build the capacity of Asian scientists to independently continue this biotechnology development work for subsequent generations of rice. The Foundation is also currently sponsoring a pilot initiative to encourage Chinese scientists and engineers who have remained in North America following their studies and training to offer some teaching and research time to Chinese universities.

3.2 Donor Collaboration

The Foundation has broad experience with various forms of collaboration, although co-funding (i.e. contributions to a common fund) has not been a common approach. There is some tendency to favour "concertation" over more extensive forms of collaboration, although the Foundation is a founding and ongoing sponsor of the AERC. One example of a favourably-viewed collaborative effort is a current project in which Rockefeller and IDRC coordinate support for research on the decline in production of banana and plantain in Uganda. The two organizations have a joint definition of purpose, but each funds the work of a separate research institute. Thus, project management and finances are handled by each organization independently. Rockefeller also provides core funding to two CGIAR centres.

**UNITED STATES: AGENCY FOR INTERNATIONAL DEVELOPMENT
(USAID)**

1. OVERVIEW

Mandate and Organization

USAID was founded in 1961 to administer the U.S. bilateral foreign economic assistance program. The overall goal is sustainable development, with a focus on four key areas: population; the environment; democracy; and broad-based economic growth. USAID also provides financing to a number of other organizations, such as the WHO, the World Bank's GEF, and certain CGIAR centres.

To date, USAID's structure has been very decentralized: a large overseas field presence (country and regional levels) has largely determined how funds are allocated, based on local needs, and has administered the majority of the Agency's projects. In addition, in terms of environmental issues, the central Research and Development Bureau (RDB) houses several offices that are key: the Office of Environment and Natural Resources; the Office of Energy; the Office of Agriculture; and the Office of Research.

It should be noted that an imminent task force report on reorganization of the Agency is expected to recommend significant changes, including a major downsizing of overseas staff, and greater central responsibility for technical and field support, and for the allocation of funds. Greater concentration in development assistance goals is also likely.

Funding Source(s) and Total Budget³

AID-administered activities comprise in the order of 40 per cent of the U.S. international affairs budget for discretionary programs. Current USAID spending on economic assistance is in the order of \$7 billion per year. This includes not only funds for development assistance programs (close to \$2.8 billion in 1991), but also the project assistance portion of the Economic Support Fund (just over \$4 billion in 1991). Additionally, there is a food programs budget in the order of \$1 million.

2. ENVIRONMENTAL MANDATE/ACTIVITIES

2.1 UNCED-Specific Activities

While USAID has not produced policies or programs as a specific response to UNCED, recent years have seen greatly increased priority accorded to climate change and biodiversity. Indeed,

³ Note that economic assistance is allocated via Congressional approval both regionally (based on strategic and geopolitical considerations) and functionally (into various program areas).

climate change has become a major Agency focus, with programming directed to activities to reduce greenhouse gas emissions (primarily via energy conservation) and avoid loss of sinks (in particular, via conservation of tropical forests). The focus is on technical assistance and technology transfer. In addition to a wide range of region-specific initiatives, USAID is carrying out a Global Energy Efficiency Initiative targeted at improving energy efficiency in key countries that have the potential to be major contributors to global climate change.

With respect to biodiversity, projects are directed to both intra-species genetic diversity (reflecting an agricultural thrust) and inter-species diversity and ecosystem level management. A key project is The Cooperative Agreement for the Conservation of Biological Diversity, jointly implemented by the World Wildlife Fund, the Nature Conservancy, and the World Resources Institute. It supports developing countries in inventorying, protecting and sustainably managing critical natural habitat. The Agency also supports ex-situ preservation, and has a Working Group on Biodiversity and Sustainable Agriculture.

Additional information on research relevant to the conventions is summarized in section 2.3.

2.2 General Environmental Activities

USAID's funding commitments for environmental activities have grown considerably in recent years: \$392 million was committed to project and activities within the environmental program in 1990; in 1991, \$485 million was committed; and [for this fiscal year], Congress has appropriated \$670 million for environment-related activities. The majority of spending on environmental projects takes place through the regional bureaus (with Europe, including the Newly Independent States, and the Near East accounting for the highest single percentage), although the Central Bureau also directly funds numerous projects.

USAID's Environmental Strategy Framework focuses on three development approaches that are viewed as key in addressing environment/development problems and opportunities: human and institutional capacity strengthening; reform of unsustainable economic and environmental policies and procedures; and encouragement of private sector participation in promoting environmentally sound development. USAID supports national development plans which in turn play a key role in its environmental strategy. There is also a commitment to local empowerment.

Depending on the region, one or more of the following USAID priority areas may be relevant: (1) protection of tropical forests and other critical habitats for biodiversity; (2) sustainable agricultural practices; (3) environmentally sound and efficient energy production and use; (4) reducing urban and industrial pollution; (5) management of water and coastal resources; and (6) environmental policy and integrated planning and management.

2.3 Environmental Research

At present, about half the research sponsored by USAID is commissioned by the central RDB, and the other half by the field missions. Environmental research, especially that supported by the missions, is generally operations research, oriented to local and regional issues. Centrally

funded research is more likely to fit the traditional concept of scientific, hypothesis-testing research. In particular, the Office of Research, in addition to providing policy and planning advice, is oriented to fundamental (basic and applied) research.

Funding of research is in the order of \$375 million per year, including research projects per se, and projects with a research component. However, only a small portion of the environment budget is currently spent on research. In the area of climate change, for example, a recent initiative supports developing country research on the extent and impact of climate change, and helps developing countries participate in some of the required global research. There is also a small research programme in renewables. In the area of biodiversity, there are several channels through which conservation research is currently supported. The Office of Research, for example, funds strategic-level research (e.g., oriented to understanding and influencing land use patterns that impact on biodiversity). The Office of Environment and Natural Resources has a biodiversity support program, under which fall two collaborative projects. One, a project with the National Science Foundation (NSF), involves a peer-review research granting process. The other is a trilateral collaboration (USAID, NSF and the National Institute of Health) which aims to support research projects to identify potential natural resources for pharmaceuticals.

The Office of Agriculture sponsors a Sustainable Agriculture Cooperative Research Support Project (CRSP), which provides block grants to consortia of U.S. and developing country research institutes for innovative, integrated systems research into the physical, biological, environmental and socio-economic characteristics of sustainable agriculture in major agro-ecosystems. (The National Academy of Science is involved in managing this process.) This office also provides about \$37 million per year to selected CGIAR centres, some of which goes towards environmentally-related projects, such as the International Rice Research Institute's work on impacts of CO₂ on crop growth.

3. CAPACITY DEVELOPMENT AND DONOR COLLABORATION

3.1 Capacity Development

Many of USAID's projects include one or more capacity-development components, from technical assistance to training to institution building and funding for infrastructure (equipment, etc.). Institution-building in particular has been a centrepiece of USAID's work, and funding from the central office is usually contingent on some component of institution-building or strengthening. For example, the goal of the Environment and Natural Resources Policy and Training Program is to strengthen the capability of U.S. and developing country institutions to analyze relationships between economic policy and environmental problems, and to design environmentally appropriate policies. The Agricultural Policy Analysis project is directed towards identifying the range of government policies affecting natural resource use. An environmental planning and management project supports the World Resources Institute to work with developing countries to produce resource assessment and plans, undertake training workshops, etc.. (Agency staff also receive training in environmental and energy issues.)

At one time, the focus was on developing the capacity of U.S. institutions to work internationally, but the emphasis is now on institution-building in recipient countries. There is strong encouragement of research partnerships: research proposals involving only U.S. or only developing country researchers or institutes are unlikely to be supported. An attempt is made to create opportunities for close association with outstanding, creative researchers, as it is believed that this is necessary in order to develop a capacity for innovative research.

USAID also supports projects that strengthen the capacity of recipients to engage in policy development, and policy dialogue with donors. Policy dialogue with recipients is a fundamental aspect of the Agency's approach.

3.2 Donor Collaboration

USAID has extensive experience in collaboration with other donors, and seeks to expand collaboration on a number of environmental fronts. The collaborative biodiversity research projects mentioned above (section 2.3) are an indication of one possible direction the USAID collaboration with other donors or actors will take. At present, USAID maintains three development assistance coordination offices -- in the Asia Bureau, the Policy Directorate, and the Food and Humanitarian Assistance Bureau -- to serve as a liaison between USAID and other donors, countries and international organizations. USAID's overseas field offices have also played a significant role in building relationships with other donors. In addition, USAID works with the Environmental Working Party of the OECD's DAC to coordinate environmentally-related development assistance amongst OECD bilaterals. The Agency also works closely with other federal and international agencies, and with NGOs and private sector entities. A special USAID committee provides guidance on foreign assistance cooperation with NGOs. Models for cooperative research come mainly from the medical and agricultural research communities.

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