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Folder ID:	30488663
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Dates:	10/06/1997 – 10/11/1997
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President Wolfensohn - Briefings Books for Presidents Meetings - Meeting Materia
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Partnerships for Global Ecosystems Management: Science, Economics & Law

October 6 - 7, 1997

Name: . . . . . .

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Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development

Partnerships for Global Ecosystems Management: Science, Economics & Law

October 6 - 7, 1997

Name: . . . . . .

Organization: . . . . . .

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Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development

ESSD5 REGISTRATION FORM[1]

Please use all uppercase letters placed completely within the provided boxes.

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- ☐ Science
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B. Area of Specialization

- ☐ Biodiversity
- ☐ Climate change
- ☐ Desertification
- ☐ International waters
- ☐ Marine
- ☐ River basins/lakes
- ☐ Species
- ☐ Stratospheric ozone
- ☐ Terrestrial forests
- ☐ Tropical forests
- ☐ Other (specify)

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C. Area of Interest

- ☐ Biodiversity
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- ☐ Desertification
- ☐ International waters
- ☐ Marine
- ☐ River basins/lakes
- ☐ Species
- ☐ Stratospheric ozone
- ☐ Terrestrial forests
- ☐ Tropical forests
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E. Operating Scale

- ☐ International
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- ☐ Other (specify)

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(1) This form has been prepared for electronic data input. We deeply appreciate your assistance.

(2) Please select only one box from each column except for column "C. Area of Interest." For column C., please select all boxes that apply.

B. SUBJECT: 1. PRE-BRIEF: ESD CONFERENCE (EVENT DATE ON: OCTOBER 6) (B) (N) // TIME: 5:30 - 6:00 P.M., SEP. 24 // VENUE: HKCEC-ROOM 5A08 // CONTACT: DORY @ 34502 // IN ATTENDANCE: JDW, KOCH-WESER, SERAGELDIN, MARISELA, CAROLINE, HANY // (B) BY SERAGELDIN // DUE TUES., SEPT. 20 IN HK // RESCHEDULED FROM THURS. SEPT. 25 // EXC: HA // LFG (9/12)

2. SPEAKING ENGAGEMENT: FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT (B) (N) // JDW TO MAKE SPEECH // TIME: 9:20 - 11:00 A.M., OCT. 6 // VENUE: LISNER AUDITORIUM, GEORGE WASHINGON UNIVERSITY, 730, 21ST. STREET, N.W. // CONTACT: JOANIE MARTIN BROWN @ 32310 // WATSON (ISABEL) @ 36965 // NOTE: JDW TO ARRIVE AT 9:20 A.M. DURING THE "BLACKOUT" SHOWING OF THE TRIBUTE TO JACQUES COUSTEAU AND WILL BE INTRODUCED BY SERAGELDIN AT THE END OF THIS 10-MINUTE VIDEO TRIBUTE. JDW IS SCHEDULED TO SPEAK AT 9:35 A.M. // (B) BY SERAGELDIN // DUE SATURDAY, SEPT. 20 // SPEAKING POINTS BY CAROLINE // EXC: CA (AH) // ALI (8/5) // LFG (9/24)

3. LUNCHEON: FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT (B) // JDW TO HOST // VENUE: MC DINING ROOM 'K' (MC C1 LEVEL) // CONTACT: JOANIE MARTIN BROWN @ 32310 / BARBARA ECKBERG // HOST: MR. WOLFENSOHN // TO ACCOMPANY: MARISELA // NAMES OF INVITEES: DR. PETER DOHERTY, DR. MOHAMED EL-ASHRY, MR. HENRY J. HATCH, MS. YOLANDA KAKABADSE, MR. JEMAL-UD-DIN KASSUM, MR. CAIO KOCH WESER, DR. GEORGE A. OLAH, DR. ALASSANE OUATTARA, MR. SVEN SANDSTROM, MR. MADHAVA SARMA, DR. ISMAIL SERAGELDIN, DR. JOSEPH STIGLITZ, DR. ROBERT WATSON, MS. CAROLINE MCASKIE, H.E. CHRISTOPHER WEERAMANTRY, MR. GILBERT GROSVENOR, DR. VINOD THOMAS, MR. TARIQ HUSAIN, MS. KASS GREEN, MR. IBRAHIM SHIHATA, MR. JAMES MICHEL, DR. MOSTAFA TOLBA, THE HON. DR. ENRIQUE BORGO BUSTAMANTE, THE HON. MIGUEL ARAUJO, H.E. RENE A. LEON // NOTES: 6/19 - HA SUGGESTED THE TIME BE PUT ON HOLD -- ORIGINALLY HELD 12:00-1:30 P.M. // 8/5 CAROLINE ADVISED THAT LUNCHEON HAD BEEN CONFIRMED FOR 1:00 P.M. - SCHEDULING WAS NEVER INFORMED // TIME CHANGED TO 12:30 P.M. IN ORDER TO ALLOW JDW TO PARTICIPATE // TIME AGAIN RECONFIRMED BY JOANIE 9/2 // (B) BY SERAGELDIN // DUE SATURDAY, SEPT. 20 // EXC: CA // ALI (8/5) // LFG (10/03)
Brief Includes:
--- Cover Note from Ismail Serageldin
--- JDW Timetable
--- Conference Program
--- Presentation to Mrs. Francine Cousteau
--- Speech
--- Luncheon Remarks
--- Luncheon Guest List
--- Talking Points for Opening Address to ESSD
--- Partnerhips for Global Ecosystem Management: Science, Economics and Law (Folder given to all participants)

DATE: 10/06/97

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FIFTH ANNUAL

WORLD BANK CONFERENCE

ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

EXCERPT

REMARKS OF

JAMES D. WOLFENSOHN, PRESIDENT, WORLD BANK

Monday, October 6, 1997

The George Washington University
Lisner Auditorium

Washington, D.C.

MILLER REPORTING CO., INC.
507 C STREET, N.E.
WASHINGTON, D.C. 20002

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P R O C E E D I N G S

MR. WOLFENSOHN: Thank you very much, Ismail.

President Trachtenberg, Madame Cousteau and friends: There could be no more moving commencement to our deliberations this week than the very short tribute that we have made to Captain Cousteau, nor could there be a better framing of the issues that face us than the statements that came from his own mouth, the image of the Earth as seen from another planet, the need for us to face up to the challenges of the future, the inevitable challenges of the future, the increase in population of five times during his lifetime and the doubling again in the next 35 years.

That's why we're here. We're here because we're concerned and because we know that, unless we do something, our children will suffer. And it's why the Bank, under the leadership of Ismail and his colleagues, is really redefining the role of our institution to ensure that environmental and social development is not just another department of our institution, but, in fact, that these issues are central to everything that we do.

I tried very hard in a speech I gave in Hong Kong just a week ago to formulate these issues, to indicate that our concern is a concern that relates not to those of us who are privileged, those of us who have advantages from both

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the developed and developing world alike, but that we're concerned deeply with the issues of those that are not here, those that are disadvantaged, those that live in poverty, those that do not have our benefits, of the 4.7 billion people that live in the countries that the Bank deals with, of the 3 billion of those people that live with an income of under $2 a day, with the 1.3 billion people that live under $1 a day, with the 1.5 billion that don't have access to water or sewerage, clean water or sewerage, to those who don't have access to electric power, more than 2 billion, to the 8 million who die needlessly every year, to the 150 million children that don't get a chance to go to school.

You here know these statistics. That's why you're here. So I won't regale you with them. I merely want you to know that the orientation of the Bank is geared centrally to that issue. I framed it as the issue of inclusion, the problem of bringing with us those disadvantaged that are living now and those that are not here and who will leave in the next 30 to 40 years, 90 to 100 million of them being added each year.

So the challenge is enormous. As Captain Cousteau said, this is an inevitability. It's an inevitability, but it's one that we can affect, and that indeed is our task. Our task is to deal not just with social issues and not just

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with environmental issues, but with social and environmental issues. And if there is to be continuity, if there is to be sustainability, then we have to bring together social, environmental, and economic issues.

You can't just pick one thing and say that's my interest, because, as I've learned in the last several years, all these issues link together. And as Captain Cousteau correctly directed us, you can't think of these things unless you think of measurement, unless you think of education, unless you think of scientific research, unless you think of social consequences, unless you think of poverty. They all come in together.

And so that is why what we're trying to do at the Bank is to make a step to put in the central position social and environmental issues. And I'm sure that many of you will have seen that we mean this sense of new direction.

But we also have a sense of ourselves. We have a recognition that we're not lords of the universe. We have a recognition that the World Bank is but a small part of our cosmos. Yes, we have some influence. But in terms of having an effect, we can't have the overall effect. We have to do that together. And that's why we support so vigorously these conferences, of which this is the fifth, a conference that brings together the players, the players

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from the private sector, from the social sector, from our colleagues in governmental agencies, bilateral and multilateral, from science, from technology, from educators, all of you, in fact, who are here today to contribute to the discussion.

We offer you partnership, because we know that only with partnership can we be effective. Only with the sort of relationships that we can weld together to face a series of issues can we be effective in terms of establishing a better world for those who come after us. And that is why we at the Bank are deeply committed, deeply committed to partnership, trying to put behind us the pocket descriptions that are given of each other, the captions of the Bank as an aggressive, unyielding agency that never listens, always tries to impose its will.

Well, if we were like that, I can tell you we're not like that now. We have a sense that the problem's very tough, that we're not playing games, that we're not just trying to get a series of individual projects that we can mark as successful. We're trying because we think it's late to face up to the issue of the whole systemic approach to the question of sustainability. And we know we can't do that alone.

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And we don't want to come away with a sense that we got a project here right and a project there right and a project there right. We're trying to approach this now on a basis that the only way that we're going to make a difference is if we can approach things on systematic global solutions where we can work together.

The implementation, of course, is local and there we need to work together with you and we need to do our own work. But the concept has to be one that is broader than we've had before.

You will be getting this week, I think at this conference, a report which we've done on rural development, which is a good example of how we're looking at this. We used to take agricultural development where 70 percent of the world's poor live and where there is an immense amount of degradation in terms of soil, 70 percent of the water is consumed in agriculture, all relevant issues in terms of the environment, as you well know. And we've said we can't just take this as an agricultural issue. We have to take it as an issue that relates to rural development generally. We can't just look at new crops and the works we're doing with CGIAR and other research agencies. We can't just look at our rural extension programs. We can't just look at the

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soil conservation programs. We can't just look at the water programs that we're actively involved in.

We've got to try and bring this together because, unless you bring it together, if you get one piece right, it doesn't guarantee that you're going to get the totality right.

Take crops. The easy part is to grow crops that are twice the size and twice the yield. I say it's easy because of science. But if you can't sell it, if you can't finance it, if you produce the wrong crops, if you can't deliver it to your clients, if you don't have wholesalers, if you don't have planning, if you don't have roads, if you don't have education, if you don't have support for women, the system doesn't work.

And so what we're trying to do is not take just the pieces in all of which we're operating, but to try and approach our work now in a systemic format, understanding that unless you get the pieces together, you can get kicks from having an individual part of it go right, but the totality doesn't work. And I use that just as one example. It applies in many of the things that we're doing. It applies to work in the private sector. You can bring in private sector investment. We all know that in this current year private sector investment in the developing world is

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$240 billion, five times the size of official development assistance. Seven years ago, it was half the size.

And so we're pushing for private sector investment, and, yes, it's important in terms of generating jobs and generating economic well-being. But unless you think of it also in terms of social development and environmental development, the very actions that you're taking to bring in private sector can sow the seeds of disaster 10, 20, 30 years down the line.

So you can't look at private sector investment just as bringing money. It has to be socially responble private sector investment. It has to be environmentally sound private sector investment.

Each of the elements in terms of what we're doing is linked with the other, and the importance of our conference this week which traverses such a broad range of subjects is that we must start to think in terms of how we can develop global systemic approaches to the issues of social and environmental development.

We can no longer just pick at one project after another. We have to lift our perceptions to a broader vision. And we need to think not in terms of just the immediate objective, but in terms of the long-term objective of what is happening 10, 20, 30, 40 years from now. If we

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don't do that, we have no chance of meeting the challenge of Captain Cousteau. We have to lift our sights. We have to forge partnerships.

And I want to tell you today that, so far as the Bank is concerned, we approach it first with a sense of enthusiasm to weld those partnerships; secondly, with a very strong desire to get away from past prototypes of each other; and, thirdly, with a sense of humility about the nature of this challenge. We regard the issues that are being discussed in these five days as central to our work, because without social and environmentally development we don't have anything. We may have a few short-term victories, but in a planetary sense, we will fail.

And so I am thrilled and delighted to be here to have the opportunity to open this meeting within the image of Captain Cousteau. I don't want to give you a lot of the details, but I think you might find interesting just one more of our publications which is just coming out, which is Environment Matters. It is a regular review that we give of what's going on at the Bank, and I would refer you to it because it contains within it a description of our activities. And it addresses the issues of climate change, the biodiversity and sustainability forestry, desertification and land degradation, water and ozone

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depletion--all issues which I addressed at the U.N. General Assembly session in June of this year.

We also set forth our environmental strategy to proactively support the objectives of the Environmental Convention, to integrate global environmental issues into our economic and sector work, to prepare greener national accounts for countries, again, something that Captain Cousteau was concerned about, development of new market-driven products, the global carbon initiative. And may I say that our number is depleted a little bit today because at this exact moment President Clinton has taken what was to have been an internal discussion public at Georgetown University where I'll be speaking this afternoon, where we're looking at the very important issue of America's role in Kyoto and the issue of carbon emissions.

We're looking at the questions of training, of Economic Development Institute, our EDI, and what we're doing there to establish learning and leadership activities, to create the Bank as a knowledge bank, as a source of information on environmental and social issues, on our work with the private sector, and on joining with others to promote standards of environmental and social performance for both public and private sector.

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And you'll see in this book a description of what we're doing in each of the regions, over $11 billion worth of projects, 166 of them, not only in the Bank but in IFC, and then learning more at the back of the book on what we're doing on such issues as building capacity, revitalizing rural development, new directions in social development, ozone and Montreal Protocol, mainstreaming climate change, strengthening environmental valuation, the partnerships that we've established since Rio, notably in the forestry and in the other areas, in the water areas, water resource management, towards effective pollution control, protecting the world's biodiversity.

I tell you this not to impress you with the book, but simply to say that this task is enormous. It's enormous. And every one of these individual activities represents a world of activity in itself.

I want to open this conference by saying that I believe that the Bank can be a good partner to you. We're anxious to work with you. We're committed to the issues that you're addressing here this week, and I have very great pleasure in declaring this conference open and in welcoming your participation and in pledging the enthusiastic support of the Bank.

[Applause.]

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FIFTH ANNUAL
WORLD BANK CONFERENCE
ON ENVIRONMENTALLY
AND SOCIALLY SUSTAINABLE
DEVELOPMENT

INTERNATIONAL AGREEMENTS

CLIMATE CHANGE

OZONE DEPLETION

BIOLOGICAL DIVERSITY

FORESTS

DESERTIFICATION/DRYLANDS

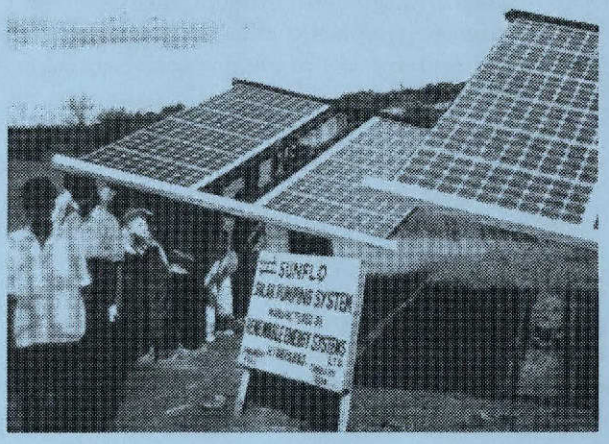
ENDANGERED SPECIES

WETLANDS

INTERNATIONAL WATERCOURSES

SEAS AND OCEANS

HAZARDOUS WASTES



Climate Change

Since the 1970s, when scientists began to express concern that greenhouse gases produced by human activity would cause climate change, knowledge of this subject has grown significantly. Scientists still disagree about the extent of change, and all predictions are contingent on assumptions about future events, but a broad consensus has been established that the Earth will be affected by climate change in the coming decades and beyond. Moreover, it is recognized that without remedial measures, the economic and social consequences of these changes could be severe.

Among the projected consequences of climate change are increases in certain diseases, notably malaria, in areas that become warmer and more humid, a rise in sea levels that could displace millions of people, and large shifts in ecosystems. A near-term dieback in forests is possible as climate boundaries move towards the poles (a shift estimated to be between 150 and 650 kilometers), while rising sea temperatures could damage or kill many coral reefs. From an economic perspective, the costs associated with climate change have been estimated between 1.5 and 2 percent in developed countries, and as high as 9 percent in developing nations.

The principal greenhouse gases that trap heat and therefore affect global temperature are carbon dioxide, methane, chlorofluorocarbons (CFCs), nitrous oxide, ozone, and water vapor. With the exception of CFCs, all of these gases occur naturally in the atmosphere. For this reason, "anthropogenic" is used to identify emissions that disturb the atmosphere's natural equilibrium.

By producing carbon dioxide as well as nitrous oxide, fossil fuel combustion is the most important factor in the increase in greenhouse gases. Deforestation adds to the level of greenhouse gases, because forests serve as an important "sink" for carbon, transforming it from gaseous carbon dioxide into biomass. Cattle also create greenhouse gases by expelling methane as a result of digestion. Rice paddies are another source of methane as are coal mines and leakages from natural gas lines. The release of CFCs adds another greenhouse gas to the atmosphere, but the overall impact on global warming is attenuated by the fact that CFCs destroy ozone, which itself is a greenhouse gas.

International Legal Regime

The international effort to respond to climate change is governed by the United Nations Framework Convention on Climate Change (FCCC), which was opened for signature at the Rio Earth Summit in June 1992 and entered into force in March 1994. There are 166 Signatories and 167 Parties to the Convention.

In comparison with other international agreements on the environment, the Climate Convention has certain distinctive characteristics. While many of these agreements have been negotiated in response to obvious evidence of environmental damage, such as species extinction, the Climate Convention was negotiated largely in response to anticipated environmental damage, based on extrapolations from observed changes and predictions about future emission patterns. The willingness of so many countries to acknowledge the need for international action indicates a heightened sensitivity to the environment. At the same time, however, the Convention has fewer binding commitments than some other agreements, and thus remains a work-in-progress.

Differences among Countries

While stating that "change in the Earth's climate and its adverse effects are a common concern of human-kind," the opening text of the Climate Convention also acknowledges that countries have different interests in the effort to mitigate climate change. In this regard, the Convention states that countries should participate in "an effective and appropriate international response in accordance with their common but differentiated and respective capabilities and their social and economic conditions."

The opening text of the Convention also acknowledges that the impact of climate change will not affect all countries equally. It states that "low-lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification, and developing countries with fragile mountainous ecosystems are particularly vulnerable to the adverse effects of climate change." It also refers to "the special difficulties of those countries, especially developing countries, whose economies are particularly dependent on fossil fuel production, use and exportation, as a consequence of action taken on limiting greenhouse gas emissions."

Lastly, the opening text contains several formulations to ensure that developing countries will not be prevented from increasing their use of energy resources. It affirms, for example, the "principle of sovereignty of States in international cooperation to address climate change." Explicitly, it states that "the share of global emissions originating in developing countries will grow to meet their social and development needs" and that "for developing countries to progress towards [the goal of sustainable development] their energy consumption will need to grow."

Commitments and Goals

In the context of differentiated responsibilities, the Convention distinguishes among developing countries, former Eastern Bloc countries, and members of the Organisation for Economic Co-operation and Development (OECD). It calls on those in the latter two groups, designated as Annex I countries, to take "the lead in modifying longer-term trends in anthropogenic emissions." Specifically, these more developed countries committed themselves to the "aim" of holding anthropogenic emissions in the year 2000 (other than CFCs controlled by the Montreal Protocol) at the same levels as in 1990. At this juncture, the evidence is that these goals will not be met, except in unusual circumstances, as in former Eastern bloc countries, where reductions in emissions are more closely tied to economic difficulties than to technological change.

To assist developing countries in their effort to catalog and control greenhouse gas emissions, the Convention also commits the OECD countries, designated as Annex II countries, to "provide new and additional resources" and calls for technology transfer and "enhancement of endogenous capacities." The Global Environment Facility (GEF) serves as the financing mechanism for the Convention.

Science

Having made the case that climate change requires concerted international action, science must now refine its models to better predict both the timing and magnitude of global warming as well as determine more precisely how particular regions will be affected. Little is known at this stage, for example, about where floods and storms are most likely to occur. For nations concerned about investments in irrigation projects or dams, this kind of information is more important than generalized predictions about temperature changes.

Further progress must also be made in the area of renewable energy, which holds significant promise of directing energy use and production onto more sustainable pathways, especially in developing countries. The Convention establishes a Subsidiary Body for Scientific and Technological Advice to "identify innovative, efficient, and state-of-the-art technologies and know-how and advise on the ways and means of promoting development and/or transferring such technologies." Solar cells, wind power, and biomass are all promising sources of energy in regions in which access to electric grids is not economically feasible. Along with renewable energy, developing countries will also need access to higher efficiency conventional technologies, in particular those that shift energy use and production to fuels that burn more cleanly.

Economics

The most promising means of achieving the goals of the Convention involve the use of economic tools, including macroeconomic policy changes. Significant progress has been made in recent years in the reduction in subsidies of fossil fuels. In many developing and former socialist countries, these subsidies were substantial; reducing them, therefore, is a classic win-win situation for the economy and for the environment. Such reductions stimulate energy efficiency, and they also create a level playing field for newer, climate friendly technologies. Macro-economic policies that encourage the evolution to higher value-added industries, whether in the developed or developing world, are another means of reducing greenhouse gas emissions.

Other economic tools that can help achieve the goals of the Convention are studies that measure the costs of inaction versus the costs of action. In this way, comparisons can be established that create the necessary impetus to redesign incentive systems. Environmental taxes also can help reduce greenhouse gas emissions. Some countries have experimented with carbon taxes, but until now, various impediments have limited their broader application. These include general opposition to taxes, a tendency for such taxes to be regressive, and concern that national industries would suffer.

The process of Joint Implementation (JI) is an additional means of encouraging more efficient energy use and consumption. Under JI, which was approved on a pilot basis at the Berlin Conference of the Parties (COP) in 1995, reductions in carbon emissions are calculated for specific projects. Ultimately, when Parties commit to binding emission targets as they have pledged to do, these reductions could be used as credits to offset against the agreed targets. A system based on carbon offsets could take different forms. Under a conservative scenario, offsets could be granted for investments within Annex I countries. A more ambitious approach could grant offsets for investments in a larger group of countries, including developing countries. Because the marginal cost of carbon abatement is lower in economies in transition and developing countries, a system of carbon offsets would maximize the efficiency gains of new investments, while encouraging resource flows into these countries. The effectiveness of the system could be enhanced by establishing a carbon investment fund that pools different projects, thus reducing risk and lowering transaction costs. Ultimately, such a fund could lead to a full-fledged system of tradable emission permits.

Law

Because the issue of climate change involves all nations in the world, but in many different ways, it poses special difficulties in the area of international law. Traditionally, atmospheric pollution has been viewed through the lens of sovereignty. As stated in the influential 1941 *Trail Smelter* case between the United States and Canada, "no State has the right to use or permit the use of territory in such a manner as to cause injury by fumes in or to the territory of another." In the case of climate change, however, where action is based on precaution and the issues of proof are still problematic, the use of traditional international law may not be helpful. The obvious solution is treaty law, but as the text of the Convention makes clear, different nations have different interests. For this reason, the negotiations at the COP in Kyoto in December 1997 are expected to be particularly strenuous, as countries focus on the need for compliance measures to achieve reduction targets.

For further information

United Nations Convention on Climate Change
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PO Box 260124
Bonn, Germany, D-53153
Tel: 49-228/ 815-1000
Fax: 49-228/815-1999
Website: http://www.unfccc.de

Signatories and Parties to the Convention (as of July 1997)

Afghanistan (np)
Albania
Algeria
Angola (np)
Antigua and Barbuda
Argentina
Armenia
Australia
Austria
Azerbaijan
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Congo, Rep. of
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Korea, Rep. of
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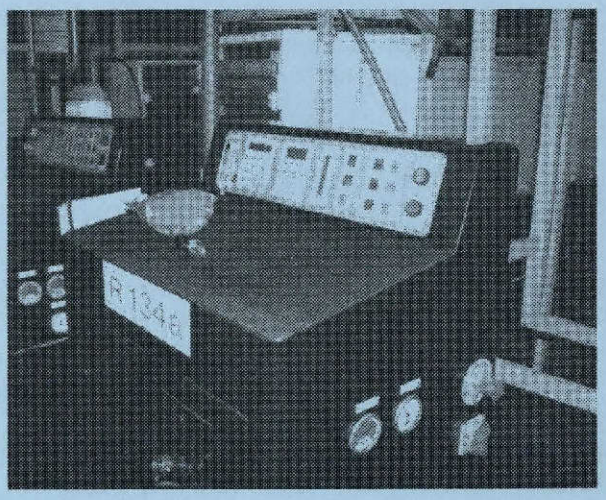
Note: no abbreviation = ratification; np = not currently a Party; w = with declaration or understanding.



Ozone Depletion

In the mid-1970s it was first perceived that certain human-made chemicals being released into the atmosphere might deplete stratospheric ozone. The initial hypothesis was put forward on the basis of calculations indicating that significant amounts of atomic chlorine were accumulating in the stratosphere, where the ozone layer exists. Based on the chemical properties of atomic chlorine and ozone, it was realized that a chemical reaction between the two would quickly ensue, and as a result, ozone molecules, which comprise three atoms of oxygen, would be destroyed.

The original calculations were made for two common chemicals known as chlorofluorocarbons (CFCs), which were being used as refrigerants, solvents, and foam-blowing agents. These chemicals are also referred to as halogenated compounds, because they contain one or more halogens, a class of elements with similar chemical properties. Other halogenated compounds that are significant sources of ozone depletion are halons, which are very effective fire-extinguishing agents, and methyl bromide, an effective fumigant used in agriculture.

The chemical stability that often makes halogenated compounds useful is also what makes them dangerous to the ozone layer. Most chemicals that escape into the atmosphere with the potential to deplete ozone never reach into the stratosphere. Rather, they return quickly to the Earth's surface, usually dissolved in rainwater. In contrast, halogenated compounds remain intact for longer than a century while they are circulated through the atmosphere. At levels above fifteen kilometers, the sun's ultraviolet radiation is strong enough to break apart these otherwise inert compounds, thereby releasing chlorine and bromine atoms. When conditions are right, these atoms spark a catalytic chain reaction in which each atom is continually set free to react with and break up new ozone molecules.

What began as an academic hypothesis was confirmed in 1984, when the ozone hole above Antarctica was discovered. Since then, less dramatic ozone depletion has been detected above much of the Earth's surface, except at tropical and subtropical latitudes. Ozone absorbs a portion of ultraviolet radiation known as UVB, which poses a danger to human beings in the form of increased skin cancer and cataracts and can alter biological processes. Thus, ozone depletion has been recognized from the beginning as a global threat requiring a global response.

International Legal Regime

The Vienna Convention for the Protection of the Ozone Layer set in motion the international regulatory process to protect the ozone layer. Negotiated under the auspices of the United Nations Environment Programme (UNEP), it was opened for signature in 1985 and entered into force in 1988. The Montreal Protocol, which along with subsequent amendments implements the goals of the Vienna Convention, was signed in 1987 and entered into force in 1989. There are 28 Signatories and 165 Parties to the Vienna Convention. There are 46 Signatories and 162 Parties to the Montreal Protocol.

Scientific Assessment

As the initial international effort to protect the ozone layer, the Vienna Convention did not set targets or timetables to reduce emissions of ozone-depleting substances. Rather, it emphasized the need for countries to work together. It stated that countries should "co-operate by means of systematic observations, research and information exchange in order to better understand and assess the effects of human activities

on the ozone layer and the effects on human health and the environment." The Convention called for assessments of alternative substances and technologies, and it outlined the kind of information that countries should exchange, including production of ozone-depleting substances and information on imports and exports.

Recognizing that the Vienna Convention was a work-in-progress, the text called on the UNEP executive director "to convene a working group to continue work on a protocol that addresses both short and long term strategies to control equitably global production and use of CFCs." It also authorized the executive director "to convene a Diplomatic Conference, if possible in 1987, for the purpose of adopting such a protocol."

Controlling Use and Production

On schedule, the Parties to the Vienna Convention met and adopted the Montreal Protocol, which establishes legal obligations to limit the use and production of specific chemicals based on calculations of their ozone-depleting potential. A landmark agreement in the area of environmental law, it is widely credited with limiting the amount of ozone-depleting substances released into the atmosphere and spurring the production of alternative nondepleting substances. Under the Protocol, countries agreed to meet a series of emission targets by specific dates. During the initial phase, they agreed to limit production and consumption of ozone-depleting substances to the same level that had prevailed in 1986. Subsequent phases stipulated actual reductions, leading ultimately to complete phase-out. In the years since the Protocol was negotiated, the Conference of the Parties has met annually to review the Convention. Three times-in London in 1990, in Copenhagen in 1992, and in Vienna in 1995-it added amendments and adjustments. These expanded the number of controlled substances to include additional CFCs as well as carbon tetrachloride, methylchloroform, methyl bromide, hydrobromofluorocarbons (HBFCs) and hydrochlorofluorocarbons (HCFCs), a class of chemicals used to replace CFCs. These amendments and adjustments also accelerated the phase-out of substances for which substitutes have become available.

Assisting Developing Countries

In its original and amended forms, the Montreal Protocol includes several provisions designed to alleviate the concerns of developing (or Article 5) countries. The 1987 Protocol allowed developing countries whose consumption of ozone-depleting substances was less than 0.3 kilograms per capita (since reduced to 0.2 kilograms) to delay compliance for ten years. Furthermore, any Party whose production of controlled substances was less than 25 kilotons could "transfer to or receive from any other Party, production in excess of the limits" as defined in the Protocol. Because these original exceptions were not sufficiently attractive, the 1990 amendment added a Multilateral Fund to the Protocol. It stated that the capacity of developing countries to meet their obligations would depend on "the effective implementation of the financial cooperation [as provided by the amendment] and transfer of technology." In the wake of these changes, most developing countries have become members of the Convention and of the Protocol.

Science

Whereas a number of environmental issues are driven primarily by socioeconomic forces, such as desertification or deforestation, the issue of ozone depletion has in many respects been science-driven. After scientists first realized that certain chemicals pose a threat to the ozone layer, extensive efforts were undertaken to measure the seriousness of the problem. Subsequently, scientists tackled the underlying causes by finding alternative chemicals that could replace ozone-depleting substances. Acknowledging the dominant role of science is key in assessing how the international community has responded to the threat of ozone depletion and in drawing lessons that might be applicable to other environmental issues.

The most obvious lesson of the Montreal Protocol and its amendments is that the stringent limits they imposed have largely been successful. As a result, the threat to human health and the environment from ozone depletion now appears contained. Assuming continued compliance (and success in stamping out the illegal black market that arises from production in Russia), the level of ozone-depleting halogens in the stratosphere is expected to peak in several years and then slowly subside. According to current estimates, the natural process of ozone production will restore the ozone layer in perhaps fifty years, as the levels of chlorine and bromine decrease.

The rapid international response to the problem of ozone depletion is strong evidence of what countries can do when faced with an immediate environmental threat. In particular, it demonstrates the importance of thorough scientific assessment based on global research and analysis, including effective coordination. Furthermore, it demonstrates the importance of bringing all the relevant stakeholders together to ensure that scientific knowledge is properly disseminated and integrated in national action plans. Nonetheless, it is worth noting that global action did not

occur as quickly as it might have. Bans on the use of CFCs for certain purposes, for example, were initiated in several countries, notably the U.S. in the 1970s, when damage to the ozone layer was still considered hypothetical. The global response to ozone depletion can be considered a successful model for multilateral action, but a model that must be adjusted and expanded as attention shifts to other technologically complex matters, such as global climate change.

Economics

Although the Montreal Protocol relies heavily on command and control targets to achieve its purposes, it nonetheless holds an historic place in the history of environmentalism because of a key economic innovation. The 1990 amendment that established the Multilateral Fund to help developing countries was the first example of its kind among international environmental treaties. It set an important precedent that helped pave the way for the 1992 Rio Earth Summit (UNCED) and the negotiation of the Framework Convention on Climate Change (FCCC) and the Convention on Biological Diversity (CBD). Henceforth, it was possible to view the international effort to preserve the environment not simply as a set of negotiated legal norms but also as a comprehensive global project implying broader obligations on the part of all countries.

Law

An interesting legal issue that relates to the regime to control ozone-depleting substances concerns international trade. The Montreal Protocol is the only international agreement regulating the global commons that makes use of trade measures as an enforcement tool. Although it does not restrict trade between Parties, the Protocol does impose trade restrictions on imports and exports with non-Parties. It also states that Parties should "refrain from providing new subsidies, aid, credits, guarantees or insurance programs for the export to States not Party to this Protocol of products, equipment, plants or technology that would facilitate the production of [ozone-depleting substances]." Subsequent amendments also banned the import from non-Parties of certain products that contain controlled substances. Certain legal commentators have questioned whether these enforcement measures would be considered a violation of the General Agreement on Tariffs and Trade (GATT), although others point out strongly that Article XX of GATT allows for exceptions "necessary to protect human, animal or plant life of health." The multilateral trade provisions have never been the subject of a legal challenge.

For further information

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Biological Diversity

The Earth's biological resources, and the life support systems they sustain, are vital to the physical, social, and economic survival of humankind. At the same time that there is growing recognition of the tremendous importance of biological diversity to present and future generations, biodiversity is coming under increasing pressure in many parts of the world.

"Biodiversity" is an umbrella term that describes both the number and variability of living organisms. It can be defined as genetic diversity, species diversity, and ecosystem diversity. Genetic diversity refers to the variability within a species, such as corn, rice, or tigers, and to the sum of genetic information contained in the genes of individual plants, animals, and micro-organisms. Species diversity refers to the variety and distinctiveness among species, with emphasis on species that are unique or endemic to certain ecosystems or countries. The number of species on Earth has been variously estimated to be between 10 and 100 million, although to date, only 1.7 million species have been described. Ecosystem diversity refers to the variety of habitats, biotic communities, and ecological processes in the biosphere. Biodiversity can be maintained *in situ*, whereby species are concerved within natural habitats, including protected areas, or *ex situ*, whereby they are preserved in zoos, arboreta, or botanical gardens, or in the form of germplasm in genebanks.

The main threats to species are habitat loss and fragmentation, overhunting and overharvesting, secondary extinctions due to abundance or absence of other species, pollution, and the introduction of alien species. Climate change may become a major threat in the next century and has already been suggested as a cause of the decline in certain amphibian populations. Species losses are occurring globally, from tropical forests, which include 50 percent of all identified terrestrial species, to rivers and lakes, mountains, and islands. According to recent estimates based on current rates of deforestation, between 2 percent and 8 percent of the Earth's species will disappear over the next twenty-five years.

International Legal Regime

Because the distribution of biological resources transcends political boundaries, the preservation of biodiversity requires global cooperation. Concern over species loss and growing global commitment to sustainable development led to preparation of the international Convention on Biological Diversity (CBD) under the auspices of the United Nations Environment Programme (UNEP). The Convention was signed at the Earth Summit in Rio de Janeiro in June 1992 and entered into force in 1993. There are 184 Signatories and 169 Parties to the Convention.

The Convention promotes a renewed partnership among nations through scientific and technical cooperation, access to financial and genetic resources, and transfer of ecologically sound technologies. Its main objectives are the conservation of biological diversity, the sustainable use of its components, and the equitable sharing of the benefits of the use of genetic resources. Although several other international agreements and protocols address biodiversity issues (see Endangered Species and Wetlands), the CBD is the first to address all aspects of biological diversity: genetic resources, species, and ecosystems. The CBD recognizes for the first time that the conservation of biological diversity is a common concern for humankind and an integral part of development.

The preamble establishes baseline premises and concerns. Notably, it states that "where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat." This is known as the Precautionary Principle.

Many of the regions of highest biodiversity lie in tropical developing countries, which have been the least studied and often lack adequate scientific capacity and resources to protect these precious resources. The Convention articulates the "urgent need to develop scientific, technical and institutional capacities to provide the basic understanding upon which to plan and implement appropriate measures."

Balancing Rights and Obligations

The Convention calls for the "fair and equitable sharing of the benefits arising out of the utilization of genetic resources." At the same time, it affirms the "sovereign right" of nations to "exploit their own resources pursuant to their own environmental policies." The Convention tries to mediate the conflicting implications of these statements through a variety of measures. It calls on all nations to identify and monitor components of biodiversity and to integrate "consideration of the conservation and sustainable use of biological resources into national decision-making." The Convention also calls on the Parties to take into account the special needs of developing countries.

The CBD is the first international legal instrument to spell out the rights and obligations of its Parties concerning scientific, technical, and technological cooperation. To this end, it provides for a financial mechanism and a Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA).

Financing the Convention

While the CBD acknowledges that new and additional resources will be needed to meet global biodiversity objectives, it clarifies that, for developing countries, "economic and social development and eradication of poverty are the first and overriding priorities." It also states that "the extent to which developing country Parties will effectively implement their commitments" will depend on how the developed countries meet their commitments "related to financial resources and transfer of technology."

The Convention also lays out criteria for selecting a financing mechanism. The Global Environment Facility (GEF) is the interim financing mechanism. The GEF has an Operational Strategy for Biodiversity, providing funding for biodiversity projects in four ecosystems: semi-arid and arid; coastal, marine, and freshwater; forest; and mountain. Land degradation issues, preparation of national action plans, and short-term emergency actions for threatened species also can be funded through GEF.

Science

Science contributes to knowledge of biodiversity at all three levels—ecosystem, species, and genes—and to understanding the complex interlinkages between species and ecosystem health. It also provides the knowledge and tools for biodiversity management, conservation, and sustainable use. Specific articles of the CBD relate to the need for biological assessment, inventory, and monitoring (Article 7); research and training (Article 12); impact assessment (Article 14); and technical and scientific cooperation (Article 18).

Unlike other environmental treaties such as the Convention on Climate Change, no formal scientific assessment was carried out prior to negotiation of the CBD. Subsequently, UNEP, with GEF resources, prepared the Global Biodiversity Assessment (GBA), an expert review involving 1,500 scientists worldwide. This assessment of relevant biological, economic, and social issues provides a useful baseline review of current biodiversity knowledge, issues, and theories. It also identifies key needs for further research, training, and information management to develop tools for conservation and sustainable use that will address human needs while maintaining a healthy environment.

In addition to the GBA, scientists are collaborating internationally on biodiversity research, expertise, and information exchange in sectors as diverse as agriculture, forestry, fisheries, marine science, and health, all of which depend on natural ecosystems and the environmental functions they protect. In addition, global initiatives are being established to monitor terrestrial habitat degradation and loss and coral reefs.

The emergence of biotechnology and better techniques for preservation and handling of biological materials and germplasm is enabling science to make a major contribution to new products and processes with significant medical and agricultural potential. Scientific investigations and understanding of key ecological processes are also enabling the development of tools for biological control of pests and waste.

Economics

Biological resources provide many kinds of goods and services. The resources that are are consumed to meet human needs, such as timber, fish, or medicinal plants, have the most obvious kind of economic value. Those not consumed may also possess value. Examples include nature preserves that promote recreation, tourism, or education. Biological

resources can also possess indirect economic value. Examples include watersheds that provide clean water, wetlands that promote fisheries and prevent floods, forests that conserve soil and enrich its productivity through nutrient cycling, habitats that support pollinators, and predators of pests that destroy agricultural crops. Another type, quasi-option value, refers to value that may be realized in the future, such as a scientific discovery made with germplasm.

Biological resources also have what might be called passive economic value. One form is the amount of money that people are willing to pay (or forego) so that others may have access to biological resources such as clean water. A second form includes what people wish to leave to future generations, while a third is what economists call existence value: the value that people attach to knowing that a species, such as polar bears, exists even if they never actually see one.

Economists are concerned about biodiversity precisely because market prices are unreliable indicators of social and environmental costs. For instance, watershed services and supply of a regular supply of clean water are often perceived as free goods. Recent estimates to put a value on global ecological services have proposed a figure in the region of US$33 trillion per year, well above the value of total global economic output. Even though these figures are highly speculative, they demonstrate the valuable role that biodiversity plays in providing the ecological services that underpin human existence and livelihoods.

In recognition of the importance of integrating economic tools in the effort to preserve biodiversity, Article 11 of the CBD states that Parties should adopt "incentives for the conservation and sustainable use of components of biological diversity." One of the better known incentives to preserve biodiversity is the debt-for-nature swap. Under such swaps, part of the international debt of developing countries is forgiven or purchased in exchange for an agreement to reserve land for a conservation area. The use of easements or tax breaks for not developing land is another economic tool for achieving biodiversity conservation goals, as are conservation trust funds.

Reform of economic policies and removal of subsidies and other incentives to unsustainable land use and unsustainable management of agriculture, forests, and natural resources can also be useful tools to promote biodiversity conservation. In Bangladesh, for instance, reduced subsidies on pesticides and fertilizers led to lower chemical use in rice fields, adoption of integrated pest management, maintenance of greater natural biodiversity in the production landscape, cleaner water, and reduced impact on fisheries in neighboring wetlands.

Law

The CBD emphasizes action at the national level to conserve biodiversity and use it sustaibably. Legal measures are critical tools for countries seeking to maintain bidoversity. Such measures can include customary and traditional legal measures, national legislation for protected areas, regulatory actions to control land and species use, and laws for regulating processes and activities detrimental to biodiversity. Legislation is essential to confer jurisdiction and powers on public bodies and communities for conservation; establish and enforce procedures (such as environmental impact assessments); provide for public participation; establish a legal basis for conservation contracts, easements, and management agreements; and implement obligations under international agreements.

A key biodiversity issue concerns the equitable sharing of benefits arising from the use of genetic resources and the acknowledgment of intellectual property rights for local and traditional knowledge and discoveries. Where possible, the Convention says that nations that possess specific genetic resources should be able to participate in research projects that involve those resources. To further protect the interests of developing countries, the Convention calls for "access to and transfer of technology" but states that such a process must be subject to patent law and intellectual property rights. These issues need to be resolved both at the national and international level and will be debated further at the Fourth Conference of the Parties in Bratislava in 1998.

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FORESTS

Of the major environmental issues that confront the world community, the size and condition of forests has the greatest impact on all the others. Forests contain the largest share of the Earth's biodiversity, and they are also the most important terrestrial sink for carbon, thus making them important in the effort to stem climate change. Forests also play a key role in dryland regions, where they help prevent soil and wind erosion as well as store moisture. Finally, because they regulate most of the Earth's watersheds, forests help ensure the availability of fresh water for sanitation and agriculture.

In many parts of the world, forests have been cut down or altered in ways that endanger global ecosystems. Historically, the greatest transformation of the forest environment has occurred in temperate, developed countries. More recently, this process has been occurring in tropical, developing countries in which logging interests are aggressively harvesting the hardwoods that typically grow in hot and humid climates and forests are being converted for agricultural use.

International Legal Regime

In recognition of the importance of forests to global ecosystems, extensive preparatory efforts were undertaken before the 1992 Rio Earth Summit to negotiate an international convention on forests. However, because many outstanding issues could not be resolved, there is no binding international agreement on forests. In lieu of an agreement, negotiators included in *Agenda 21* a chapter entitled "Combating Deforestation." They also agreed to a more wide-ranging document entitled "Forest Principles" or the "Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests." The Forest Principles were annexed to *Agenda 21*.

Forest Principles

Acknowledging that international forest law is evolving, the preamble to the Principles speaks of a "first global consensus on forests" and states that countries have "decided to keep [the Principles] under assessment for their adequacy with regard to further international cooperation on forest issues." Because certain countries were concerned that their forest policies were being singled out for implicit criticism, the preamble also states that "these [P]rinciples should apply to all types of forests, both natural and planted, in all geographic regions and climatic zones, including austral, boreal, subtemperate, temperate, subtropical and tropical."

In recognition of the varied, often conflicting values that forests possess, the Principles make several references to cost-benefit analysis. The document states that "decisions taken on management, conservation, and sustainable development of forest resources should benefit, to the extent practicable, from a comprehensive assessment of economic and noneconomic values of forest goods and services and of the environmental costs and benefits. The development and improvement of methodologies for such evaluations should be promoted."

Because forests have important links with international trade and macroeconomic conditions, the Principles also make reference to the role of the international community in forest management. The document states that "the efforts of developing countries to strengthen the management, conservation and sustainable development of their forest resources should be supported by the international

community, taking into account the importance of redressing external indebtedness, particularly where aggravated by the net transfer of resources to developed countries, as well as the problem of achieving at least the replacement value of forests through improved market access for forest products, especially processed products." The Principles also state that "new and additional financial resources should be provided to developing countries."

International Tropical Timber Agreement

Almost a decade before the Rio Earth Summit, the International Tropical Timber Organization (ITTO), comprising producers and consumers of tropical timber, signed the International Tropical Timber Agreement (ITTA). First negotiated in 1983, the Agreement was renegotiated and extended for five years in 1994. Its central objective is to promote the sustainable production of tropical timber. The organization's goal is to ensure that by the year 2000 all tropical timber that entering world markets will be harvested from sustainable sources.

Under the Agreement, Parties have committed themselves to support a Special Account and the Bali Partnership Fund, whose purpose is to finance projects that promote sustainable production. In allocating resources for the Bali Fund, the Agreement states that members should "take into account...the special needs of members whose forestry sectors' contribution to their economies is adversely affected by the implementation of the strategy for achieving the exports of tropical timber and timber products from sustainability managed sources by the year 2000."

Another purpose of the ITTO is to improvement information relating to the tropical timber industry. It has established a variety of guidelines and criteria on tropical forests. These include guidelines for the sustainable management of natural and planted tropical forests, criteria for the measurement of sustainable tropical forest management, and guidelines on the conservation of biological diversity in tropical production forests.

Intergovernmental Panel on Forests

Another international initiative aimed at improving forestry management was the "Open-ended Ad Hoc Intergovernmental Panel on Forests (IPF).* In contrast with the Forest Principles and their emphasis on global similarities, this initiative acknowledged the differences among countries and regions. According to the report on the Third Session of the IPF, the process was designed "to encourage national implementation of criteria and indicators for sustainable forest management." The IPF report states that international efforts to establish such criteria and indicators should take into account "the specific regional and subregional conditions of forests and the diversity of economic, social and cultural environments."

To implement the goals of the IPF, a number of regional efforts were initiated. These were the Helsinki Process (European countries), the Montreal Process (other countries with temperate or boreal forests), the Tarapoto Proposal (tropical South American countries), the Lepaterique Process in Central America, the Dry-Zone Africa Process, and the Near East Process. All of these efforts are intended to increase the sustainable forestry knowledge base. Ultimately, the knowledge gained could provide the basis for an international convention on forests, or, at the least, improved international coordination in sustainable forest management.

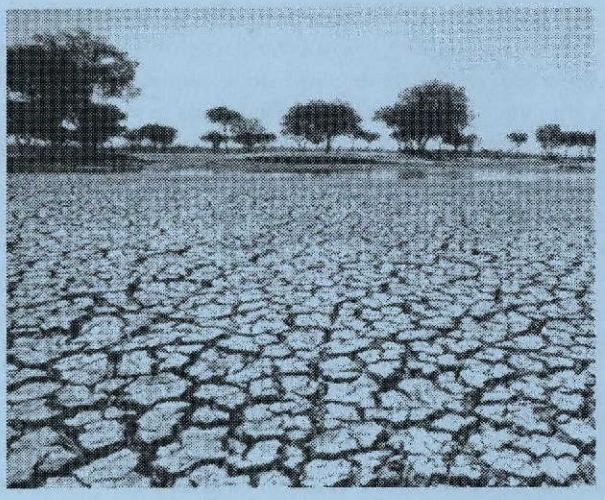
Science

Among the many scientific issues surrounding forests, one that stands out is the need to better understand the natural ecology of tropical forests. Unlike many temperate or particularly boreal forests, where the number of different tree species may be relatively limited, tropical forests usually contain a great number of species. This variety poses particular challenges for sustainable forestry. By its very nature, agriculture represents a conscious decision to limit biodiversity, with the expectation that economies of scale can thereby be achieved. If, however, the vitality of a forested area depends on the diverse interaction of many species, sustainable logging techniques will be harder to design. In recognition of these concerns, the ITTO has stated that it may take years to determine the logging capacity of tropical forests. The ITTO bases its caution on the need to wait until several tree rotations have been harvested, so that the secondary effects of such harvesting can be properly understood.

Economics

Consensus is widespread that forests are undervalued. Much attention has been paid to techniques that correct for these distortions. By themselves, efforts to calculate more accurate values are not a panacea and must be viewed within the context of political realities, but they are a crucial first step on the path to sustainable forest management. In particular, they establish the economic justification for more efficient tax and incentive policies, international investment programs, and forest preservation.

* This panel, initiated by the UN Commission on Sustainable Development (CSD), ended earlier in 1997. A proposal to extend and reformulate the panel as the Intergovernmental Forum on Forests was under discussion at the time of printing.



DESERTIFICATION/ DRYLANDS

Numerous factors including unsustainable agriculture, deforestation, and changes in settlement patterns are endangering drylands throughout the world. Unchecked, these factors cause desertification (a term often used interchangeably with land degradation) in the form of soil erosion, compaction, and salinization. Loss of vegetative cover is often widespread. For people in drylands, the consequences are likely to be poverty and famine, while for ecosystems, desertification can contribute to biodiversity loss and climate change.

Drylands cover 40 percent of the Earth's terrestrial surface and may be defined as regions in which the average amount of water that falls as precipitation is significantly less than what evaporates from the land or plants. There are four categories of drylands: hyperarid, arid, semiarid, and dry subhumid. Hyperarid regions include the true deserts, such as the Sahara in Africa or the Atacama in Chile. The productive capacity of these lands is extremely limited, except where rivers flow or underground water is available. Arid regions can support grazing, while semiarid regions, although primarily pastoral, can also support rainfed agriculture in wetter sections. Dry subhumid zones will support woodlands and are used for intensive agriculture along with livestock production.

What constitutes desertification has been a subject of discussion over the years. In the past, it was defined as "the dimunition or destruction of the biological potential of the land, leading ultimately to desert-like conditions." More recently, a definition has been adopted that acknowledges greater variability in the condition of drylands. Under this definition, desertification is considered "land degradation in arid, semi-arid and dry subhumid areas resulting from various factors, including climatic variations and human activities."

Currently, many of the drylands in the world are degraded. Although there is debate about the reliability of the data, it has been estimated that three-fourths of the arid land used for grazing in the world is degraded to a moderate or greater degree, primarily through the loss of vegetative cover. It has also been estimated that one-half of the cropland located in semiarid or dry subhumid regions is degraded, primarily through soil and wind erosion. Lastly, one-third of all irrigated land is estimated to be degraded through salinization.

International Legal Regime

Efforts to respond to drought and desertification lend themselves to a multilateral approach, because rarely are the consequences confined to one country. Dry spells frequently lead to transboundary migration, and in many instances, international emergency relief is necessary to help those afflicted. The United Nations Convention to Combat Desertification (CCD), which carries the subtitle, "In those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa," is the most comprehensive approach designed to reduce desertification. The CCD was opened for signature in October 1994 and entered into force in December 1996, replacing an earlier UN effort launched in 1977. There are 106 Parties and 115 Signatories to the Convention.

Unlike certain environmental issues for which the need for concerted global action has only recently been recognized, the need to respond to the threat of desertification has long been acknowledged. The earlier UN effort, for example, came in response to the drought in the African Sahel in the 1970s. Long before that, the famous 1930s dust bowl in the United States demon-

strated the need to adapt agricultural methods to local climate and soil conditions. For these reasons, the CCD puts less emphasis on the need for action, which is understood, and instead establishes guidelines on how countries can pursue their efforts with the maximum likelihood of success.

Participation and Cooperation

Article 3 of the Convention, entitled "Principles," emphasizes the importance that negotiators placed on creating an integrated and democratic framework for combating desertification. It first states that the "Parties should ensure that decisions on the design and implementation of progammes...are taken with the participation of populations and local communities." It also states that "Parties should...improve cooperation and coordination at subregional, regional and international levels." Finally, "the Parties should develop, in a spirit of partnership, cooperation among all levels of government, communities, nongovernmental organizations and landholders."

The themes of participation and cooperation are meant to build on lessons learned from the earlier regime designed to combat desertification. Negotiators believed that in too many cases, competing approaches and interests had prevented donors and beneficiaries from creating effective partnerships. Moreover, they believed that the people who live on drylands and are often the most knowledgeable about them were not adequately consulted in relation to programs and policies. Under the CCD, national action programs will be drawn up that commit nations to agreed approaches and that rely on community participation in planning and implementation.

The CCD is unusual among recent environmental agreements in that it does not create a new financial mechanism to support its activities. Rather, the Convention establishes a "Global Mechanism," whose mandate is "to increase the effectiveness of existing financial mechanisms." However, as with many other international agreements, the Convention does call for "new and additional funding."

Focusing Concern

Although drylands and deserts exist on all continents except Antarctica, including much of the western United States, the Convention focuses on the impoverished regions of the world. Its subtitle highlights desertification in Africa, while the text refers to "the particularly tragic consequences of these phenomena in Africa." The CCD also expresses "concern over the impact of desertification and drought on affected countries in Central Asia and the Transcaucasus." Regional annexes to the Convention outline the need to also combat desertification in Latin America and the Caribbean and in the Northern Mediterranean. Lastly, the Convention states that "desertification and drought affect sustainable development through their interrelationships with important social problems such as poverty, poor health, and nutrition, [and] lack of food security."

Biodiversity and Climate Change

Because desertification is likely to cause the loss of biodiversity and because the destruction of vegetation and woodlands increases carbon dioxide, a greenhouse gas, the CCD also calls on nations to coordinate activities as they relate to the Convention on Biological Diversity (see Biological Diversity) and the Framework Convention on Climate Change (see Climate Change).

Science

Desertification has generated significant scientific debate. One issue has been whether desert-like areas, notably in Africa, are advancing inexorably or whether observed changes are better explained by normal variations in climate. More generally, there is debate as to the nature of less severe forms of land degradation. In both cases, it will be important to expand the data base to pinpoint the areas most affected while determining where intervention can be most effective.

Biotechnology will play a key role in the effort to combat desertification. In response to harsh conditions, plants and animals in drylands typically exhibit unusual genetic traits. Scientists already have been able to use such traits to develop crops that are more resistant to drought. At the same time, harsh conditions have generally limited the range of biodiversity in drylands, making them particularly vulnerable to biodiversity loss and extinction. The result is a scientific race against time to map biodiversity in dryland regions. The sooner science unlocks the value of genetic resources in drylands, the greater will be the incentive to preserve those resources. This will help forestall biodiversity loss, while also encouraging efforts to combat desertification.

Economics

Economic tools, particularly cost-benefit analysis, play a critical role in combating desertification by enabling communities to make more efficient use of limited resources in dryland regions. These tools are especially helpful in measuring external costs, which are often beyond the capacity of local populations to discern. For example, soil erosion in the form of river sediment can cause damage

hundreds of miles away, and the ill effects of salinization may not show up for many years. Unfortunately, measuring these costs can pose special challenges in regions in which desertification is most acute, such as Africa and Western Asia. In particular, the analysis is made more difficult by prices that have been heavily distorted by taxes and subsidies.

To promote sustainable development in drylands regions, resources and services must be valued more accurately. Necessary reforms include wider imposition of grazing fees for communally held land, cost-recovery for the use of water and animal health services, and elimination of subsidies for fuels and fertilizer. Reductions in price supports for livestock and the abolition of incentives to convert forests into pasture are other needed reforms.

Even as economists emphasize the importance of market signals in promoting sustainable economic activity in drylands, attention has been focused on how policies to promote free trade can have unintended consequences. In certain regions, farmers have engaged in monoculture to respond to high world prices, not recognizing its risks. Far from disproving the importance of market signals, inappropriate use of monoculture demonstrates the need to improve the quality of information in dryland regions, where the margin for error is much less than elsewhere.

Regarding development assistance, further research is necessary to measure the return on investment for projects that are designed to help pastoralists become more productive. Absent such analysis, investment may bypass drylands, and many of the factors causing desertification will not be addressed.

Law

A key legal issue in the effort to combat desertification concerns land tenure in pastoral regions. In the case of farming, consensus is strong that a system of private ownership or secure leases is preferable. However, in the case of pastoralism in arid and semi-arid regions, the issue is more complicated. Pastoralists in these regions need considerable flexibility of movement to deal with climatic stress. This does not imply complete freedom of access, however, and under traditional communal systems, complex rules and regulations evolved to ensure that resources were managed efficiently and sustainably. Unfortunately, many of these systems have been undermined-sometimes deliberately. A key reform aimed at rectifying past errors, while permitting pastoralists to respond to changing social and economic conditions, is the restoration of local authority and responsibility in the management of common resources. The encouragement of such efforts, in combination with proper incentives, can lead to more sustainable resource use in dryland regions.

For further information

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Comoros (np)
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St. Lucia
St. Vincent and the Grenadines (np)
São Tomé and Principe (np)
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Turkey (np)
Turkmenistan
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Vanuatu (np)
Yemen, Rep. of
Zambia
Zimbabwe (np)

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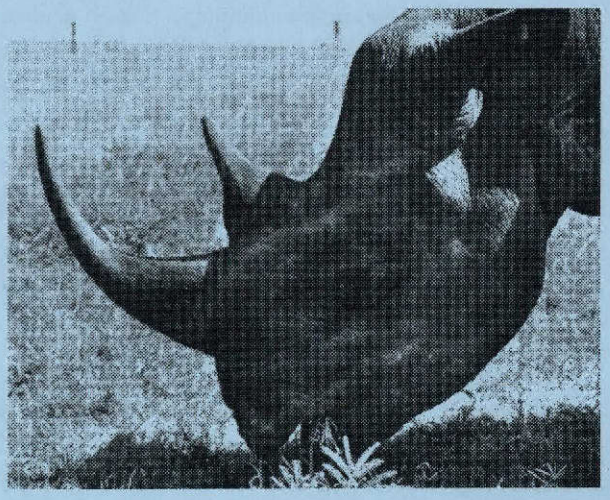

Endangered Species

Before scientists and environmentalists began to sound the alarm about the loss of biodiversity, their attention was focused on endangered species. Their earlier efforts were responding to mounting evidence that many of the world's magnificent forms of wildlife were threatened with extinction. Contributing factors included habitat loss, wider availability of powerful weapons, and improvements in transportation that connected formerly remote areas with world markets. In many instances, the wildlife that most caught the public eye was being hunted for use as luxury goods, such as alligator handbags or leopard skin coats.

International Legal Regime

To protect global wildlife, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was opened for signature in 1973 and entered into force in 1975. CITES has 56 Signatories and 139 Parties. These countries act by banning commercial international trade in an agreed list of endangered species and by regulating and monitoring trade in others that might become endangered.

CITES' most obvious characteristic is that it seeks to prevent species' extinction primarily through international trade regulation, not just through domestic measures. Although species' destruction has often occurred for reasons quite apart from international trade and the Convention recognizes "that peoples and States are and should be the best protectors of their own wild fauna and flora," there are practical reasons to emphasize trade in the Convention. In particular, many animals threatened with extinction were being hunted or (in the case of tropical birds) captured for sale abroad. Furthermore, at this early stage in environmental law, it was easier to amend an existing customs regime than to achieve consensus on changes in domestic law.

Another noteworthy characteristic is that CITES largely invokes qualitative reasons for taking action. The first paragraph of the Convention states that "wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come." The second paragraph includes the words "aesthetic" and "recreational" to describe the value of wild fauna and flora. This emphasis stands in contrast to some environmental agreements that focus on the threat to public health from chemical pollution, or the social and economic costs of unsustainable resource use.

Listing Endangered Species

The Convention lists all species that are endangered or could become endangered in three separate appendices, according to the severity of the extinction threat:

Appendix I. Includes all species threatened with extinction that are or may be affected by trade. Currently, Appendix I lists 830 species, most of which are birds, mammals, and plants.

Appendix II. Includes all species that may become threatened with extinction unless trade is strictly regulated. It also covers species that are similar in appearance to endangered species and must therefore be regulated to ensure that efforts to protect endangered species are effective. Currently, Appendix II lists close to 30,000 species, most of which are plants.

Appendix III. Includes all species that any Party identifies as being subject to regulation within its jurisdiction for the

purpose of preventing or restricting exploitation. The cooperation of other Parties is, therefore, needed. Currently, Appendix III lists 229 species.

CITES recognizes that amendments need to be made to the appendices on a regular basis. For Appendices I and II, amendments to add or subtract a listing require a two-thirds majority of Parties participating at a meeting of the Conference of the Parties. For Appendix III, a Party may make an amendment adding or subtracting a listing whenever it chooses. A Party may also enter an exception, or reservation, with respect to any of the species listed in Appendix III whenever it chooses

Regulation and Enforcement

To control trade in endangered species, the Convention establishes a system of permits. Any specimen that is listed in the first two appendices must be accompanied by an export and import permit when it enters the importing country. For marine species, the responsibility to enforce the law rests with the State of introduction. Specimens listed on Appendix III must be accompanied by an export permit alone. Without the correct permits, the specimen is considered illegal and must be returned to the exporting country.

The criteria for granting permits vary according to the appendix. Under Appendix I, a Scientific Authority and a Management Authority of the State of Export (as so designated) must advise that export will not be "detrimental to the survival of that species" and that the species was not taken illegally. An import permit shall only be granted when the Management Authority of the State of Import is satisfied that the specimen is not to be used for "primarily commercial purposes."

Appendix II states that permits should not be granted in cases in which the designated scientific authority determines that trade should be controlled to maintain the species "well above the level at which that species might become eligible for inclusion in Appendix I." Under Appendix III, permits are granted on a relatively routine basis.

To facilitate enforcement, the Convention states that countries should "penalize trade in, or possession of, such specimens, or both; and to provide for the confiscation or return to the State of export of such specimens." The return of specimens shall be done at the expense of the State of Export.

Nongovernmental Organizations

CITES makes special provision for the participation by interested parties, including nongovernmental organizations, in meetings of the Conference. These groups shall be admitted unless at least one-third of the Parties present object.

Science

As concern has intensified in recent years about the threat of species extinction, much discussion has focused on the number of species that exist. Among higher taxa of species, scientists catalogue more than 13,000 species of mammals and birds; more than 30,000 species of reptiles, amphibians, and fish; and approximately 25,000 species of flowering plants. For all forms of life, including those not catalogued, the figures are much less certain, with one widely quoted estimate ranging between 10 million and 100 million species.

Given the uncertainty that surrounds issues of species extinction, along with the complex interaction among species, conservation efforts are increasingly looking at the broader forces that determine ecological well-being. One conservation approach that holds particular promise in the effort to promote sustainable development is ecosystem management, which makes use of concepts such as minimal viable population, community ecology, and demography to improve understanding of how ecosystems function. Where appropriate, and given adequate information, such efforts may allow for the conservation of ecosystems and the species that live there while allowing for controlled economic activity.

Science is also improving understanding about the importance of genetic variation within populations as a basic evolutionary force. In fact, maintaining intraspecific genetic variation, and thus evolutionary "potential," is a critical objective of conservation and sustainable development.

Economics

Whereas the Convention on Biological Diversity (see Biological Diversity) pays special attention to the economics of preserving biodiversity, CITES makes scarce reference to these concerns. Yet, clearly, economics is a driving force behind the growing threat of species extinction. The wildlife trade, for example, is a highly lucrative, multibillion dollar-a-year business that thrives in the face of extensive efforts, including CITES, to stamp it out. Millions of live animals and plants are traded each year to supply the demand for pets and ornamental plants, while products from endangered species, including furs, leather, and timber, continue to cross borders in large quantities.

The reason that CITES does not discuss economic issues, such as the cost of regulation or the use of economic instruments to encourage preservation, may be traceable

to the economic theory of species extinction that prevailed in the 1970s at the time of negotiation. According to that theory, species became endangered when their natural growth rate was not adequate to accommodate the economic rents that could be gained by exploiting them. The purpose of CITES was to reduce the price in the marketplace by means of moral suasion and to increase the cost of harvesting by making trade (and perhaps poaching) illegal. As an explanation for species destruction, this theory accounted for certain key relationships. In particular, endangered species products that fetch a high price in the marketplace clearly encourage exploitation. At the same time, however, it was not clear that outlawing trade in endangered species would necessarily lower prices. Where moral suasion did not work, greater risk might actually cause the price to rise. Moreover, to the degree that species are threatened by habitat conversion, CITES creates no countervailing incentives to promote preservation.

An instructive example of the economic implications of CITES is the case of the vicuña in the Andean mountains. Because CITES banned trade in vicuña wool products, the population of the vicuña has recovered from fewer than 1,000 at its low point to nearly 100,000 today. Lifting the ban on the vicuña trade could create an important source of income for poor Andean communities, especially if the income were used to manage this resource sustainably. Nonetheless, the fear persists that delisting the vicuña would open the way to renewed exploitation and the possibility of future extinction. In such situations, close monitoring and regulation as well as appropriate property regimes are necessary to ensure that these formerly endangered species are harvested sustainably.

Law

An interesting legal case that addresses the issue of endangered species in an international context is currently being argued before the WTO. The case was brought by several shrimp-exporting nations against the United States for imposing an embargo on shrimp caught with nets that do not have special devices to protect sea turtles. The U.S. action, which was only taken in response to a federal court order, involves the United States Endangered Species Act, although sea turtles endangered by shrimping are also protected under CITES. The issue in the case is whether the U.S. embargo violates GATT. In a potentially analogous situation, the 1991/1994 *Tuna/Dolphin* decisions that involved the U.S. and Mexico, free trade principles prevailed. The ruling in this case, which is expected in December, will provide an indicator of whether environmental considerations may be incorporated to a greater degree than previously in issues surrounding international trade.

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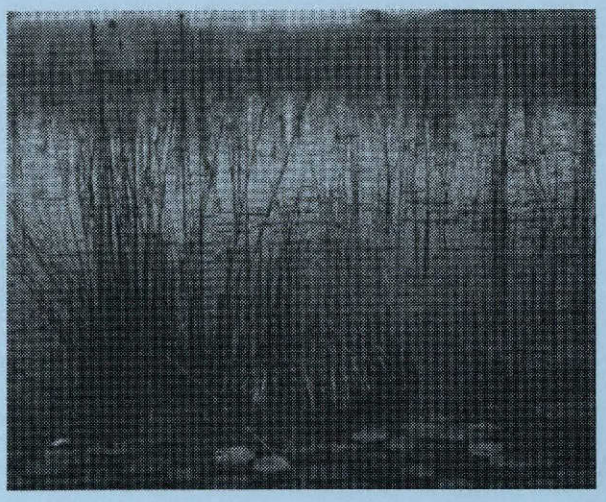

WETLANDS

It has become widely recognized that wetlands provide multiple economic and environmental benefits and that they are essential for the health, welfare and safety of people who in or close to them. Throughout much of history, however, wetlands were viewed quite differently, usually considered unproductive and often disease-producing areas that should be avoided, if they could not be drained. As a result, conversion of wetlands often was associated with social and economic progress, and governments played a key role by subsidizing civil engineering projects that channeled or otherwise diverted water from these sensitive ecosystems. The unfortunate consequence is that today many of the world's wetlands have disappeared. It is estimated, for example, that over two-thirds of the wetlands in Europe and approximately half of those in the United States and in Asia have been destroyed. In India and Malaysia, more than half of the mangroves have been cleared, while in Africa and Central and South America, wetlands are also under siege.

Wetlands are the transitional zone between permanently wet and generally dry environments. They exhibit enormous diversity according to their genesis, geographical location, water regime and chemistry, soil or sediment characteristics, and biota. There may be considerable variation within a single wetland, and many different types of wetlands may be found in proximity, forming not just different ecosystems but wholly different landscapes. Classification of wetlands is difficult, partly because of the enormous variety of wetland types and their highly dynamic character and partly because of difficulties in defining precise boundaries. Generally, five major wetland systems are recognized:

1. *Marine.* Coastal wetlands, including rocky shores and coral reefs
2. *Estuarine.* Including deltas, tidal marshes, and mangrove swamps
3. *Lacustrine.* Wetlands associated with lakes
4. *Riverine.* Wetlands along rivers and streams
5. *Palustrine.* Meaning "marshy" and including marshes, swamps, and bogs.

International Legal Regime

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat provides the framework for international cooperation for the conservation and wise use of wetlands and their resources. Also known as the Ramsar Convention on Wetlands, it was opened for signature in 1971 and entered into force in 1975. The Convention has 98 Signatories and 101 Parties. Currently, 872 wetland sites, totaling more than 62 million hectares, are designated for inclusion in the Ramsar List of Wetlands of International Importance.

Designating Wetlands

The Convention states that "each contracting party shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance." Under the Convention, "the boundaries of each wetland shall be precisely described and also delimited on a map that may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands." These wetlands should be chosen "on account of their international significance in terms of ecology, botany, zoology, limnology, or hydrology. In the first instance, wetlands of international importance to waterfowl at any season should be included."

The Convention also states that "each contracting party shall designate at least one wetland" either when it signs the Convention or when it deposits its instrument of ratification or accession. A country is permitted to delete or restrict the boundaries of a designated wetland on the basis of "urgent national interests."

Planning and Implementation

Once countries have designated wetlands, the Convention states that "the Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands...and as far as possible the wise use of wetlands in their territory." They are also required to inform the bureau in charge of the Convention "if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as a result of technological developments, pollution or other human interference."

As part of a broader effort to preserve wetlands, the Parties agreed to "promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening." Should a country decide to alter the boundaries of a wetland as part of the 'urgent national interest' exception, the Convention states that it "should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves." The Convention also calls on Parties to "encourage research and the exchange of data and publications regarding wetlands and their flora and fauna," and to "promote the training of personnel competent in the fields of wetland research, management and wardening." Parties should also "consult with each other...in the case of a wetland extending over the territories of more than one Contracting Party or where a water system is shared by Contracting Parties."

In 1990 the Parties made an important addition to the Convention when they agreed to establish a financing mechanism, the "Wetlands Conservation Fund," to help developing countries meet their obligations. The fund provides small grants to improve management of designated sites, add new sites, promote wise use, and support regional activities.

To strengthen coordination of the key global treaties on species and habitat preservation, in 1996 the secretariats of the Ramsar Convention, CITES (see Endangered Species), and the Bonn Convention on Migratory Species* signed a Memorandum of Cooperation with the executive secretary of the Convention on Biological Diversity.

Science

Our understanding of the importance of wetlands has improved over the years. Today, it is clear that wetlands are "keystone" ecosystems, which provide crucial economic and ecological benefits. Science has advanced understanding of the important inter-relationships between wetlands and other ecosystems and highlighted the importance of wetlands in global energy and nutrient cycling. Wetlands are among the most productive ecosystems on earth and are critical during different stages of the life-cycles of numerous species.

Science is also helping countries manage and protect wetlands. A key scientific challenge is the need to establish accurate maps and inventories of them. Satellite imagery and geographic information systems (GIS) promise to speed up the mapping process. Where wetlands have already been degraded, science can help determine the most effective ways of restoring them.

Economics

Wetland benefits can be classified as functions, values, and attributes:

Functions. The interactions of physical, biological, and chemical components of a wetland, such as soils, water, plants and animals, enable the wetland to perform important functions. A few of these functions include water storage; storm protection and flood mitigation; shoreline stabilization and erosion control; groundwater recharge (the movement of water from the wetland down into the underground aquifer); groundwater discharge (the movement of water upward to become surface water in a wetland); water purification; retention of nutrients, sediments, and pollutants; and stabilization of local climate conditions, particularly rainfall and temperature.

Values. Wetlands provide very important economic benefits, including water supply (maintenance of both quantity and quality), support of fisheries, support of agriculture through the maintenance of water tables and irrigation, grazing, timber production, energy resources such as peat and plant matter, wildlife resources, transport, and recreation and tourism opportunities.

Attributes. Wetlands have special attributes, including their importance for biological diversity, since wetlands support very large concentrations of birds (especially waterfowl), mammals, reptiles, amphibians, fish and invertebrate species, as well as countless plant species including rice, the staple diet of more than half of the world's people. Wetlands are also important to cultural heritage

* The Convention on Migratory Species has several noteworthy characteristics. For example, it covers many kinds of threats to species, and its requirements *vis à vis* contracting Parties are notably rigorous. However, it has not attracted a large number of Parties.

preservation, supporting open landscapes, indigenous wildlife, and local traditions.

These functions, values and attributes can be maintained only if the ecological processes of wetlands are allowed to function. Unfortunately, wetlands are among the world's most threatened places as a result of ongoing drainage, land reclamation, pollution, and unsustainable use. This ongoing destruction is occurring largely because the benefits provided by wetlands cannot be bought and sold directly in the marketplace. A critical issue for policymakers, therefore, is to ensure that these benefits are assigned economic value when decisions about alternative economic uses of wetlands are being made.

In addition, many earlier economic incentives that were designed to encourage conversion of wetlands still exist, even as the importance of preserving wetlands has become more widely recognized. These incentives can take many forms. They can include tax incentives for development, irrespective of whether the development harms wetlands, and many kinds of public insurance. Government-sponsored flood insurance, for example, which may once have been considered a socially conscious public policy, often encourages development in regions that would be more appropriately left as wetlands.

Agricultural subsidies are also a major cause of damage to wetlands. These include price supports for surplus crops, thereby encouraging over-production, as well as inappropriate subsidies for irrigation, which may drain water from wetlands. Incentives for aquaculture and many subsidized infrastructure projects can also cause harm to wetland areas.

Law

The Ramsar Convention is arguably the pre-eminent example of how international environmental law can grow and develop as scientific knowledge increases and new needs are identified. When first negotiated, the Convention was directed primarily at the preservation of waterfowl. However, as the importance of wetlands has become more widely acknowledged, the Convention has expanded its emphasis to deal with broader issues of habitat conservation and sustainable use. The number of countries that are Parties to the Convention and the number of wetlands that are designated under its provisions have grown significantly over the years. With the addition of a financing mechanism, although modest at present, the Convention also serves as a vehicle to allow for technology transfer and financial support to developing countries. Finally, the existence of the Convention gives shape and direction to the international effort to preserve wetlands in ways that would not occur if preservation were limited to national or regional efforts.

For further information

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Signatories and Parties to the Convention (as of July 1997)

Albania (1)
Algeria (2)
Argentina (6)
Armenia (2)
Australia (49)
Austria (9)
Bahamas (1)
Bangladesh (1)
Belgium (6)
Bolivia (1)
Botswana (1)
Brazil (5)
Bulgaria (5)
Burkina Faso (3)
Canada (35)
Chad (1)
Chile (7)
China (7)
Comoros (1)
Congo, Dem. Rep. of (2)
Costa Rica (6)
Côte d'Ivoire (1)
Croatia (4)
Czech (9)
Denmark (38)
Ecuador (2)
Egypt, Arab Rep. of (2)
Estonia (10)
Finland (11)
France (17)
Gabon (3)
Gambia (1)
Georgia (2)
Germany (31)
Ghana (6)
Greece (10)
Guatemala (3)
Guinea (6)
Guinea-Bissau (1)
Honduras (3)
Hungary (13)
Iceland (3)
India (6)
Indonesia (2)
Iran, Islamic Rep. of (18)
Ireland (45)
Israel (2)
Italy (46)
Japan (10)
Jordan (1)
Kenya (2)
Korea, Rep. of (1)
Latvia (3)
Liechtenstein (1)
Lithuania (5)
Luxembourg (np)
Macedonia, former Yugoslav Rep. of (1)
Malawi (1)
Malaysia (1)
Mali (3)
Malta (2)
Mauritania (2)
Mexico (6)
Morocco (4)
Namibia (4)
Nepal (1)
Netherlands (24)
New Zealand (5)
Niger (1)
Norway (23)
Pakistan (8)
Panama (3)
Papua New Guinea (1)
Paraguay (4)
Peru (7)
Philippines (1)
Poland (8)
Portugal (10)
Romania (1)
Russian Federation (35)
Senegal (4)
Slovak Rep. (7)
Slovenia (1)
South Africa (15)
Spain (36)
Sri Lanka (1)
Suriname (1)
Sweden (30)
Switzerland (8)
Tajikistan (np)
Togo (2)
Trinidad and Tobago (1)
Tunisia (1)
Turkey (5)
Uganda (1)
Ukraine (4)
United Kingdom (106)
United States (15)
Uruguay (1)
Uzbekistan (np)
Venezuela (5)
Vietnam (1)
Yugoslavia, Federal Rep. of (Serbia/Montenegro) (4)
Zambia (2)

Note: no abbreviation = ratification; np = not currently a Party; numbers in parentheses = sites listed under the Convention.

International Watercourses

The rationale for regulating international watercourses in the form of transboundary rivers, lakes, and reservoir is particularly strong. Nearly half of all the world's river basins are international, draining two or more countries, and no natural resource is more critical to public health and social and economic development than freshwater. Moreover, international watercourses create an intrinsic opportunity for nations or private interests to externalize costs, either through pollution or through unsustainable use. The need for effective regulation has become particularly acute in recent years, as the combined impact of agricultural demand, industrial development, and population growth is stretching water supplies to the limit. In regions where rainfall is sparse and river basins are shared, many commentators believe that disputes over water have the potential to cause armed conflict.

International Legal Regime

Although the need to regulate international watercourses has long been recognized and there is a large body of law on the subject, the quest to create universal legal principles has proven difficult. One general statement of principles can be found in Chapter 18 of *Agenda 21*, which sets out a series of program areas aimed at protecting the quality and supply of all freshwater resources. An explicit effort to establish a universal legal regime for shared freshwater is the Convention on the Law of the Non-navigational Uses of International Watercourses. It was approved in May 1997 by the UN General Assembly with 103 votes in favor and opened for signature. This Convention draws on a similar treaty, the United Nations/Economic Commission for Europe (UN/ECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes, which was negotiated among European countries and entered into force in 1996. Lastly, there are numerous separate agreements for specific lakes or river basins. In terms of financing, the Global Environment Facility(GEF) provides assistance for transboundary water projects and programs as part of its mandate to protect international waters.

Agenda 21 – Freshwater Resources

Chapter 18 of *Agenda 21* is entitled "Protection of the Quality and Supply of Freshwater Resources: Application of Integrated Approaches to the Development, Management and Use of Water Resources." A general statement of principles that applies to all freshwater, it sets out seven program areas for action. These are (1) integrated water resources development; (2) water resources assessment; (3) protection of water resources, water quality, and aquatic ecosystems; (4) drinking water supply and sanitation; (5) water and sustainable urban development; (6) water for sustainable food production and rural development; and (7) impacts of climate change on water resources. In the case of international watercourses, the chapter calls on "riparian States to formulate water resources strategies, prepare water resources action programs and consider, where appropriate, the harmonization of those strategies and action programs."

Convention on International Watercourses

The Convention on the Law of the Non-navigational Uses of International Watercourses remains open for signature until the year 2000 and requires ratification from 35 countries to enter into force. The Convention was negotiated "with the conviction that a framework convention will

ensure the promotion of the optimal and sustainable utilization" of international watercourses. It also states that countries along international watercourses "shall in their respective territories utilize an international watercourse in an equitable and reasonable manner."

To define the concept of "equitable and reasonable," the Convention states that "all relevant factors and circumstances" should be taken into account. These include "geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character," and "the social and economic needs of the watercourse States concerned." They also include "the effects of the use or uses of the watercourses in one watercourse State on other watercourse States" as well as "conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect." Finally, they include "the availability of alternatives, of comparable value, to a particular planned or existing use."

The Convention also states that countries "shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States." In the event such harm occurs, "the States whose use causes such harm shall...take all appropriate measures...to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation."

A key part of the Convention concerns notification of "planned measures" that are expected to alter the watercourse. It states, for example, that "before a watercourse State implements or permits the implementation of planned measures which have may have a significant adverse effect upon other watercourse States, it shall provide those States with timely notification. Such notification shall be accompanied by available technical data and information, including the results of any environmental impact assessment." The Convention stipulates that the notifying State must allow the notified State six months to study the information, (plus an additional six months if asked). During this period, the notifying State "shall not implement or permit the implementation of the planned measures without the consent of the notified States. In the event that Parties cannot resolve disagreements over planned measures, the Convention includes rules for an arbitration process.

The Convention also addresses the importance of reducing and preventing environmental abuses. It calls on Parties to take measures such as "setting joint water quality objectives and criteria and establishing techniques and practices to address pollution from point and nonpoint sources."

Agreements Based on Geography

In lieu of an international governing regime and because the characteristics of different river basins and lakes vary widely, as many as 2000 agreements have been negotiated to govern how countries manage specific freshwater resources. Some of the more prominent regional regimes for international watercourses govern the Danube, Indus, Niger, Plate, Rio Grande, and Zambezi Rivers, Lake Victoria, the North American Great Lakes, and the Aral Sea.

Science

Among the different program areas set out in *Agenda 21*, most involve the need for improved scientific understanding and research. In the case of "Water resources assessment," recent studies by UN agencies have found that many countries, especially in the developing world, do not have adequate programs in place in terms of meteorology, hydrology, and other sciences related to freshwater. Much also needs to be learned about "the impact of climate change on water resources." In the cases of "Protection of water resources, water quality and aquatic ecosystems" and "Drinking water supply and sanitation," some progress has been made. A clear success story is the improvement in the quality of drinking water, based on the development and implementation of drinking water guidelines and the use of chemical treatments and filters to fight water-borne diseases. Many countries have benefited from upgraded water quality standards, while water-quality monitoring programs have also made significant progress. Nonetheless, much remains to be done, particularly to improve sanitation.

Economics

As with most environmental issues, effective management of freshwater resources requires the use of economic tools and market mechanisms. In particular, countries must recognize that water is an economic good, which can be valued in the marketplace as a function of the demand that exists for competing uses. In this regard, *Agenda 21* states that "water users should be charged appropriately" and the Convention on International Watercourses states that "in absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses." The application of market principles to the use of water has proven quite successful in Chile, where water must be transported long distances from rainy southern regions to the progressively drier regions in the north. Meanwhile, efforts to create water markets in the Middle East hold great promise of reallocating water in that region from

countries with a water surplus to those with a water deficit, while reducing the potential for conflict. What works on a national level also works on the community level, where numerous projects have demonstrated that demand-driven measures to allocate and supply water do a better job of meeting people's needs than traditional, large-scale government projects. This is true in the case of projects to provide water that is used for consumption and sanitation as well as water that is used for irrigation.

Law

Despite the clear advantages of market-driven approaches to water allocation, reform has not come as quickly as it might, in either the developing or the developed world. In part, this slowness to reform may be explained by the legal theories that historically governed water use and in many cases still apply. According to an early theory of water use, countries exercised absolute sovereignty over the use of freshwater resources within their boundaries, regardless of what impact this might have on neighboring countries. This is known as the theory of absolute sovereignty. It is sometimes referred to as the Harmon Doctrine, named after a U.S. attorney general who asserted in 1895 that the United States had full legal right to pollute the Rio Grande on the border with Mexico. Another theory establishes water rights as a function of prior appropriation. Users of waters are guaranteed continued use in what might be called a first-come first-served system. Another theory, the opposite of the Harmon doctrine, asserts that downstream riparian countries have the right to full-flow of water of natural quality. None of these theoretical doctrines has drawn wide support as a generally applicable approach to water issues. Nonetheless, they have shaped how individual countries often view water issues. The fact that countries may once have viewed rivers through the lens of absolute sovereignty or of prior appropriation is likely to affect current practice, because countries are reluctant to renounce rights or practices that provide tangible economic benefits.

In recognition of the need to balance the interests of riparian States, customary and case law have established certain principles, which also underlie agreements such as the Convention on International Watercourses. The doctrine of *sic utere* is a common law maxim that states that one should not use one's property to injure others and is the basis of the influential 1957 *Lac Lanoux* decision between Spain and France. In that case, which involved the use of a transboundary river for a hydroelectric project, the court ruled that waters should be used equitably. The Court stated that "France is entitled to exercise her rights; she cannot ignore Spanish interests."

For further information

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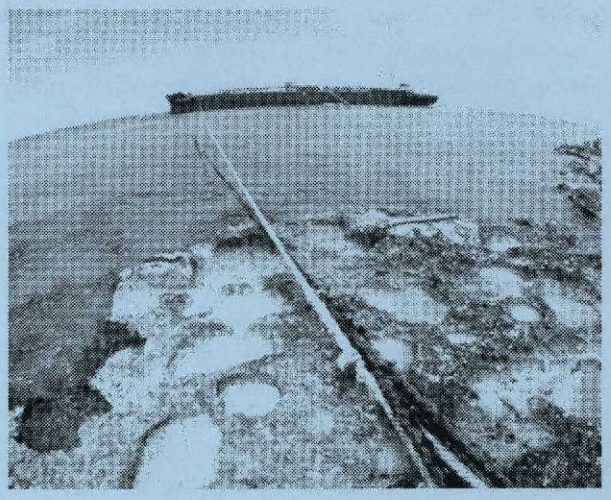
Countries That Voted in the UN General Assembly to Adopt the Convention on the Law on Non-navigational Uses of International Watercourses

Albania
Algeria
Angola
Antigua and Barbuda
Armenia
Australia
Austria
Bahrain
Bangladesh
Belarus
Botswana
Brazil
Brunei Darussalam
Burkina Faso
Cambodia
Cameroon
Canada
Chile
Costa Rica
Côte d'Ivoire
Croatia
Cyprus
Czech
Denmark
Djibouti
Estonia
Finland
Gabon
Georgia
Germany
Greece
Guyana
Haiti
Honduras
Hungary
Iceland
Indonesia
Iran, Islamic Rep. of
Ireland
Italy
Jamaica
Japan
Jordan
Kazakstan
Kenya
Korea, Rep. of
Kuwait
Lao People's Dem. Rep.
Latvia
Lesotho
Liberia
Libya
Liechtenstein
Lithuania
Luxembourg
Madagascar
Malawi
Malaysia
Maldives
Malta
Marshall Islands
Mauritius
Mexico
Micronesia, Federated States of
Morocco
Mozambique
Namibia
Nepal
Netherlands
New Zealand
Norway
Oman
Papua New Guinea
Philippines
Poland
Portugal
Qatar
Romania
Russian Federation
Samoa
San Marino
Saudi Arabia
Sierra Leone
Singapore
Slovakia
Slovenia
South Africa
Sudan
Suriname
Sweden
Syria
Thailand
Trinidad and Tobago
Tunisia
Ukraine
United Arab Emirates
United Kingdom
United States
Uruguay
Venezuela
Vietnam
Yemen, Rep. of
Zambia



Seas and Oceans

Ever since the publication in 1609 of *Mare Liberum*, the classic treatise by Hugo Grotius on maritime law, most countries at most times have acknowledged the principle of open access to the seas and oceans. Not surprisingly, a system based on this principle has created special problems, and much effort has gone into defining the limits of open access. Some of the earliest international treaties on the environment, dating back to the nineteenth century, regulate access to marine resources, and in the modern era, a high proportion of environmental treaties concern the use of seas and oceans. Nonetheless, marine pollution and other forms of marine degradation continue to worsen in many regions of the world, especially along coastal areas in both developed and developing countries, where population pressures are high. The importance of preserving and restoring the ecology of marine areas is one of the major environmental challenges facing the world community.

The most significant sources of marine pollution are land-based, including sewage, agricultural effluents, and fertilizer, which cause biological imbalances leading to such phenomena as algal blooms and red tides. These rob the water of necessary oxygen, thereby killing fish and other forms of marine life. Contamination from hazardous wastes and other chemicals, including pesticides and herbicides, is another form of land-based pollution that harms the marine environment. Ocean dumping, petroleum discharges from oil tankers and offshore rigs, and non-biodegradable plastics, including fishing nets, are other sources of marine pollution. Seas and oceans are also polluted from atmospheric sources, including incineration at sea. Unsustainable fishing and aquaculture pose further threats to the marine environment. Large drift nets and other techniques have endangered the viability of many marine species, while over-fishing has resulted in dramatic declines in particular stocks of fish. The use of dynamite and cyanide for fishing, along with other forms of environmental degradation, has also contributed to the destruction of ecologically sensitive coral reefs.

International Legal Regime

The most comprehensive international agreement on the marine environment is the United Nations Convention on the Law of the Sea (UNCLOS), which was adopted in 1982 and entered into force in 1994. The Convention, which took nine years to negotiate, brings together many separate sources of law, including customary law and other existing agreements, and establishes important new rules. UNCLOS makes an important contribution to the progressive development of international environmental law. There are 158 Signatories and 118 Parties to the Convention.

Regulating the Marine Environment

As part of a general obligation to preserve and protect the marine environment, UNCLOS articulates the role that countries are expected to play to prevent, reduce, and control pollution. It also mandates that "states shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution...does not spread beyond the areas where they exercise sovereign rights."

In recognition of the multiple sources of marine pollution, the Convention emphasizes that the measures enacted by countries "shall deal with all sources of pollution." These sources include "the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based

sources, from or through the atmosphere or by dumping," as well as "pollution from vessels," including "intentional and unintentional discharges." Other sources include "pollution from installations and devices used in exploration or exploitation of the natural resources of the sea-bed and subsoil" and "pollution from other installations and devices operating in the marine environment."

International Rules and Minimum Standards

A key characteristic of UNCLOS is that rather than stipulating specific rules and regulations on different kinds of marine pollution, it makes reference to international law outside the Convention. In the case of pollution from ship vessels, for example, the Convention states that countries shall adopt laws and regulations that "at least have the same effect as that of generally accepted international rules and standards established through the competent international organization or general diplomatic conference." Because these standards were established by the International Maritime Organization and were adopted in the 1973/1978 International Convention for the Prevention of Pollution from Ships (MARPOL) Convention, UNCLOS had the effect, most commentators believe, of imposing these standards on all Parties to UNCLOS, whether or not they are Parties to MARPOL. Similar logic applies in the case of dumping, for which UNCLOS states that "national laws, regulations and measures shall be no less effective in preventing, reducing and controlling such pollution than the global rules and standards." In this case, UNCLOS would appear to invoke the 1972 London Convention on Dumping.

However, the progressive nature of UNCLOS in the area of pollution from ship vessels or from dumping (as well as sea-bed activities) does not carry over to pollution from land-based sources, which comprises the most significant danger to the marine environment. The Convention says that "States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources...*taking into account* [italics added] internationally agreed rules, standards and recommended practices and procedures." The Convention uses similar language in the section on atmospheric pollution.

Conservation of Living Resources

Along with the goal of controlling pollution, the Convention seeks to promote the conservation of living resources. It states that countries should "protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life." It also calls on countries to cooperate "with a view to the conservation of marine mammals." Furthermore, the Convention states that coastal states "shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation." As part of the effort to preserve fishing stocks, a supplemental agreement has also been negotiated. It is entitled "Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks."

Regional Seas Programme

An important precursor of UNCLOS was the Regional Seas Programme, created in 1974 under the auspices of the United Nations Environment Programme (UNEP). The significance of the Regional Seas Programme has been twofold: it has promoted the creation of international environmental law at the regional level, and it has implemented numerous Action Plans which have helped mitigate or eliminate degradation of the marine environment. The Regional Seas Programme encompasses 13 regions around the world. More than 140 countries and territories participate. The 13 Action Plans cover the Mediterranean, Kuwait (the Arabian Gulf), West and Central African, Caribbean, East Asian Seas, Red Sea and Gulf of Aden, South Pacific, Eastern African, South Asian Seas, Northwest Pacific, and Black Sea.

Science

As with all environmental concerns, myriad scientific issues pertain to the seas and oceans. One area with obvious significance is the biology of fisheries, which have come under severe stress from pollution and from mismanagement. Attempts to restore depleted fish populations require greater understanding of the many factors that affect fish populations, including spawning and migratory patterns. Decisions about fish quotas and the concept of maximal sustainable yield must be based on sound scientific knowledge.

Another area for which scientific assessment will be important concerns coral reefs crucial habitats for many marine species. Coral reefs have been severely damaged in many regions, and they face the possibility of more severe damage in the future, both from continued pollution and from warmer sea temperatures, which could be brought about by climate change. In particular, the process of coral bleaching is not fully understood.

Economics

A leading cause of over-fishing is the availability of subsidies to the fishing industry. Often these support long-range fishing fleets from developed countries and those with rapidly emerging economies, which pay for the right to exploit the fisheries within the 200-mile Exclusive Economic Zones (EEZs) of developing countries. The situation is exacerbated as fisheries are pushed beyond their limits, and the industry becomes less profitable, often switching from higher-valued species to those with limited commercial value except as fish meal or fertilizer. Reductions in fishing subsidies would, therefore, be a win-win for both the economy and the environment.

Another issue that affects the marine environment and has economic implications is the debate over best practices and cost-benefit analysis. Proponents of best practices argue that the public is better served when regulation establishes specific criteria on what technology to use, whereas proponents of cost-benefit analysis argue that their approach promotes greater efficiency. All sides agree, however, that cost-benefit analysis is less useful when information is not adequate, which is often the case with the marine environment. For its part, UNCLOS states that Parties should use the "best practicable means at their disposal."

Law

The key challenge that faced the UNCLOS negotiators was that maritime regions possess characteristics that are both global and national. For example, although people do not "settle" on the seas or oceans, coastal areas have many linkages to coastal states in the form of economic activities or through geography, most notably rivers. The singular achievement of UNCLOS was to fashion a regime that reflects the hybrid nature of seas and oceans. UNCLOS granted countries significantly greater sovereignty over their coastal waters, notably the 200-mile EEZ, thus establishing more effective incentives for sound environmental management. For the high seas, it guarantees freedom of access for both navigation and fisheries, while for sea-beds, it establishes a global authority whose responsibilities include environmental protection. Port-state jurisdiction, an important innovation of UNCLOS, combines national and global jurisdiction by allowing port states to enforce rules against environmental damage to the oceans, no matter where it occurs, when a ship voluntarily enters a country's port.

For further information

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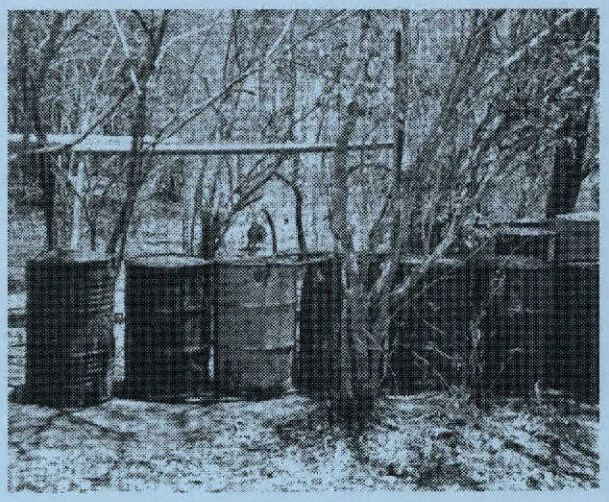
Signatories and Parties to the Convention (not including subsequent Agreements) (as of July 1997)

Afghanistan (np)
Algeria (w)
Angola (w)
Antigua and Barbuda
Argentina (w)
Australia
Austria (w)
Bahamas
Bahrain
Bangladesh (np)
Barbados
Belarus (np)(w)
Belgium (np)(w)
Belize
Benin (np)
Bhutan (np)
Bolivia (w)
Bosnia and Herzegovina
Botswana
Brazil (w)
Brunei Darussalam
Bulgaria
Burkina Faso (np)
Burundi (np)
Cambodia (np)
Cameroon
Canada (np)
Cape Verde (w)
Cent. African Rep. (np)
Chad (np)
Chile (np) (w)
China (w)
Colombia (np)
Comoros
Congo, Dem. Rep. of
Congo, Rep. of (np)
Cook Islands
Costa Rica (w)
Côte d'Ivoire
Croatia (w)
Cuba (w)
Cyprus
Czech
Denmark (np)
Djibouti
Dominica
Dominican Rep. (np)
Egypt, Arab Rep. of (w)
El Salvador (np)
Equatorial Guinea
Ethiopia (np)
European Community (np) (w)
Fiji
Finland (w)
France (w)
Gabon (np)
Gambia
Georgia
Germany (w)
Ghana
Greece (w)
Grenada
Guatemala (w)
Guinea (w)
Guinea-Bissau (w)
Guyana
Haiti
Honduras
Hungary (np)
Iceland (w)
India (w)
Indonesia
Iran, Islamic Rep. of (w) (np)
Iraq (w)
Ireland (w)
Italy (w)
Jamaica
Japan
Jordan
Kenya
Korea, Dem. People's Rep. of (np)
Korea, Rep. of
Kuwait (w)
Lao People's Dem. Rep. (np)
Lebanon
Lesotho (np)
Liberia (np)
Libya (np)
Liechtenstein (np)
Luxembourg (np) (w)
Macedonia, former Yugoslav Rep. of
Madagascar (np)
Malawi (np)
Malaysia (w)
Maldives (np)
Mali (w)
Malta (w)
Marshall Islands
Mauritania
Mauritius
Mexico
Micronesia, Federated States of
Monaco
Mongolia
Morocco (np)
Mozambique
Myanmar
Namibia
Nauru
Nepal (np)
Netherlands (w)
New Zealand
Nicaragua (np) (w)
Niger (np)
Nigeria
Niue (np)
Norway (w)
Oman (w)
Pakistan (w)
Palau
Panama (w)
Papua New Guinea
Paraguay
Philippines (w)
Poland (np)
Portugal (np)
Qatar (np) (w)
Romania (w)
Russian Federation (w)
Rwanda (np)
St. Kitts and Nevis
St. Lucia
St. Vincent and the Grenadines
Samoa
São Tomé and Principe (w)
Saudi Arabia (w)
Senegal
Seychelles
Sierra Leone
Singapore
Slovak Rep.
Slovenia (w)
Solomon Islands
Somalia
South Africa (np) (w)
Spain (w)
Sri Lanka
Sudan (w)
Suriname (np)
Swaziland (np)
Sweden (w)
Switzerland (np)
Tanzania (w)
Thailand (np)
Togo
Tonga
Trinidad and Tobago (np)
Tunisia (w)
Tuvalu (np)
Uganda
Ukraine (np) (w)
United Arab Emirates (np)
Uruguay (w)
Vanuatu (np)
Vietnam (w)
Yemen, Rep. of (w)
Yugoslavia, Fed. Rep. of (Serbia/Montenegro) (w)
Zambia
Zimbabwe

Note: no abbreviation = ratification; np = not currently a Party; w = with declaration or understanding.



Hazardous Wastes

Starting in the late 1970s, public concern over hazardous wastes set in motion an international chain reaction that led first to stricter domestic regulation, then to unchecked world trade, and finally to stricter international regulation. The process began in industrial countries, notably the United States, where scandals erupted after it was discovered that hazardous wastes had been dumped in residential neighborhoods. New laws were passed that raised the cost of disposal, while heightened sensitivities made it harder to find suitable sites. In response to these new pressures, generators of hazardous wastes began exporting to countries whose regulatory systems were weak or nonexistent. This international commerce soon came under criticism, notably from developing countries, where the wastes were often destined, and from environmental NGOs.

International Legal Regime

In the context of increasing trade in hazardous wastes, but also opposition to that trade, countries negotiated the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes. The Convention was opened for signature in 1989 and entered into force in 1992. It is the most comprehensive international agreement on hazardous wastes and spurred several supplementary agreements. There are 53 Signatories and 114 Parties to the Convention.

Like CITES (see Endangered Species), the Basel Convention was negotiated on the premise that regulating trade is a first-best response when stricter domestic solutions may not be immediately feasible. The preamble expresses the hope that "enhanced control of transboundary movement of hazardous wastes and other wastes will act as an incentive for their environmentally sound management." The Convention also states that "hazardous wastes and other wastes should, as far as is compatible with environmentally sound and efficient management, be disposed of in the State where they were generated."

Along with the Basel Convention, other stricter agreements have been reached on a regional basis. Under the Lomé Convention between the European Community (EC) and Africa-Caribbean-Pacific (ACP), trade in hazardous wastes was banned (with limited exceptions) starting in 1991. The 1991 Bamako Convention among African countries bans imports of hazardous wastes. In 1995 the Parties to the Basel Convention itself agreed to ban all hazardous wastes for the purposes of disposal in the case of wastes coming from OECD countries, the European Union, or Liechtenstein. As of the end of 1997, this ban is intended to include all exports of hazardous wastes intended for reuse or recycling. To date, however, the amendment has yet to enter into force.

Defining Hazardous Waste

A major challenge facing any effort to regulate hazardous wastes is determining what should be regulated. The Basel Convention uses several criteria to arrive at this determination.* Annex I to the Convention establishes "Categories of Wastes to Be Controlled." Examples include "wastes from the production, formulation and use of organic solvents" and "wastes from heat treatment and tempering operations containing cyanides." A subheading under

* In spite of these efforts, controversy exists as to the definition of certain recyclables.

Annex I includes wastes having specific constituents, such as "cadmium; cadmium compounds" or "mercury: mercury compounds." Annex II includes "Categories of Wastes Requiring Special Consideration." These categories refer to household wastes and incinerated residues. Annex III establishes a "List of Hazardous Characteristics." Examples include substances that are explosive or infectious. Under the Convention, all wastes in Annex I are subject to regulation, unless they do not possess any of the characteristics contained in Annex III. Wastes that come under Annex II are also subject to regulation. Finally, each Party to the Convention is required to inform the Secretariat of any other wastes "considered or defined as hazardous under its national legislation."

Notification and Consent

The regulatory system established by the Basel Convention is based on notification and consent.** The State of export is required to notify the State of import of "any proposed transboundary movement or hazardous wastes or other wastes." Notification documents must be in a language acceptable to the State of import. Once proper notification has been given, the State of import "must respond to the notifier in writing," and in all cases, countries have the sovereign right to reject any wastes that come under the Convention's jurisdiction.

To prevent improper management of hazardous wastes when they enter the State of import, the Convention also stipulates the State of export must obtain "confirmation of the existence of a contract between the exporter and the disposer specifying environmentally sound management of the wastes in question." Finally, in no case can a Party send or receive wastes with respect to a non-Party, although wastes can be sent in transit through a non-Party with proper notification.

Enforcing the Convention

To ensure that the commitments are carried out, the Convention stipluates that "each Party shall take appropriate legal, administrative and other measures to implement and enforce the provisions of this Convention, including measures to prevent and punish conduct in contravention of the Convention." It further states that "the Parties consider that illegal traffic in hazardous wastes or other wastes is criminal." The Convention provides for verification procedures. It states, that "any Party which has reason to believe that another Party is acting or has acted in breach of its obligations under this Convention may inform the Secretariat thereof, and in such an event, shall simultaneously and immediately inform, directly or through the Secretariat, the Party against whom the allegations are made."

Cooperation among Parties

The Convention calls for international cooperation to help countries improve how they manage hazardous wastes. It states that Parties should share information aimed at the "harmonization of technical standards and practices" and that Parties "shall co-operate in developing the technical capacity among Parties." The Convention also calls for "training and technology transfers," but it does not establish specific funding streams. Instead, it says "the Parties shall decide on the establishment of appropriate funding mechanisms of a voluntary nature."

Science

Science and technology are critical in the effort to control hazardous wastes. First, all regulatory efforts are contingent on scientific analysis of the risks that specific hazardous wastes pose to human health and ecosystems. Because many kinds of hazardous wastes have not been adequately studied and new chemicals are being invented continuously, the need for scientific analysis is permanent and ongoing. Second, science and technology are necessary to find safer ways to dispose of wastes and clean up those that were not properly disposed of the first time. And third, scientific research is necessary to reduce the hazardous waste stream by promoting more efficient production methods.

The ways in which countries dispose of hazardous wastes create special dilemmas, and depending on circumstances, different approaches will be preferred. In countries in which land is plentiful, the use of landfill or similar approaches remains more common, although in general, countries are trying to move away from such solutions, which, among other risks, can endanger the water supply. Chemical treatments are another means of hazardous waste disposal but create voluminous amounts of sludge, which themselves must be disposed of. Another policy issue is whether to establish more centralized or decentralized treatment facilities. Large treatment centers for hazardous wastes can improve efficiency but may also increase the risks associated with storage and transportation. Land-based incineration of hazardous wastes is another option, but this is not recommended in countries in which regulatory regimes are weak and incinerators may

** This system is superseded in cases in which countries have agreed to ban trade in hazardous wastes.

not be well maintained. Other forms of hazardous waste disposal, incineration at sea and ocean dumping, harm seas and oceans. In both cases, new restrictions have sought to reduce these forms of disposal (see Seas and Oceans).

Economics

A key principle that underlies the effort to control hazardous wastes is the "polluter pays" principle (PPP). As originally articulated by the OECD, this principle states that "the polluter should bear the expenses of...measures decided by the public authorities to ensure that the environment is in an acceptable state." These expenses are captured either through enforcement mechanisms that require polluters to clean up hazardous wastes or through litigation that seeks to recover the costs that governments bear in cleaning up the wastes. In a promising reformulation of the PPP, Denmark and the Netherlands have "upstreamed" the costs of pollution by imposing taxes on the hazardous materials themselves. Such taxes are designed to encourage more efficient use and production of hazardous materials.

Because the PPP represents an explicit effort to internalize the social costs of pollution, it has particular appeal to economists and policymakers. Nonetheless, it has not been universally embraced in the international community. In the 1987 *U.S. Superfund* case, for example, which looked at the use of border tax adjustments to pay for hazardous waste clean-up, the GATT said that countries could follow the PPP for tax adjustment purposes but were not obliged to do so. At the 1992 Rio Earth Summit, objections to broad interpretations of the PPP led to compromise language that stated that "the polluter should, in principle, bear the costs of pollution, with due regard to the public interests and without distorting international trade and investment."

Law

Liability and compensation are important legal issues in the area of hazardous wastes, and the Basel Convention commits Parties to achieve agreement on how these issues should be handled. An "Ad Hoc Working Group of Legal and Technical Experts" has been meeting on these issues since 1990 but has not finished its work. Because progress on liability and compensation as they affect other areas of environmental law has been sluggish, this may not be surprising. In particular, countries have grown skittish in the area of state liability, for which the potential costs of compensation could be extremely high. An additional unresolved issue in the area of hazardous waste concerns the requirement, as stated in the Convention, that transboundary movements of hazardous waste be insured. Lastly, agreement has not been reached on a proposed fund to pay for emergency measures that may become necessary in relation to the dangers caused by hazardous wastes.

For further information

Secretariat of the Basel Convention (SBC)
Geneva Executive Center
15 chemin des Anémones, Building D
1219 Châtelaine
Geneva, Switzerland
Tel: 41-22/ 979-9111
Fax: 41-22/797-3454
Website: http://www.unep.ch/sbc

Signatories and Parties to the Convention, (as of July 1997)

Afghanistan (np)
Antigua and Barbuda
Argentina
Australia
Austria
Bahamas
Bahrain
Bangladesh
Barbados
Belgium
Belize
Bolivia
Brazil
Bulgaria
Burundi
Canada
Chile (w)
China
Colombia (w)
Comoros
Congo, Dem. Rep. of
Costa Rica
Côte d'Ivoire
Croatia
Cuba (w)
Cyprus
Czech
Denmark (w)
Ecuador (w)
Egypt, Arab Rep. of
El Salvador
Estonia
European Community
Finland
France
Germany (w)
Greece
Guatemala
Guinea
Haiti (np)
Honduras
Hungary
Iceland
India
Indonesia (w)
Iran, Islamic Rep. of
Ireland
Israel
Italy (w)
Japan (w)
Jordan
Korea, Rep. of
Kuwait
Kyrgyz Rep.
Latvia
Lebanon (w)
Liechtenstein
Luxembourg
Macedonia, former Yugoslav Rep.of
Malawi
Malaysia
Maldives
Mauritania
Mauritius
Mexico (w)
Micronesia, Federated States of
Monaco
Mongolia
Morocco
Mozambique
Namibia
Nepal
Netherlands
New Zealand
Nicaragua
Nigeria
Norway (w)
Oman
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Poland (w)
Portugal
Qatar
Romania (w)
Russian Federation (w)
St. Kitts and Nevis (w)
St. Lucia
St. Vincent and the Grenadines
Saudi Arabia
Senegal
Seychelles
Singapore (w)
Slovak Rep.
Slovenia
South Africa
Spain (w)
Sri Lanka
Sweden
Switzerland
Syrian Arab Rep.
Tanzania
Thailand (np)
Trinidad and Tobago
Tunisia
Turkey
Turkmenistan
United Arab Emirates
United Kingdom (w)
United States (np)
Uruguay (w)
Uzbekistan
Venezuela (np) (w)
Vietnam
Yemen, Rep. of
Zambia

Note: no abbreviation = ratification; np = not currently a Party; w = with declaration or understanding.

FIFTH ANNUAL
WORLD BANK CONFERENCE
ON ENVIRONMENTALLY
AND SOCIALLY SUSTAINABLE
DEVELOPMENT

OCTOBER 6–7, 1997
WASHINGTON, DC

REGIONAL SUMMARIES OF THE WORLD BANK GROUP'S PROJECTS ADDRESSING GLOBAL ECOSYSTEM CHALLENGES

AFRICA

EAST ASIA AND THE PACIFIC

EUROPE AND CENTRAL ASIA

LATIN AMERICA AND THE CARIBBEAN

MIDDLE EAST AND NORTH AFRICA

SOUTH ASIA

Please note that the attached regional summaries represent the most recent project data as of the printing date, August 27, 1997, or as otherwise indicated. Final Fiscal 1997 data, including Category A projects, will be available in the Fall 1997 issue of *Environment Matters*.

World Bank Group
Portfolio of Projects to Protect the Environment

Active during Fiscal 1997

The following table lists projects with primarily environmental objectives that were approved by the World Bank Group's Board of Executive Directors between July 1, 1985 and June 30, 1997 (FY86 – 97), all of which were under implementation during FY97 (July 1, 1996 through June 30, 1997). Each project listing indicates whether the project is being financed through an International Bank for Reconstruction and Development (IBRD) loan, an International Development Agency (IDA) credit, or both; the fiscal year (July-June) in which the project was approved; the task manager; the Bank's financial contribution; the total estimated project cost; and the country's implementing agency. The difference between Bank's commitment and total project cost is financed by domestic public, multilateral, bilateral, and/or nongovernmental organization (NGO) sources.

IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Africa

Angola

Lobito-Benguela Urban Environment Rehabilitation (Approved FY92)

$46 million, IDA
$59 million, total project cost

Implementing Agency: Province of Benguela

Task Manager: Morrell

This project's main objectives are to restore water supply and sanitary services; help in eliminating life-threatening epidemics; improve the health of the population; and halt the degradation of the physical environment. The project will also improve living conditions in squatter settlements by providing access to clean water and improved latrines; strengthen institutions responsible for project management, operation management and control of urban services and the environment by providing technical assistance, logistical support, and training; and assist in policy reform through water and sewer tariffs, land registration, and environmental studies.

Benin

Natural Resources Management (Approved FY92)

$14 million, IDA
$24 million, total project cost

Implementing Agency: Ministry of Rural Development

Task Manager: Topa

This project combines institution-building activities on a national level with site-specific field activities of three types: management of three gazetted forests; watershed development at four pilot sites including land tenure operations and research-development activities; and wildlife management at two pilot sites on the border of the national parks and hunting areas.

Benin

Environmental Management (Approved FY95)

$8 million, IDA
$9 million, total project cost

Implementing Agency: National Environmental Agency (NEA)

Task Manager: Lewis

Support for this project allows the government to develop the national environmental management capacity required to implement and monitor effectively the priority actions identified in the National Environmental Plan (June 1993). It supports planning and implementation of policies and programs; development of information systems; and promotion of the integration of environmental concerns in socioeconomic development plans. In addition, it seeks to improve the awareness and understanding of environmental issues of various segments of the population and fosters the integration of environmental considerations in the education system.

Burkina Faso

Environmental Management (Approved FY91)

$17 million, IDA
$25 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Lewis

This project seeks to reverse the process of natural resources degradation in order to secure sustainable agricultural growth, restore biodiversity, and manage forests and wildlife. The first five-year phase of a long-term national program, it would identify, design and implement community land management plans in two components in three provinces located in different ecological zones, and in two provinces for protected forest areas and the lands of surrounding communities. Supporting components include: technical support for ongoing natural resources management operations in 18 provinces; establishment of national environmental and project impact monitoring systems; human resources development; and management and studies.

* Listing of FY97 projects is not yet completed; certain FY97 projects listed here may not be included in the final list.

IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Burkina Faso

Urban Environment (Approved FY95)

$37 million, IDA
$40 million, total project cost

Implementing Agency: Ministry of Public Works, Housing and Urban Planning; Office National de l'Eau et de l'assainissement

Task Manager: Diou

This project provides for the rehabilitation or improvement of priority primary drainage networks, the development of piped sewerage and on-site sanitation, the closing or upgrading of existing landfills and construction of new landfills, and the improvement of current toxic and industrial solid waste management systems. The project also aims to strengthen the central government's capacity for urban management.

Burundi

Energy Sector Rehabilitation (Approved FY91)

$23 million, IDA
$23 million, total project cost

Implementing Agency: Ministry of Energy/Rigie de Distribution d'eau et d' electricite (REGIDESO)

Task Manager: Senou

The objectives of the project are to promote rational energy policies and the efficient management of energy resources. Specifically, the project aims to: improve energy efficiency through reforms in the pricing structure of electricity, petroleum products and woodfuels; develop efficient institutions in the sector and improve the quality of public investment; expand access to electricity; and support charcoal efficiency and improved stove programs.

Central African Republic

Natural Resource Management (Approved FY90)

$19 million, IDA
$34 million, total project cost

Implementing Agency: Forest Ministry

Task Manager: Heimo

The main objective of the project, which will constitute the first phase of a longer-term program, is to reinforce capabilities to protect and manage forest and wildlife resources on a sustainable basis, mainly through further improvements in the legislative framework and fiscal/incentive system for the relevant sector; restructuring of institutions and strengthening of their capacity to effectively implement field controls and promote environmental protection; improving upon knowledge of existing forest resources, as a basis for sound planning; improving upon agro-forestry systems in the forest zone; and support to the protection and management of a dense forest reserve.

Gabon

Forestry and Environment (Approved FY93)

$23 million, IBRD
$38 million, total project cost

Implementing Agency: Ministry of Forestry/Ministry of Environment

Task Manager: Valencia

This project represents the first phase of a long-term effort toward promoting the rational use of the natural resource base. It aims to restructure and strengthen the capacity of the Ministry of Waters and Forestry and the Ministry of Environment for planning, monitoring, and supervision; make forestry and environment training more applicable to private sector and conservation needs; support forestry and environment research activities; prepare and implement a management plan in the depleted coastal zone area; and support government creation and maintenance of wildlife reserves.

* Listing of FY97 projects is not yet completed; certain FY97 projects listed here may not be included in the final list.

IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Gambia

Capacity Building for Environmental Management-Technical Assistance (Approved FY94)

$3 million, IDA
$5 million, total project cost

Implementing Agency: National Environmental Agency

Task Manager: Powers

This project aims to develop an effective system for environmental planning and management within the National Environmental Agency (NEA) and other relevant agencies. It supports the institutional and policy development of the Gambia Environmental Action Plan; development of a public awareness strategy; electronic and print media campaigns; an environmental information and monitoring system; and development of a disaster awareness and contingency planning system.

Ghana

Forest Resource Management (Approved FY89)

$39 million, IDA
$65 million, total project cost

Implementing Agency: Ministry of Lands and Natural Resources (MLNR)

Task Manager: Epworth

The project is a policy reform, management strengthening and institution building operation aimed at: managing industrial forestry production and export earning in accordance with sustained yield policy; promoting conservation and tree planting on farms to counteract fuelwood shortage and ecological deterioration; and strengthening the sector institutions to enable them to carry out the necessary policy reforms, increase revenue generation, and improve protection and management of the forest and wildlife resources.

Ghana

Environment Resource Management (Approved FY93)

$18 million, IDA
$36 million, total project cost

Implementing Agency: Environmental Protection Council (EPC)

Task Manager: Epworth

This project supports implementation of the National Environmental Action Plan (NEAP) by strengthening institutional and technical capabilities for effective environmental monitoring, policy formulation, and coordination. It includes the development of an Environmental Resource Management System for central and regional coordination, regulatory, and tenurial functions; the development of methodologies to minimize land degradation through community planning and management; and the demarcation and management of five coastal wetlands sites (including inventory, monitoring, public education programs, and studies).

Kenya

Forestry Development (Approved FY91)

$20 million, IDA
$65 million, total project cost

Implementing Agency: Government of Kenya

Task Manager: Ryan

The objective of the project is to conserve and protect indigenous forest resources, soil, and water on forest, farm and range land; provide technical assistance in forestry extension and integrated agroforestry farming systems; prepare a forestry development master plan; and strengthen planning and implementation capacities of forestry agencies.

* Listing of FY97 projects is not yet completed; certain FY97 projects listed here may not be included in the final list.

IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Kenya

Protected Areas and Wildlife Services (Approved FY92)

$61 million, IDA
$143 million, total project cost

Implementing Agency: Wildlife Service

Task Manager: Kiss

This project comprises the development of Kenyan Wildlife Services's (KWS) institutional capacity through material support, technical assistance, and a staff training program; rehabilitation of park and reserve infrastructure; establishment of a Community Wildlife Program; expansion of the wildlife education program; strengthening of KWS's planning capacity by financing the preparation of integrated five-year development plans for regional wildlife parks and reserves; preparation of a national wetlands master plan and technical assistance to improve management of marine parks and reserves; revitalization of KWS's scientific research; and maintenance of the effectiveness of the Wildlife Protection Unit by financing vehicles and facilities.

Kenya

Lake Victoria Environment (Approved FY97)

$12.8 million, IDA
$12.8 million, total project cost

Implementing Agency: Ministry of Environment and Natural Resources

Task Manager: Donovan

The Lake Victoria Environmental Management Project (LVEMP) is a comprehensive program aimed at the rehabilitation of the lake ecosystem for the benefit of the people who live in the catchment, the national economies of which they are a part, and the global community. The program objectives are to maximize the sustainable benefits to riparian communities from using resources within the basin to generate food, employment and income supply safe water, and sustain a disease free environment; and conserve biodiversity and genetic resources for the benefit of the riparian communities and the global community. In order to address the tradeoffs among these objectives which cut across national boundaries, a further project objective is to harmonize national management programs in order to achieve, to a maximum extent possible, the reversal of increasing environmental degradation.

Madagascar

Environment Program (Approved FY90)

$26 million, IDA
$86 million, total project cost

Implementing Agency: Ministries of Economy and Planning, Livestock, Fisheries and Forests, Agriculture, and Scientific Research.

Task Manager: Simeon

This program aims to: protect and manage the most threatened biodiversity and natural ecosystems, and develop surrounding areas; support soil conservation, agroforestry, reforestation and rural development; support mapping and the establishment of a geographic information system; establish clear boundaries for protected areas and improve land security through titling; provide environmental training, education, and awareness; encourage research on land, coastal and marine ecosystems; and support institutional building, establishing EA procedures, strengthening an environmental database, monitoring and evaluation procedures, and studies.

Madagascar

Antananarivo Plain Development (Approved FY90)

$31 million, IDA
$69 million, total project cost

Implementing Agency: Government/Ministry of Agriculture, Faritany (Province) and Municipality of Antananarivo

Task Manager: Wildt

This project finances the improvement of the living conditions of the low-income population in the low-lying areas of Antananarivo and Antananarivo Plain, and increases the productivity of the industries and of the farms in the plain. The project includes: flood protection along the Ikopa River; flood warning systems; drainage structures on the plain; a pumping station to evacuate water from the plain; construction of an irrigation canal; rehabilitation of irrigation systems; rehabilitation and expansion of the sewerage system; and institution building, including privatization of municipal services.

* Listing of FY97 projects is not yet completed; certain FY97 projects listed here may not be included in the final list.

IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Madagascar

Environment II Project (Approved FY97)

$30 million, IDA
$155 million, total project cost

Implementing Agency: National Environment Office

Task Manager: Simeon

This project provides financing to continue activities in soil conservation and biodiversity conservation, and pilot operations in marine and urban environment.

Malawi

Fisheries Development (Approved FY91)

$9 million, IDA
$16 million, total project cost

Implementing Agency: Department of Fisheries

Task Manager: Kumar

This project increases fish production as a means of improving nutrition and protein supply for the population; generates additional off-farm employment and income to help reduce poverty among women and the rural population; conserves the natural resource base of Malawi's water bodies and prevents environmental degradation; improves the institutional capacity for fisheries sub-sector policy formulation, research, planning, monitoring and control; improves management and conservation of lake resources; strengthens regulatory capacity of the fisheries department; and establishes a lake resources management program.

Malawi

Environmental Management Project (Approved FY97)

$12.4 million, IDA
$13.7 million, total project cost

Implementing Agency: Ministry of Research and Environmental Affairs, Ministry of Natural Resources, Ministry of Transport

Task Manager: Clement-Jones

This project is designed to support the Government of Malawi's efforts to implement their Environmental Support Program (ESP), which aims to integrate environmental concerns into the socioeconomic development of the country. The ESP is intended to support the umbrella framework incorporating strategies, policies and priority programs to address environmental problems.The major components of this project include institutional capacity building and the strengthening of an environmental information system, environmental education, community-based environmental management and environmental actions and studies. An important design element is the gradual transfer of the management of natural resources to local communities, which has been tried on a pilot basis in parts of the country.

Mali

Natural Resource Management (Approved FY92)

$20 million, IDA
$32 million, total project cost

Implementing Agency: Ministry of Environment, Rural Development & Livestock

Task Manager: Hall

This project provides for village-level investments to halt degradation of soil, water, and natural vegetation; establishes infrastructure with immediate and direct impact on the communities' quality of life; modifies the boundaries of the Baoule National Park and implements its long-term management plan; supports government services to help villagers manage community natural resources; and supports the newly created Planning, Monitoring and Evaluation Department within the Ministry of Agriculture, Livestock and Environment in establishing an environmental information system.

* Listing of FY97 projects is not yet completed; certain FY97 projects listed here may not be included in the final list.

IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Mauritania

Water Supply (Approved FY92)

$11 million, IDA
$15 million, total project cost

Implementing Agency: National Society of Electricity (SONELEC)

Task Manager: Jannssens

This project includes the monitoring of salt water intrusion in the Trarza aquifer and a study to establish a groundwater management plan for the new Tenadi wellfield, further from the advancing saline front; a program for leak detection; a repair and rehabilitation program of the distribution network; upgrading of the existing installations; an extension of the distribution system to the northern part of the town in order to supply some of the poorest parts of the population with water; and studies and technical assistance to prepare future parts of the program.

Mauritania

Rainfed Natural Resource Management (Approved FY97)

$14 million, IDA
$23.5 million, total project cost

Implementing Agency: Ministry of Rural Development and Environment (MDRE)

Task Manager: Hall

The project would be the first five-year section of a long-term natural resource management program, aimed at the rehabilitation of land, water and vegetation; and, consequently, the improved production, increased income and better quality of life for communities in nine regions participating in the program. Components include the allocation of funds for community investments, the provision of technical support and strengthening of the institutional environment, the generation and dissemination of appropriate technologies, and the development of required skills at all levels.

Mauritius

Environmental Monitoring and Development (Approved FY91)

$12 million, IBRD
$21 million, total project cost

Implementing Agency: Government of Mauritius

Task Manager: De Naurois

This project initiates a national physical development plan to guide land use, infrastructure investment, and environmental management; establishes laboratories and an industrial park with industrial pollution control; develops a solid waste management plan; supports integrated pest management; encourages marine conservation; and creates a national park.

Niger

Energy (Approved FY88)

$32 million, IDA
$79 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Floor

The project promotes firewood conservation, substitution of energy resources and more effective management of natural forest cover. It also promotes the development of renewable energy technologies and the conservation of electric power; provides electricity at minimal cost; and upgrades local capabilities to administer petroleum exploration.

* Listing of FY97 projects is not yet completed; certain FY97 projects listed here may not be included in the final list.

IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Niger

Natural Resources Management (Approved FY96)

$26.7 million, IDA
$42.2 million, total project cost

Implementing Agency: Minister de l'Agriculture et de l'Elevage

Task Manager: Topa

This project is the first in a series designed to stop and reverse current natural resource degradation. This will help secure sustainable agricultural production and growth in the region, and improve living conditions of the rural population. Selected rural communities in different agro-ecological zones will be provided with skills training and resources during the project's design and implemention. The Government will also be able to build up its national capacity to support natural resource management initiatives and design a comprehensive set of national policies and strategies.

Nigeria

Environmental Management (Approved FY92)

$25 million, IDA
$38 million, total project cost

Implementing Agency: Ministry Hacienda, Ministry of Agriculture

Task Manager: Swayze

The project aims to strengthen Nigerian environmental organizations, and assists them in implementing their programs; establishes a program of data collection that enables the government to measure levels of environmental degradation, and be aware of environmental trends over time; and completes a series of sector investigations and feasibility studies leading to soundly conceived programs (including capital investments) necessary to redress the prevailing degradation of the nation's environment.

Senegal

Sustainable and Partcipatory Energy Management (Approved FY97)

$4.7 million, IDA
$4.7 million, total project cost

Implementing Agency: Ministry of Environment and Protection of Nature; Ministry of Industry and Energy

Task Manager: Utria

The project seeks to meet the increasing urban demand for household fuels, without the loss of forest cover and the ecosystem's carbon sequestration potential and biodiversity. This objective would be met through implementing and monitoring 300,000 hectares of enviornmentally sustainable forest resource systems managed by the communities; promoting private sector inter-fuel substitution and private sector and NGO-based improved stoves initiatives; and strengthening the institutions managing the sector, and promoting the civil society's participation in sector management.

Seychelles

Environment and Transport (Approved FY93)

$5 million, IBRD
$7 million, total project cost

Implementing Agency: Ministry of Environment, Economic Planning, and External Relations; Seychelles Island

Task Manager: Teymourian

This project aims to improve the basis for sustained growth of tourism while preserving or restoring environmentally sensitive areas. The project would also support implementation of the Seychelles Environmental Management Plan, focusing on programs in resource management, biodiversity conservation, and marine pollution control; restoration and preservation of the ecosystem of Aldabra atoll; protection of endangered sea turtles; and studies of waste reception facilities at the Port of Victoria. The project also includes the preparation of water resources study and management, outer islands and marine resources management, and an organizational review of the country's Division of Environment.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Tanzania

Forest Resources Management (Approved FY92)

$18 million, IDA
$26 million, total project cost

Implementing Agency: Ministry of Natural Resources/ Tourism and Natural Resources

Task Manager: Ryan

This project aims to improve forest resource management, and is the first step in implementing the Tanzania Forest Action Plan (TFAP), thereby signalizing long-term commitment to forestry development. The project specifically defines the policies needed for the sustainable development of the sector, and develops and puts in place the instruments needed for their execution; builds capacity in the institutions in charge of forestry, land tenure and land use planning; and develops appropriate forestry management techniques by testing different pilot programs for managing natural woodlands and for increasing tree planting by farmers.

Tanzania

River Basin Management of Smallholder Irrigation (Approved FY97)

$26.3 million, IDA
$30.8 million, total project cost

Implementing Agency: Ministry of Water, Ministry of Agriculture and Cooperatives

Task Manager: Elahi

The objectives of the project are to strengthen the Government of Tanzania's capacity to manage water resources and address water related environmental concerns both at the national level and in the Rufiji and Pangani river basins, and to improve irrigation efficiency of select smallholder traditional irrigation schemes in these two basins. In carrying out these objectives, the project would improve stakeholder participation in basin management and irrigation scheme operation, and stregthen the institutional, regulatory and incentive framework for basin management.

Tanzania

Lake Victoria Environment (Approved FY97)

$10.1 million, IDA
$10.1 million, total project cost

Implementing Agency: Vice President's Office

Task Manager: Donovan

The Lake Victoria Environmental Management Project (LVEMP) is a comprehensive program aimed at the rehabilitation of the lake ecosystem for the benefit of the people who live in the catchment, the national economies of which they are a part, and the global community. Theprogram objectives are to maximize the sustainable benefits to riparian communities from using resources within the basin to generate food, employment and income supply safe water, and sustain a disease free environment; and conserve biodiversity and genetic resources for the benefit of the riparian communities and the global community. In order to address the tradeoffs among these objectives which cut across national boundaries, a further project objective is to harmonize national management programs in order to achieve, to a maximum extent possible, the reversal of increasing environmental degradation.

Togo

Lome Urban Development (Approved FY94)

$26 million, IBRD
$29 million, total project cost

Implementing Agency: AAAU Agetur (Urban Works Agency) Togo T, Post, and Telephone

Task Manager: Larbi

This project promotes improvement of urban environmental management, environmental and sanitary conditions of the Be Lagoon and community development through capacity building of institutions in the area of urban management. Activities to improve the health of the Be Lagoon includes antierosion works, dredging of the Be Lake, drainage of two pilot zones, and the disposal and treatment of wastes; community participation through training in environmental management; construction of public latrines; miniprojects aimed at improving the urban environment; and improvement of transport and traffic conditions.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Uganda

Environmental Management Capacity Building (Approved FY96)

$11.8 million, IDA
$23 million, total project cost

Implementing Agency: Ministry of Natural Resources

Task Manager: Evans

Supporting the first 5-year phase of a longer-term national environmental program, the objectives of this project are to build capacity for environmental management at the national, district, and community levels through the establishment of the National Environmental Management Authority (NEMA); to strengthen selected districts; and to initiate a process for communities to address local natural resource degradation problems.

Uganda

Lake Victoria Environment (Approved FY97)

$12.1 million, IDA
$12.1 million, total project cost

Implementing Agency: Ministry of Natural Resources (Uganda)

Task Manager: Donovan

The Lake Victoria Environmental Management Project (LVEMP) is a comprehensive program aimed at the rehabilitation of the lake ecosystem for the benefit of the people who live in the catchment, the national economies of which they are a part, and the global community. Theprogram objectives are to maximize the sustainable benefits to riparian communities from using resources within the basin to generate food, employment and income supply safe water, and sustain a disease free environment; and conserve biodiversity and genetic resources for the benefit of the riparian communities and the global community. In order to address the tradeoffs among these objectives which cut across national boundaries, a further project objective is to harmonize national management programs in order to achieve, to a maximum extent possible, the reversal of increasing environmental degradation.

Zambia

Environment Program (Approved FY97)

$20 million, IDA
$40 million, total project cost

Implementing Agency: Ministry of Environment and Natural Resources

Task Manager: Souhlal

Project wioll assist in implementation of the Government's environmental program in coordination with other donors. It will provide investment capital and technical assistance in environment and natural resource use problems.

East Asia / Pacific

China

Tianjin Urban Development and Environment (Approved FY92)

$100 million, IDA
$195 million, total project cost

Implementing Agency: Tianjin Municipal Government

Task Manager: Choi

This project supports technical assistance and training to improve project planning and evaluation, budgeting and management, and monitoring of urban development and infrastructure. The project also supports technical assistance and training in sub-sectoral management, including solid waste disposal and public transport management. It supports physical works to improve drainage, sewerage, solid waste management, roads, traffic management, and public bus operations. It also includes the resettlement of households as required for the physical works, which result in improved housing and environmental health conditions.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

China

Beijing Environment (Approved FY92)

$45 million, IBRD
$80 million, IDA
$299 million, total project cost

Implementing Agency: Beijing Municipality (BM)

Task Manager: Choi

This project's objectives are to assist the Beijing Municipality (BM) in improving its environmental planning and management capabilities, and to plan and carry out specific pollution abatement efforts in the municipality. The project is designed to demonstrate cost-effective interventions in the areas of water, air, hazardous waste and solid waste pollution; improve investment planning; establish effective measures for regulatory control; set up requirements for the efficient operation and maintenance of communal facilities for pollution control and abatement; and includes methods to recover costs from the users of these facilities.

China

Ship Waste Disposal (Approved FY92)

$15 million, IDA
$64 million, total project cost

Implementing Agency: The Port Authorities of Dalian, Tianjin, Shanghai, Ningbo, Guangzhou and Xiamen

Task Manager: Tsumi

This project finances activities which will establish data on international ship traffic and waste types by designing and implementing a pilot interport ship waste monitoring system to facilitate enforcement; prepare an accident contigency plan for each port; initiate a Large Marine Ecosystems monitoring program for the Yellow Sea; undertake a study of the treatment of chemically contaminated water; provide and promote coordination among the authorities to upgrade environmental monitoring at the ports; and provide consultants' services and training related to the project. Other components define, design and provide landbased collection and disposal facilities; and establish or upgrade environmental monitoring and enforcement capabilities of port authorities.

China

Environment Technical Assistance (Approved FY93)

$50 million, IDA
$70 million, total project cost

Implementing Agency: National Environmental Protection Agency (NEPA) and Chinese Academy of Sciences (CAS)

Task Manager: Crooks

This project improves the coordination of environmental monitoring and ecological research; promotes cleaner industrial production and technology to prevent pollution and minimize waste; improves economic policy instruments for pollution control, specifically the pollution levy system; and strengthens the system for environmental assessment.

China

South Jiangsu Environment Protection (Approved FY93)

$250 million, IBRD
$584 million, total project cost

Implementing Agency: Jiangsu Province

Task Manager: Motte

This project assists authorities in strengthening environmental planning and management and in carrying out initiatives in the regional environmental strategy. It provides a line of credit for industrial pollution control and environmental management subprojects; supports the construction of municipal facilities for urban wastewater management; establishes solid- and hazardous- waste management and registration centers, emergency response centers, and hazardous materials storage and transshipment facilities; and provides technical assistance and training for the institutes responsible for environmental protection.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

China

Forest Resource Development and Protection (Approved FY94)

$200 million, IDA
$356 million, total project cost

Implementing Agency: Ministry of Forestry

Task Manager: Scobey

This project seeks to develop institutional capacity through preparation of national management plans, related technical assistance, preparation of policy studies, and strengthening of information and research services on key issues in biodiversity conservation. Biodiversity conservation will be enhanced by establishing protected forests and nature reserves; developing afforestation models that promote biodiversity and reduce disease damage; promoting development of canopy levels; and developing multitiered vertically stratified canopies to minimize soil erosion and water runoff.

China

Loess Plateau Watershed Rehabilitation (Approved FY94)

$150 million, IDA
$259 million, total project cost

Implementing Agency: Ministry of Water Resources

Task Manager: Voegele

This project aims to reduce erosion and inflows of sediment to the Yellow River by encouraging sustainable crop production on high-yielding level farmland; planting the slope lands with a variety of trees, shrubs, and grasses for land stabilization; afforestation of degraded agricultural lands in the area; and improved livestock management. It will also provide institutional support such as training, technological transfer and research to the Upper and Middle Reach Bureau to strengthen its capacity as a leading agency for soil and water conservation.

China

Shanghai Environment (Approved FY94)

$160 million, IBRD
$457 million, total project cost

Implementing Agency: Shanghai Municipaity (SM)

Task Manager: Read

This project supports financial and policy initiatives and planning and management reforms, supported by an investment program of environmentally oriented capital works and institutional strengthening. The financial and policy initiatives developed as part of project preparation would focus on improving operational efficiency of urban services; mobilizing resources through tariff increases and service charges; and long-term environmental planning and investment programs.

China

Liaoning Environment (Approved FY95)

$110 million, IBRD
$351 million, total project cost

Implementing Agency: Liaoning Province (LP) and the Municipalities of Anshan, Bendi, Dalian, Fushun, Jinxi, and Jinzhou

Task Manager: Read

This project assists the government in reducing pollution and improving operational efficiency through the upgrading of technology, minimization of waste, and reuse of resources. It strengthens local capabilities in monitoring and enforcing environmental regulations and corporate sewerage utilities, and establishes a sound cost-recovery policy for pollution abatement services. It also includes an environmental protection fund for eligible pollution control subprojects of industrial enterprises and enhances institutional development through technical assistance and training. An additional component finances the rehabilitation and conservation of cultural heritage sites.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

China

Chongquing Industrial Reform and Pollution Control (Approved FY96)

$170 million, IBRD
$478.1 million, total project cost

Implementing Agency: Chongqing Municipal Project Management Office

Task Manager: Kahn, Z

The project supports the Bank's lending strategy in China within a policy framework that focuses on enhanced industrial pollution control linked to enterprise reform and technological restructuring. The project helps the Chongquing Muncipality establish a strategy and prepare a long-term plan to achieve a major reduction in pollution for the whole industrial sector by increasing the effectiveness of environmental regulatory frameworks and pollution management capacity; reduce pollution and restructure productive facilities from iron and steel industries; and initiate a pilot effort to assist industrial enterprises in other industrial sectors to restructure their productive facilities, control pollution and transform themselves into modern corporations.

China

Second Shanghai Sewerage (Approved FY96)

$250 million, IBRD
$633.3 million, total project cost

Implementing Agency: Shangai Municipal Sewerage Company, Ltd.

Task Manager: Read

This project follows up the first phase of Shanghai Municipality's development program to improve environmental conditions and management. Specific objectives of the project are to enhance wastewater and stormwater management through expanding wastewater collection, pretreatment and disposal capacity, and stormwater drainage facilities; reduce urban pollution impact while facilitating pollution control; improve wastewater utility financial and operational management; and strengthen sector institutions through training, feasibility studies, and future investment project preparation.

China

Hubei Urban Environmental Protection (Approved FY96)

$125 million, IBRD
$25 million, IDA
$370 million, total project cost

Implementing Agency: Hubei Finance Bureau Municipal Government

Task Manager: Travers

This project strengthens and finances investment in wastewater and municipal solid waste management, as well as nightsoil handling and disposal; helps to abate industrial air pollution; and improves planning and financing of urban environmental services in the cities of Wuhan, Huangshi, Xiangfa, and Yichang.

China

Yunnan Environment (Approved FY96)

$135 million, IBRD
$25 million, IDA
$307 million, total project cost

Implementing Agency: Municipal Governments

Task Manager: Fritz

The project is part of a phased development program of Yunnan Province (YP) to improve environmental conditions and sustain urban services management. The principal objective is to provide a sustainable environmental framework for the economic and social development of the Province, while providing a conducive foundation for industrial growth. Specific objectives include: institutional strengthening for pollution control, and municipal water, wastewater, solid waste and nightsoil management; support for the improvement of lakes to allow the water to be used for potable supply, industry or agriculture; investments in pollution control and municipally-provided urban environmental services; and a comprehensive approach to management and financing of urban environmental infrastructure investments.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Indonesia

Yogyakarta Upland Area Development (Approved FY91)

$16 million, IBRD
$25 million, total project cost

Implementing Agency: Directorate General of Regional Development (BANGDA), Ministry of Home Affairs

Task Manager: Wiranto

This project improves upland productivity of the Yogyakarta region through conservation stabilization measures; provides on-farm technology displays covering vegetative conservation (such as fodder legumes to stabilize slopes), and alley-cropping to strengthen the technical basis for intensive microwatershed development in the uplands.

Indonesia

BAPEDAL Development Technical Assistance (Approved FY92)

$12 million, IBRD
$15 million, total project cost

Implementing Agency: Environmental Impact Management Agency

Task Manager: Walton

The primary objective of this project is to assist the Government of Indonesia (GOI) in implementing the Five Year BAPEDAL Development Plan, through strengthening the institutional capacity and role of BADEPAL and other agencies responsible for environmental management and pollution control; and designing and implementing pollution control measures at the central and regional levels.

Indonesia

Integrated Pest Management (Approved FY93)

$32 million, IBRD
$53 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Gapasin

This project promotes environmentally sound crop production systems through a five-year program to train at least 800,000 farmers in the theory and application of Integrated Pest Management (IPM); supports occupational health studies and field investigations; and strengthens the regulatory and environmental management framework, primarily for IPM policies to reduce the risks associated with the manufacture, distribution, and application of pesticides.

Indonesia

National Watershed Management and Conservation (Approved FY94)

$57 million, IBRD
$488 million, total project cost

Implementing Agency: Ministry of Forestry (MOF), Ministry of Agriculture (MOA), and Ministry of Home Affairs (MOHA)

Task Manager: Silverman

This project aims to raise the living standards of poor upland farmers by improving and restoring the productive potential of the resource base, while at the same time improving watershed environmental quality and protecting downstream watershed resources. It provides institutional strengthening through improvement of planning, management, and natural resource information systems; supports the creation of a multidisciplinary upland research program, and training and extension; develops a watershed on West Java; and invests for reforestation.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Indonesia

Surabaya Urban Development (Approved FY94)

$175 million, IBRD
$618 million, total project cost

Implementing Agency: Surabaya Municipality

Task Manager: Coulthart

This project improves urban environmental quality by assisting the local government's capacity to plan, implement, and operate infrastructure in an environmentally sound fashion and by enhancing community participation through management, staffing, and the financial ability of the government water authority for water supply and human waste disposal. It also protects and improves water quality in the Kali Surabaya; improves onsite wastewater disposal; provides offsite sewerage; demonstrates and evaluates the potential for conventional and low-cost offsite sanitation and cost recovery in human waste services; and improves waste collection and landfill disposal techniques. In addition, the project finances mechanisams that will protect resettlers' rights.

Indonesia

Kerinci-Seblat Biodiversity Integrated Conservation and Development (Approved FY96)

$19.1 million, IBRD
$47.2 million, total project cost

Implementing Agency: Ministry of Forestry and Home Affairs, and local governments in four participating provinces

Task Manager: Silverman

This project aims to protect biodiversity, prohibit habitat fragmentation through protection and management, and include the involvement of local communities in Kerinci-Seblat National Park. It develops an ICDP model to reconcile conservation, and regional and district development, that follows a two pronged approach to stabilize the boundary and protect biodiversity within the Park, and to enhance the livelihoods of poor households by providing them with alternative opportunities consistent with conservation. Its design meets this objective through institutional strengthening in integrated planning, coordinated implementation and regular monitoring and enforcement; building institutional capacity through increased staffing and in-service training; and resource management.

Indonesia

Renewable Energy Small Power Project (Approved FY97)

$66.4 million, IBRD
$141 million, total project cost

Implementing Agency: Developers of small renewable energy projects selling electricity to the State Electricity Corporation

Task Manager: Sanghvi

Through investment and technical assistance, this project aims to catalyze the creation of private sector markets for small-scale renewable energy power projects and to reduce the costs of rural electrification operations outside Java-Bali. This initiative, whose initial size is sufficiently large to establish a baseline penetration of such renewables while also providing a demonstration effect that can support a critical mass of commercially sustainable projects, was developed by non-utility generators, which could be a variety of entities such as private firms, state-owned non-utility firms, NGOs, cooperatives or even an independent joint utility-private enterprise.

Indonesia

Solar Home Systems Project (Approved FY97)

$20 million, IBRD
$111.8 million, total project cost

Implementing Agency: TBD

Task Manager: Sanghvi

This project aims to catalyze the rapid penetration of solar photo-voltaic (PV) systems by formulating a minimal cost rural electricification strategy; facilitating participation of the private sector, cooperatives and NGOs in advancing renewable energy commercialization through the creation of a sustainable "market conforming" framework and promoting environmentally sound energy resource development and reducing the energy sector's dependence on fossil fuels; and strengthening institutional capacity to sustain solar PV development.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Korea, Republic of

Kwangju and Seoul Sewerage (Approved FY93)

$110 million, IBRD
$530 million, total project cost

Implementing Agency: Seoul Metro Government

Task Manager: Altaf

This project expands wastewater treatment facilities in Kwangju and Seoul; reduces pollution in two major rivers by supporting institutional development for wastewater management; and promotes innovative technological and policy initiatives for water conservation. The projects objectives include assistance in cleaning the Yongsan and Han Rivers in order to reduce health hazards and attain water quality needed for the cities' population and for those using water downstream; focusing the attention of the water agencies on conservation to reduce wastewater; encouraging the cities to develop self-financing efficiency for wastewater activity; and supporting technological and instiitiutional improvements in the sector.

Korea, Republic of

Environmental Research and Education (Approved FY93)

$60 million, IBRD
$97 million, total project cost

Implementing Agency: Ministry of Education (MOE)

Task Manager: McGough

This project provides specialized equipment, training, and library materials to upgrade the capacity of twelve national agricultural colleges and nine national veterinary colleges to undertake research into key environmental problems; reinforces the colleges' programs to strengthen professional training in environmental fields; and supports improved environment-related research and teaching programs.

Korea, Republic of

Environmental Technology Development (Approved FY94)

$90 million, IBRD
$156 million, total project cost

Implementing Agency: Ministry of Education (MOE)

Task Manager: McGough

This project strengthens selected national research institutes to adequately address environmental issues and to undertake environmental research and design activities. It provides institutional support to the policy and planning role of the Ministry of Environment by providing overseas training, visiting experts, and library materials, as well as equipment and equipment-related inputs and civil works to house the equipment.

Korea, Republic of

Waste Disposal (Approved FY95)

$75 million, IBRD
$305 million, total project cost

Implementing Agency: Ministry of Construction

Task Manager: Altaf

This project assists the governments in Pusan and Chunbak Province in addressing environmental, institutional, and technological concerns regarding wastewater and specified waste disposal, the health hazards of surface and groundwater contamination, and the reuse of treated effluent. The Pusan waste disposal plant will ensure satisfactory management of most hazardous waste substances generated in industries.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Korea, Republic of

Ports Devel. & Env. Improvement (Approved FY95)

$100 million, IBRD
$1107 million, total project cost

Implementing Agency: Korea Maritime & Ports

Task Manager: Arnold

This project provides comprehensive support for addressing environmental issues in port and harbor development. It also finances facilities to collect, manage, and treat ship waste and to remove timber- and fish-processing plants that cause air, noise, and traffic pollution; provides training and technical assistance to strengthen the environmental capabilities of the Korea Maritime and Port Authority, and to a program which monitors pollution and ecosystem productivity in the Yellow Sea.

Laos, Peoples Democratic Rep.

Forest Management and Conservation (Approved FY94)

$9 million, IDA
$20 million, total project cost

Implementing Agency: Department of Forestry (DOF)

Task Manager: Shen

This project assists the introduction of a sustainable natural resource management system and conservation of the country's forest resources through support of an institutional framework and the formulation of the regulatory framework for the forestry sector; implementation of national programs on forest resource inventory and planning; sustainable forest management and protection; establishment and management of protected areas; and provision of the necessary technical assistance and human resource development.

Philippines

Environment & Natural Resource Management (Approved FY91)

$158 million, IBRD
$66 million, IDA
$369 million, total project cost

Implementing Agency: Department of Environment and Natural Resources (DENR) and Department of Agriculture (DA)

Task Manager: Shen

Aiming to preserve Philippines' biodeversity this project finances the re-establishment of natural resources where they have been degraded, and introduces sustainable land use practices. The objectives are to determine what areas must be preserved and introduce a management system; introduce user fees for public resources which discourage rent- seeking behavior; improve enforcement of logging regulations; provide secure tenure rights to users in return for sustainable resource use; provide extension services to upland populations; and establish mechanisms to support small-scale, community-based resource management and livelihood projects.

Philippines

Water Resources Development (Approved FY97)

$58 million, IBRD
$85.2 million, total project cost

Implementing Agency: Department of Environment and Natural Resoruces; National Water Resources Board; National Irrigation

Task Manager: Husain

The project would assist the Government in developing an appropriate policy and institutional framework to improve water resources planning, development and management in the country; initiating an integrated and comprehensive approach to watershed management; improving efficiency of existing irrigation systems; improving irrigation services in the long term by accelerating turnover of systems to waster users; improving the environment in irrigated areas through disease control, erosion control works and sediment montiroing in rivers and canals; and improving capacity for environmental assessment.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Thailand

Clean Fuels & Environmental Improvement (Approved FY95)

$90 million, IBRD
$370 million, total project cost

Implementing Agency: The Bangchak Petroleum Public Company Limited (BPPCL)

Task Manager: Malhotra

This project supports the reduction of air pollution attributable to petroleum fuels in Thailand by assisting the government in meeting reformulated gasoline and diesel oil specifications and improving its refinery operations through the installation of appropriate facilities and equipment to reduce refinery emissions and ensure safety.

Eastern Europe / Central Asia

Croatia

Coastal Forest Reconstruction and Protection Project (Approved FY97)

$42 million, IBRD
$60 million, total project cost

Implementing Agency: Ministry of Agriculture and Forestry

Task Manager: Wencelius

Cyprus

Southeast Coast Sewerage and Drainage (Approved FY92)

$32 million, IBRD
$103 million, total project cost

Implementing Agency: Larnaca Sewerage and Drainage Board (LSBD), Ayia Napa Sewerage Board (ANSB), Paralimni Sewerage Board

Task Manager: George

This project provides drainage and the first phase of a sewage system for Larnaca, and sewerage systems for the communities of Ayia Napa and Paralinni. The project consists of central sewage collection, treatment, and disposal systems; the distribution of treated effluent for re-use; upgrading the existing stormwater drainage system in Larnaca; and technical assistance and training and provision of related equipment to the sewerage boards.

Czech Republic

Power and Environmental Improvement (Approved FY92)

$246 million, IBRD
$246 million, total project cost

Implementing Agency: CEZ and Sep

Task Manager: Gray

This project improves power plant efficiency to reduce air pollution in northern Bohemia, and health of the population; modernizes the transmission system; and facilitates interconnection of the CEZ and German power grids. These objectives will be accomplished in the context of overall reform of the energy sector. To this end, the project reduces total consumption of pollution-causing lignite through power plant efficiency improvements; curtails power plant SO2 emissions by means of flu gas desulfurization; reduces dust and fly-ash pollution; increases the reliability, efficiency and economy of the CEZ transmission system; and assists in improving investment planning and corporate management and organization.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Estonia

District Heating Rehabilitation (Approved FY94)

$38 million, IBRD
$65 million, total project cost

Implementing Agency: State Energy Department

Task Manager: Gochenour

This project promotes energy efficiency and the economy by supporting the conversion and replacement of small boilers for use of peat and wood, to be harvested and used in an environmentally sustainable manner; reduces wastewater in the district heating systems; installs new substations with regulators and heat meters; and strengthens and restructures the district heating institutions.

Estonia

Haapsalu and Matsalu Bays Environment (Approved FY95)

$2 million, IBRD
$8.3 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Soderstrom

This project improves water and wastewater treatment in Haapsalu and promotes management of point and nonpoint source pollution in the catchment areas of Haapsalu and Matsalu Bays, with a view to reducing pollution in the Baltic Sea. It also supports the planning and management of ecotourism and implementation of the management plan for the Matsalu State Nature Reserve. This project is part of the Bank's support for the Baltic Sea Environment Program.

Latvia

Liepaja Environment (Approved FY95)

$4 million, IBRD
$21 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Soderstrom

This project includes water and wastewater investment components, which are complemented by an environmental management component. It also restores and enhances water quality in the city of Liepaja and the northern portion of Lake Liepaja and promotes environmentally sustainable development, of the coastal zone and protected areas in and around Liepaja, Ventspils, and Talsi. The project is part of the Bank's support for the Baltic Sea Environment Program.

Lithuania

Klaipeda Environment (Approved FY95)

$7 million, IBRD
$23.1 million, total project cost

Implementing Agency: Environment Protection DG

Task Manager: Soderstrom

This project focuses on the city of Klaipeda. It improves water supply and sanitation services in the city as well as the operational efficiency and management of the Klaipeda State Water Supply Enterprise; promotes environmentally sustainable management and development of the Kursiu Lagoon and adjacent coastal areas. This project is part of the Bank's support for the Baltic Sea Environment Program.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Lithuania

Siauliai Environment (Approved FY96)

$6.2 million, IBRD
$22.9 million, total project cost

Implementing Agency: Siauliai Water (SW), Ministry of Environmental Protection (MoEP)

Task Manager: Soderstrom

This project aims to control pollution from the Upper Lielupe River Basin, a pollution source in the Baltic Sea, by promoting environmentally sustainable management and development and regional cooperation. The project improves the quality, reliability, and cost-efficiency of water supply and wastewater services in the municipality; demonstrates financially sustainable and socially responsible provision of municipal services; and environmental quality monitoring programs and enforcement systems. Components include the rehabilitation of water and wastewater systems; construction of water treatment; completion of a wastewater treatment plant; and institutional strengthening and training. This is part of the Bank's support for the Baltic Sea Environment Program.

Lithuania

Klaipeda Geothermal Demonstration (Approved FY96)

$5.9 million, IBRD
$18 million, total project cost

Implementing Agency: Enterprise Geoterma

Task Manager: Halldin

The project comprises two components to optimize use of the available geothermal energy resources in Klaipeda. A technical assistance and training component, is complemented by an investment component for implementation of the Klaipeda Geothermal Demonstration Plant. The Demonstration Plant component includes investments in production and injection wells, above ground facilities and piping for the extraction and distribution system. The technical assistance componet includes: design of the equipment for extraction and transfer of geothermal energy; preparation of a drilling program; management support for Enterprise Geoterma; training; and supervision of the project's implementation.

Poland

Environment Management (Approved FY90)

$18 million, IBRD
$27 million, total project cost

Implementing Agency: Ministry of Environment and Natural Resources

Task Manager: Schreiber

This project provides an umbrella framework for addressing the highest priority environmental concerns in Poland, and for moving toward a decentralized system of management. Furthermore, it strenghtens environmental management by helping to establish the institutional, regulatory and informational basis for immediate corrective actions and longer-term extensive investments supported through bilateral and multilateral assistance. It also reduces health risks, decreases economic costs from environmental degradation and improves evironmental quality. Support for these objectives is provided through financial and technical assistance, training and equipment.

Poland

Energy Resource Development (Approved FY90)

$250 million, IBRD
$590 million, total project cost

Implementing Agency: Coal & Gas/ Oil Companies

Task Manager: Wilberg

This project improves the convertible currency earnings of Poland by increasing domestic production of natural gas and encouraging energy conservation for all forms of energy and fuel substitution through energy price reform. It also contributes to a reduction of environmental pollution related to energy use, and improves the competitive, regulatory, and financial framework of the sector entities by supporting the implementation of appropriate restructuring programs for the coal, gas, power, and heat sectors.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Poland

Heat Supply Restructuring and Conservation (Approved FY91)

$340 million, IBRD
$739 million, total project cost

Implementing Agency: District Heat Companeat Companies

Task Manager: Benmessaoud

This project supports implementation of a comprehensive restructuring of the energy sector, commercialization and privitization of restructured enterprises and of petroleum exploration and production, introduction of a regulatory framework and improvement in energy pricing policies; extends the life of district heating assests through rehabilitation; promotes energy conservation through financing appropriate investments; and reduces environmental pollution by investing in energy-efficient equipment and sustems and by supporting programs to replace small coal-fired boilers with gas-fired boilers.

Poland

Forest Development Support (Approved FY94)

$146 million, IBRD
$335 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Wencelius

The project's assists the Government in executing its program of the development of selected forestry branches and protection of ecosystems in National Parks for 1993- 1997, thereby ensuring the protection of Poland's forest ecological capital, providing for social benefits, and accommodating sustainable forestry. Objectives include assistance in introducing biologically and environmentally sound management practices in the forestry sector; improvement of the efficiency of forestry activities; and improvement in the organization, managment and financial structure of the Genera Directorate of State Forests and the Gorvernment's progrmas to modernize, restructure and privitize elements of the GDSF.

Poland

Katowice Heat Supply (Approved FY95)

$45 million, IBRD
$92.9 million, total project cost

Implementing Agency: REC-Katowice, The Katowice District Heating Enterprise

Task Manager: Benmessaoud

This project addresses the environmental, health, and economic problems caused by soot and dust particulates generated by energy production. It enhances energy conservation and efficiency in the district heating sector by extending the life of existing district heating assets through rehabilitation and introduction of modern technologies and by reducing environmental pollution through investments in energy-efficient equipment and systems as well as by supporting a program to eliminate coal-fired, heat-only boilers.

Russian Federation

Emergency Oil Spill (Approved FY95)

$99 million, IBRD
$140 million, total project cost

Implementing Agency: Komineft

Task Manager: Mckay

This project assists the Russian Federation and the pipeline operator in stabilizing the oil spill area and preventing ecological damage in the Pechora River Basin. It will continue to clean up in an environmentally appropriate way, provide short-term support for safe pipeline operations, evaluate the need for a replacement pipeline, and identify and implement other measures to mitigate against possible oil spills in the future.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Russian Federation

Environmental Management (Approved FY95)

$110 million, IBRD
$195 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Batstone

This project supports the Russian Federation's Environmental Framework Program, which addresses environmental and natural resource management issues at federal, regional, and local levels and mainstreams them into the economic, social, and political adjustment process. It also includes policy and regulatory support and environmental epidemiology; water quality management; hazardous waste management; the creation and capitalization of a National Pollution Abatement Facility for the funding of economically and financially viable projects; and the creation of a Center for Project Preparation and Implementation under the Ministry of Environmental Protection and Natural Resources.

Slovenia

Environment (Approved FY96)

$34.6 million, IBRD
$55.4 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Schreiber

This project's two main objectives are to support air pollution abatement in polluted cities in Slovenia and to provide for Geographical Information Systems in the Ministry of Environment and Planning. The Air Pollution Abatement Program assists households and boilerhouse operators in polluted cities to convert to cleaner fuels or heating systems by providing loans that would cover 80% of the conversion costs. Based on lessons learnt from a pilot phase in Maribor, this Program will be a self-sustaining revolving loan fund. The objective of the GIS Component is to collect, organize, and manage information for improved development and loand-use planning, particularly in areas experiencing rapid development. It would also motivate municipalities to build local GIS centers as a part of the national GIS infrastructure.

Turkey

Istanbul Water Supply and Sewerage (Approved FY88)

$218 million, IBRD
$570 million, total project cost

Implementing Agency: Istanbul Water Supply and Sewerage General Directorate (ISKI)

Task Manager: Coyaud

This project completed during fiscal 1996, improved and extended sewerage service to 70% of the population of Istanbul, provided for appropriate disposal of sewage to protect the waters and shorelines of the Sea of Marmara and the Bosphorus; reduced unaccounted-for water; and strengthened Istanbul Water Supply and Sewerage General Directorate's (ISKI) operation, and maintenance and industrial waste management capabilities. The project included rehabilitation of parts of water distribution systems; installation of a system for water supply monitoring and control; and construction of sewage collection and treatment facilities.

Turkey

Ankara Sewerage (Approved FY90)

$173 million, IBRD
$557 million, total project cost

Implementing Agency: Ankara Water Supply and Sewerage Administration (ASKI)

Task Manager: Ikegami

This project provides new facilities and rehabilitates existieng ones to promote environmental improvements and reduce health hazards in the Greater Ankara region. This will be achieved by: expanding sewage collection services to benefit 850,000 people; improving present sewerage services to about 500,000 people; and constructing drainage systems to reduce the risk of flooding. In addition, technical assistance and training would be provided to ASKI to strengthen it's capability to carry out expanding operations.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Turkey

Eastern Anatolia Watershed Rehabilitation (Approved FY93)

$77 million, IBRD
$121 million, total project cost

Implementing Agency: Ministry of Forestry (MOF) and Ministry of Agriculture and Rural Affairs (MARA)

Task Manager: Kadiresan

This project addresses problems of rural poverty and natural resource degradation by helping to improve the productivity of range and forest land; promotes the production of fuelwood, cultivated fodder, and sustainable use of marginal farmlands; facilitates the adoption of treatments for range and forest land; and supports the increased responsibility and involvement of local communities in planning and managing their resources.

Turkey

Bursa Water Supply and Sanitation (Approved FY93)

$130 million, IBRD
$258 million, total project cost

Implementing Agency: Bursa Water Supply and Sewerage Authority (BUSKI), Bursa Metropolitan Municipality (BMM), and

Task Manager: Coyaud

This project improves environmental conditions, reduces health hazards, and increases the efficiency of water usage by building water supply and waste treatment and transfer works, improves waste collection and disposal, and provides technical assistance for project implementation and institutional strengthening.

Latin America / Caribbean

Argentina

Native Forests and Protected Areas (Approved FY97)

$19.5 million, IBRD
$30 million, total project cost

Implementing Agency: Secretaria de Recursos Naturales y Ambiente Human (SRNyAH) and Administraction de Parques Nacionales (APN)

Task Manager: Kirmse

The objectives of the projects are to help Argentina's Secretariat of Natural Resources and Human Environment prioritize its actions concerning national forests; facilitate the development of an incentive and regulatory framework which would encourage decision makers (both public and private) to more fully internalize the full range of social costs and benefits associated with their decisions and actions affecting native forests; develop a plan for tranforming the National Parks Administration into a world-class park management organization; and increase the environmentally sustainable level of tourism in four national parks.

Bolivia

Eastern Lowlands Regional Development (Approved FY90)

$35 million, IDA
$55 million, total project cost

Implementing Agency: Govt./Cordecruz

Task Manager: McMahon

This project supports the planning and management of natural resources by preparing a land-use plan for the region that encompasses the results of agroecological zoning, soil studies and mapping, and studies on water, forestry, livestock, and land tenure. It also protects forest reserves and national parks (such as Noel Kempf Mercado National Park) and indigenous people by demarcating tribal lands.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Bolivia

Environmental Technical Assistance (Approved FY93)

$5 million, IDA
$9 million, total project cost

Implementing Agency: National Environment Fund

Task Manager: Plaza

This project strengthens key government-related institutions through training for planning, management, environmental assessment, and evaluation. It also supports the development and strengthening of an environmental legal and regulatory framework; and helps to develop the capacity of the primary school system to provide environmental education.

Bolivia

Environment, Industry, & Mining (Approved FY96)

$11 million, IDA
$50 million, total project cost

Implementing Agency: Ministerio de Minas y Metalurgia

Task Manager: Barham

This project supports the implementation and refinement of a regulatory framework to assure that privately-led mining and industrial activities grow in an environmentally-friendly fasion. It also helps remediate contamination from past mining activities for which the State accepts liability, including remediation activities that help to facilitate private investment in the mining sector, and assists in attracting other financial resources for investments for mining community environmental problems which are otherwise ineligible for financing.

Brazil

Minas Gerais Forestry Development (Approved FY88)

$49 million, IBRD
$100 million, total project cost

Implementing Agency: Minas Gerais Dev. Bank (BDMG), State Forest

Task Manager: Kirmse

The project finances the establishment of up to 165,000 ha of forest plantations for industrial purposes and the building of charcoal manufacturing kilns and infrastructure through a line of credit; planting of about 40,000 ha of woodlots on small and medium-sized farms; staff, equipment and consulting services for forestry conservation including control, supervision and management of forest harvesting and wood utilization, conservation education, and development of parks and reserves. The project also finances institutional development.

Brazil

Land Management I - Parana (Approved FY89)

$63 million, IBRD
$138 million, total project cost

Implementing Agency: State Secretariat of Agriculture and Supply of Parana

Task Manager: Carroll

This project increases agricultural production and farm incomes by promoting the adoption of sustainable, modern forms of land management and soil and water conservation, thus safeguarding farmer incomes and the state's natural resources. This is achieved through increasing the extent and duration of vegetative cover of the soil, better protecting it from intense rainfall; improving internal soil structure and drainage, thus increasing water infiltration; and safely disposing of any remaining runoffs.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Brazil

Land Management II (Approved FY90)

$33 million, IBRD
$72 million, total project cost

Implementing Agency: State Secretariat of Agriculture and Supply of Santa Catarina

Task Manager: Lituma

This project provides land use mapping, planning, and monitoring for 520 project microcatchments. It develops an incentive program for land management, soil conservation, and pollution control to help farmers belonging to a microcatchment association properly plan land management and implement collective soil conservation and agricultural pollution control measures; plans erosion control along rural roads to be implemented as parts of microcatchment management plans; supports forestry development and protection of natural resources through forestry conservation; develops environmental legislation concerning land use, soil conservation, and agricultural pollution; supports management of state parks and protection of biological reserves.

Brazil

National Environment (Approved FY90)

$117 million, IBRD
$166 million, total project cost

Implementing Agency: Ministry of Planning

Task Manager: Gross

This project strengthens the protection of the country's most important conservation areas and imminently endangered ecosystems, with special emphasis on the reduction of economic and environmental losses associated with uncontrolled deforestation, soil erosion, and air and water pollution in the Pantanal, Legal Amazon, Atlantic Forest and Brazilian Coast; the institutions of the environmental sector, with special emphasis on the strengthening of National Environmental Agency (IBAMA) and State Agencies in the Legal Amazon and Pantanal; and the regulatory framework of the environmental sector.

Brazil

Rondonia Natural Resource Management (Approved FY92)

$167 million, IBRD
$228 million, total project cost

Implementing Agency: Secretariat of Regional Development, Pesidency of the Republic Rondonia State Secretariat of Planning

Task Manager: Lituma

This project implements an improved approach to natural resource management, conservation and development in the State of Rondonia. It assist the government to institute a series of changes in policies, regulations and public investment programs; conserves the biodiversity of the state; protects and enforces the borders of conservation units, Amerindian reserves, public forests and extractive reserves, and controls and prevents illegal deforestation, wood transport and forest fires; develops intensive and integrated farming systems in areas of agriculture and agro-forestry; supports priority investments in socio-economic infrastructure and services needed to implement the State's agro-ecological zoning.

Brazil

National Industrial Pollution Control (Approved FY92)

$50 million, IBRD
$150 million, total project cost

Implementing Agency: Banco de Desenvolvimiento Economico e Social (BNDES)

Task Manager: Tlaiye

The project improves public health and living conditions of the population in and around industrialized areas. It also devises a regulatory framework for pollution control; obtains a political commitment from State authorities to improve the environment; supports a capable State Environmental Protection Agency (SEPA); familiarizes the banking system with financing free-standing pollution control investments, allowing industry to have access to pollution control financing. It strengthens the institutional capabilities of active SEPAs in monitoring and analyzing environmental problems and strengthens the National Development Bank's (BNDES) ability to process free-standing pollution abatement loans.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Brazil

Mato Grosso Natural Resource Management (Approved FY92)

$205 million, IBRD
$286 million, total project cost

Implementing Agency: Secretariat of Regional Development, Presidency of the Republic Secretariat of Planning of Mato Grosso

Task Manager: Vita

This project supports changes in policies, regulations and public investment programs; improves the knowledge of natural resources by providing more detailed data on land capability and land tenure; reduces environmental degradation and ensures biodiverstiy preservation; protects and enforces the borders of conservation units, indigenous reserves, public forests and controls and prevents illegal deforestation, wood transport, and forest fires; develops sustainable agriculture in suitable areas; and consolidates the technical operational capacity of institutions, particularly those responsible for management of natural resources, and the protection and management of forests and indigenous reserves, and agricultural services.

Brazil

Water Quality and Pollution Control-Sao Paulo/Parana (Approved FY93)

$245 million, IBRD
$494 million, total project cost

Implementing Agency: Fedarative Republic of Brazil, and the local State Governments of Sao Paulo and Parana

Task Manager: Rodriguez

This project reduces current levels of water pollution and preserves water quality through river regularization and flood control drainage; provides for basic sanitation services, and the collection and disposal of solid waste. It helps establish policy for water pollution control and creates water basin management, develops the financial capacity to provide services, and sets up project preparation facilities to help start water pollution control projects in the most congested urban areas of Brazil.

Brazil

Minas Gerais Water Quality and Pollution Control (Approved FY93)

$145 million, IBRD
$308 million, total project cost

Implementing Agency: Secretariats of State

Task Manager: Rodriguez

This project helps to recuperate environmentally deteriorated river basins through improved flood control and urban drainage, and the collection, treatment and disposal of municipal and industrial sewage and solid waste; strengthens environmental protection and water basin management; and promotes institutional strengthening of the State Environmental Agency.

Brazil

Espirito Santo Water Supply and Coastal Pollution Management (Approved FY94)

$154 million, IBRD
$308 million, total project cost

Implementing Agency: State Water Company of Espirito Santo (CESAN) and State Secretariat of the Environment (SEAMA)

Task Manager: Velez

The project comprises an investment component to help finance CESAN in 1994-1999 investment program and an institutional program to strengthen the capabilities of both CESAN and the State Secretariat of the Environment (SEAMA), through studies, technical assistance and training in selected areas, and to provide appropriate water and sanitation infrastructure in low-income urban areas of Grande Vitoria and Guarapari.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Brazil

Environmental Conservation and Rehabilitation (Approved FY96)

$50 million, IBRD
$109 million, total project cost

Implementing Agency: Compania Vale Do Rio Doce (CVRD)

Task Manager: Manibog

This project consists of air, water and soil pollution control and land reclamation investments in CVRD's mining, industrial, rail and port operations thoughout the country; natural resource investments; socially oriented investments, studies in research, training, and technical assistance; implementation of a comprehensive corporate environmental information, control, monitoring and auditing system; further sub-projects and studies aimed at reducing pollution and environmental degradation, and conserving natural ecosystems, sustainable management of natural forests; environmental education, and social programs aimed at improving the welfare of communties.

Colombia

Natural Resource Management Program (Approved FY94)

$39 million, IBRD
$65 million, total project cost

Implementing Agency: Natlional Planning Department

Task Manager: Hazelton

This project aims to arrest the degradation of natural renewable resources through the development of a national forest policy and a strategy for natural resource management in the Choco Region; ecological zoning; establishment of an environmental monitoring system; titling and demarcation of land; and institutional support to Black and Amerindian communities. It also supports local projects to protect and rehabilitate watershed areas through technical assistance, and it strengthens the capacity of National Parks Services to protect threatened ecosystems by funding for staff, infrastructure, and technical assistance.

Colombia

Urban Environment Technical Assistance (Approved FY96)

$20 million, IBRD
$40 million, total project cost

Implementing Agency: Min. of Environment, Depts of Env't of Bogota, Cali & Barranquilla; Metro Planning Agency of Aburra Valley.

Task Manager: Serra

This project supports the implementation of Colombia's National Environmental Policy and improvement of environmental management in urban areas through strengthening the capacity of the MinAmbiente to provide policy advice and technical assistance to Colombian cities, and strengthening environmental management agencies in the urban centers of Bogota, Cali, Medellin, and Barranquilla. In support of this objective, the project also helps establish the National Environmental Information System, at the national and local levels, which is instrumental in improving urban environmental management.

Chile

Second Valparaiso Water Supply and Sewerage (Approved FY91)

$50 million, IBRD
$142 million, total project cost

Implementing Agency: Empresa de Obras Sanitarias de Valparaiso S.A. (ESVAL)

Task Manager: Chang

This project seeks to achieve investments in infrastructure through improved maintenance and rehabilitation; increased efficiency in public services; and alleviation of environmental pollution that adversely affects public health and hinders economic development. Objectives include increasing the sanitary conditions of streams, public beaches, and the marine environment in the Greater Valparaiso area by reducing water losses, improving water quality, and increasing the efficiency of the city's water utility. It also supports expansion of the water supply services and the increase of ESVAL's operational efficiency and capacity to successfully implement the proposed investment and development program.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Chile

Environment Institutions Development (Approved FY93)

$12 million, IBRD
$33 million, total project cost

Implementing Agency: National Environmental Commission

Task Manager: Manibog

This project establishes an institutional framework to manage activities for environmental protection and the conservation of natural resources, including updating the legal environment framework, incorporating environmental assessment in public and private sector activities, training professionals in environmental and natural resource management, and establishing an environmental information system. It also supports institutional strengthening and the economic analysis of selected environmental problems and strengthens the environmental management capacity of priority sectors.

Ecuador

Lower Guayas Flood Control (Approved FY91)

$59 million, IBRD
$98 million, total project cost

Implementing Agency: The Commission for the Development of the Guayas River Basin (CEDEGE)

Task Manager: Vaccari

The project's flood control system benefits urban and rural inhabitants in an area of 170,000 ha through protection from catastrophic flooding. To ensure sustainability, it includes an Agricultural Development Plan to improve production systems for smallholders. A multi-institutional effort coordinated by CEDEGE includes research programs in rice, cocoa, and small-scale mechanization; seed production; extension; strengthening smallholder farmer organizations; and on-farm investments to be financed with farmers' own resources or with commercial credit. It also provides support to environmental protection and conservation initiatives. Support focuses on studies; monitors environmental impact on water bodies, soil, and fauna; and develops integrated pest management.

Ecuador

Mining Development and Environmental Control -- Technical Assistance (Approved FY94)

$14 million, IBRD
$24 million, total project cost

Implementing Agency: Mininistry of Energy and Mines

Task Manager: Richter

This project attracts new mining investment and supports the development of increased, yet environmentally sustainable, mineral production. Environmental Assessment (EA) recommendations have been used extensively in project design. Components of the project are dedicated to environmental improvements through monitoring pollution and occupational health issues; removal of contaminating wastes in the most-sensitive areas; and a technology-upgrading subcomponent that helps to introduce and encourage environmentally sound mining and processing methods among artisanal and small-scale miners.

Ecuador

Environment Management (Approved FY96)

$15 million, IBRD
$20 million, total project cost

Implementing Agency: The Presidency / Environmental Advisory Commission (CAAM)

Task Manager: Dabbagh

This project implements a national environmental strategy; assits the Government to build up an environmental management capacity in areas within the National Environmental Action Plan: urban areas, the Gulf of Guayaquil, and the Amazon. Objectives strengthen the environmental policy analysis, program deisgn and management capability of ministries; establish and strengthen urban environmental management capability; build institutional capacity; and carry out the participatory process and technical analysis to resolve Ecuador's serious environmental problems. These objectives are achieved through the implementation of studies, workshops, public relations campaigns, demonstration sub-projects, and database development.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Haiti

Forestry and Parks Protection Technial Assistance Project (Approved FY97)

$21.5 million, IDA
$22.5 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Moreau

The overall objectives of the project is to start the initial phase of intervention for the protection of critical remnants of Haiti's forest ecosystems and for slowing the pace of degradation of Haiti's natural resources. Three specific objectives of the project are to provide institutional support for strengthening the Government';s capacity to develop,monitor, and enforce a national forest and parks protection system; initiate key activities to protect and manage 2 national parks and 1 national forest reserve; and to reduce pressure on protected areas by increasing on-farm productivity and off-farm employment options, and ehancing the management capacity of local organizations in the buffer areas of the three targeted areas.

Honduras

Environment Development (Approved FY95)

$10.8 million, IDA
$12.5 million, total project cost

Implementing Agency: Seda

Task Manager: Quintero

This project strengthens the governmental agencies' capacity in environmental and natural resource planning; policy, legal, and regulatory framework development; environmental monitoring; and the enforcement of environmental laws and regulations. It assists with strengthening and implementation of a national system of environmental impact assessment that engages NGOs, communities, and the private sector in the review process and develops the environmental management capacity of selected municipalities in a manner that increases the involvement of affected organizations and individuals.

Mexico

Environment and Natural Resources (Approved FY92)

$50 million, IBRD
$127 million, total project cost

Implementing Agency: Secretariat of Urban Development and Ecology (SEDUE)

Task Manager: Demayo

This project supports the government's strategy of transforming SEDUE/SE over time into an oganization that supervises and coordinates environmental work carried out by other levels of government, federal agencies, or under contract to private sector firms. The project's specific objectives support areas where preinvestment work is well developed and institutional absorptive capacity is adequate; reform and strengthen the administrative structure of SEDUE's federal and state offices in preparation for increased decentralization of authority to state environmental agencies over the medium term; and support development of a sectoral strategy and policy framework that is integrated into the government's economic policies.

Mexico

Transport Air Quality Management (Approved FY93)

$220 million, IBRD
$1087 million, total project cost

Implementing Agency: National Finance Institution (NAFIN)

Task Manager: Mumme

This project supports a comprehensive program to reduce air pollution and control increases in emissions of nitrogen oxide, volatile organic compounds, carbon monoxide, lead, and particulate matter from transport sources. It also develops a policy framework to support transport and air quality objectives, improves the scientific base underlying the development and management of the program, and strengthens the institutional capacities to plan and implement programs effectively during the long-term.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Mexico

Second Solid Waste Management (Approved FY94)

$200 million, IBRD
$416 million, total project cost

Implementing Agency: Banco Nacional de Obras y Servicios (BANOBRAS) and The Ministry of Social Develoment (SEDESOL)

Task Manager: Stein

This project finances investment to improve solid waste services and extend their coverage in participating medium-size cities. The EA made the following recommendations: containerization and mechanical collection fulfill requirements of low cost and ease of operation; sanitary landfills are the most-suitable option for medium to small Mexican cities; high-density landfills are suitable for cities with high groundwater tables and groundwater pollution. Environmental impacts from project siting, construction, and operation are kept to a minimum through environmental screening and assessment, including public consultation of proposed subloans.

Mexico

Water and Sanitation II (Approved FY94)

$350 million, IBRD
$770 million, total project cost

Implementing Agency: Comision Nacional de Agua

Task Manager: Bengoechea

This project's objectives improve the quality and expand the coverage of water and sanitation services; strengthen the institutional capacity of CNA to assist local water utilities (WU) in management, operation and planning; train personnel in the management and maintenance of their systems; reduce subsidies by promoting development of WUs that are operationally and financially autonomous; encourage and attract private sector participation and investment; improve the management of water resources by supporting water quality programs; support BANOBRAS' efforts to appraise and supervise subprojects in the Mexico City and state offices; and strengthen the sector's capacity to enforce environmental regulations and carry out EAs.

Mexico

Northern Border Environment (Approved FY94)

$368 million, IBRD
$762 million, total project cost

Implementing Agency: Banco Nacional de Obras y Servicios (BANOBRAS) and The Ministry of Social Develoment (SEDESOL)

Task Manager: Phung

This project improves environmental quality on the U.S.- Mexican border by strengthening planning, management, and enforcement capabilities and carrying out priority investments and action plans that preserve the environment. A sectoral EA carried out for the Mexico Second Solid Waste Management Project also covered the Northern Border Environment Project, which includes a solid waste management component.

Mexico

Water Resources Management (Approved FY96)

$186.5 million, IBRD
$341.9 million, total project cost

Implementing Agency: Comision Nacional del Agua - CNA

Task Manager: Olson

This project promotes conditions for environmentally sustainable, economically efficient and equitably allocated use of water resources in Mexico, supports the integrated comprehensive management of water resources, and increases the benefits while reducing the risk related to existing hydraulic infrastructure. Objectives include: supporting groundwater conservation by reducing exploitation and contamination; promoting the restoration of surface water quality; improving meteorological services for water management, the society and economy; improving water allocation; promoting the establishment and strengthening of river basin councils; developing hydrographic region plans; and improving fee collection and the registry of water rights for users.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Mexico

Community Forestry (Approved FY97)

$15 million, IBRD
$23 million, total project cost

Implementing Agency: Secretaria de Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP)

Task Manager: Mohadjer

The objectives of this project are to improve natural resource management and conservation by community and ejido forestry resource owners and increase forestry-based income generating options.Components include assistance to Oaxaca's communities and ejidos by financing activities, assistance, and training to prepare/update management plans for timber extraction and conservation plans for forested areas; resource management and forestry research; development of silvicultural skills; control of fire and insects; understanding of boundary conflict issues; access to credit, markets, and technologies. Other components strengthen the government's certification and evaluation program for the private sector; promote non-timber forest products in the six priority states with pine-oak forest; strengthening state forestry institutions in five priority states with pine-oak forest.

OECS Countries

Solid Waste Management (Approved FY95)

$6.8 million, IBRD
$5.7 million, IDA
$50.5 million, total project cost

Implementing Agency: National Solid Waste Management Entities and the OECS Secretariat

Task Manager: Dabbagh

This project seeks to reduce public health risks and protect the the environmental integrity of the islands and their coastal and marine systems by improving domestic solid waste management facilities, and also reducing terrestrial and marine pollution through avoiding and discouraging indiscriminate disposal of solid waste on and off shore. A further objective is to enhance public health and environmental quality by strengthening the countries' capacities to effectively manage and dispose of solid waste in an environmentally sustainable manner.

Panama

Rural Poverty and Natural Resources Project (Approved FY97)

$22.5 million, IBRD
$30 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Cackler

The objectives of the project are to channel, on a pilot basis, financial resources to rural community to assist them in promoting sustainable productive systems and thereby reduce both rural poverty as well as natural resource degradation; and promote the sustainable use and conservation of selected biodiversity areas. This would be done through capacity-building at the local community level for participatory planning; establishing demand-driven financing mechanisms in high poverty areas to activities which help reduce rural poverty, improve the quality of life and offer alternatives for sustainable natural resource management and livelihood; and promoting the long-term conservation and sustainable use of Panama's biodiversity resources, including the biological corridor that passes through the Atlantic watershed.

Paraguay

Land Use Rationalization (Approved FY92)

$29 million, IBRD
$41 million, total project cost

Implementing Agency: Ministry of Hacienda and Ministry of Agriculture

Task Manager: Mckenna

This project raises the goverment's effectiveness in land titling by improving the Government's information base and the long-range planning of natural resource management; provides agricultural services; and raises fiscal revenue from the sector. The second part of this project provides a basis for strengthening the institutions responsible for land settlement and for natural resource management and protection. The project is part of a phased strategy to strengthen basic agricultural services.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Paraguay

Natural Resources Management (Approved FY94)

$50 million, IBRD
$79 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Abramovich

This project establishes an institutional framework dealing with agricultural and natural resource management; generates information through research; assists small farmers in the establishment of sustainable agricultural production; and encourages the participation of the local population in implementation. It also supports planning and implementing actions designed to slow soil degradation; protects, conserves, and restores genetic diversity; develops research, reforestation, and technology generation; strengthens environmental legislation and institutional presence in forestry reserves and national parks; and makes available grant resources to correct damages caused by the indiscriminate conversion of land for agricultural production.

Peru

Sierra Natural Resources (Approved FY97)

$51 million, IBRD
$93.2 million, total project cost

Implementing Agency:

Task Manager: Werbrouk

Trinidad and Tobago

Environmental Management (Approved FY95)

$6.25 million, IBRD
$11 million, total project cost

Implementing Agency: Ministry of Planning and Development

Task Manager: Plaza

This project establishes an environmental management agency that is responsible for the legal and regulatory framework covering all aspects of the environment in the country. Technical assistance and training help bring the newly created Environmental Management Authority to full operational capacity.

Uruguay

Natural Resources Management and Irrigation Development (Approved FY94)

$41 million, IBRD
$74 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Abramovich

This project develops and implements a soil and water management strategy by supporting environmentally sound investments in rehabilitation and development of irrigation, drainage schemes and service infrastructure; supports the development of pilot microcatchment to gain experience in the management of ecologically fragile zones. It also establishes soil and water management demonstration farms in selected agroecological zones where potential soil degradation problems have been identified. It includes priority applied research and technology transfer subprojects and provides technical assistance for forestry development and nontraditional agricultural export.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Venezuela

INPARQUES (Approved FY95)

$55 million, IBRD
$96 million, total project cost

Implementing Agency: INPARQUES

Task Manager: Plaza

This project strengthens the government's capability to manage Venezuela's national and urban parks, natural monuments, and wildlife reserves. The project focuses on strengthening conservation and protection of vulnerable areas; intensifing public environmental research, training, and education efforts; and improving the economic sustainability of the national parks and other protected areas.

Latin America and the Caribbean

Honduras

Land and Natural Resources Mgt (Approved FY97)

$35 million, IBRD
$40 million, total project cost

Implementing Agency:

Task Manager: Molnar

Institutional strengthening to complement agsac reforms in following areas: (i) land administration; (ii) natural resources management, (iii) research and extension services and (iv) biodiversity conservation.

Middle East and North Africa

Algeria

Pilot Forestry and Watershed Management (Approved FY92)

$25 million, IBRD
$37 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Stier

This project's objective develops a long-term action program to better protect and manage Algeria's natural resources, specifically its forests, watersheds, and nature conservation areas. It strengthens the institutions working in these areas and, through appropriate testing, develops the policy and technical basis for replication of suitable project components as part of a national resource management program.

Algeria

Water Supply and Sewerage Rehabilitation (Approved FY94)

$110 million, IBRD
$170 million, total project cost

Implementing Agency: Ministry of Equipment

Task Manager: Rodriguez

This project promotes water conservation by charging the true economic cost of the services to consumers. In addition, as part of a larger water supply and sewerage restructuring effort, this project seeks to rehabilitate existing wastewater treatment plants in order to prevent the spread of water pollution that is damaging to the natural environment.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Algeria

Industrial Pollution Control (Approved FY96)

$78 million, IBRD
$118.1 million, total project cost

Implementing Agency: Direction Generale de l'Environnement (DGE); Enterprise Nationale de Siderurgie (ENSIDER); Enterprise

Task Manager: Arif

The project's broad objective is to assist the Government of Algeria in reducing exposure to hazardous pollution which causes health problems or serious ecological degradation. Its specific objectives are to strengthen the institutional, legal and monitoring framework; activate a National Environmental Fund; and initiative and investment program in the industrial sector of Annaba for mitigating the adverse environmental and health effects of pollution.

Egypt

Private Sector Tourism (Approved FY93)

$130 million, IBRD
$784 million, total project cost

Implementing Agency: Ministry of Tourism

Task Manager: Graham

This project provides financial support for water supply and sewage and solid waste collection and disposal facilities for tourist resorts; provides technical assistance and training to develop environmental guidelines and enforce rules; and helps to strengthen the institutional framework for environmentally sound developments. An associated GEF component supports the development and implementation of a coastal zone environmental management plan for the Red Sea coast.

Egypt

Matruh Resource Management (Approved FY93)

$22 million, IDA
$31 million, total project cost

Implementing Agency: Ministry of Agriculture and Land

Task Manager: Al-Salihi

This project supports natural resource management to conserve the area's water, land, and vegetation; promotes adaptive research, extension services, and training directed to local communities; provides rural finance with special attention to on-farm and off-farm income-generating activities targeted to small farmers, the landless, and women; and strengthens community participation and dialogue with existing local institutions.

Egypt

Pollution Abatement (Approved FY96)

$20 million, IBRD
$15 million, IDA
$50.5 million, total project cost

Implementing Agency: Egyptian Environmental Affairs Agency

Task Manager: Arif

This project assists the Government of Egypt in reducing industrial pollution causing adverse health effects and/or ecological degradation. Its specific objectives are to strengthen the monitoring and enforcement capabilities of the environmental institutions and establish technical and financial mechanisms for supporting pollution abatement investments in Greater Cairo, Alexandria, and the Suez Canal cities of Suez and Ismailia.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Lebanon

Solid Waste & Environmental Management (Approved FY95)

$55 million, IBRD
$135 million, total project cost

Implementing Agency: Council for Development and Reconstruction (CDR) and the Ministry of Municipality and Rural Affairs

Task Manager: Arif

This project completes the rehabilitation of solid waste collection and disposal systems envisaged under the National Emergency Reconstruction Program; improves the collection and disposal of hospital waste; strengthens the government and private sector capabilities for solid waste management; and helps to develop a coastal zone management plan that protects the Lebanese coast from further degradation.

Lebanon

Coastal Pollution Control (Approved FY97)

$53.1 million, IBRD
$308 million, total project cost

Implementing Agency: Council for Development and Reconstruction (CDR) & Ministry of Hydrolic & Energy Resources

Task Manager: Rasmusson

The objectives of the projects are to improve sanitary and environmental conditions in three major urban areas (Kesrouan, Saida and Sour) of Lebanon's coastal zone. It will extend water supply and wastewater services, reduce groundwater and surface water pollution, reduce pollution in the sea to restore beaches for recreational use, and ensure satisfactory operation and maintenance of equipment installed for rehabilitation, and restructure the water and sanitation sector to achieve improved services through commercial operation and increased private sector participation.

Morocco

Second Forestry Development (Approved FY90)

$49 million, IBRD
$100 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Stier

This project strengthens forestry planning and policy and assists Morocco in maintaining and improving its forestry potential and protects its watersheds in harmony with other demands such as domestic stock grazing. Components are: forestry planning including national forest inventory, demarcation, management and a national reforestation plan; field operations paid by the communes, consisting of regeneration of the natural forest, plantation establishment, watershed, forest range and pest management, stabilization of dunes, road construction and rehabilitation; supports nature conservation, forest research, staff housing rehabilitation, equipment purchases, training and technical assistance.

Morocco

Environmental Management (Approved FY94)

$6 million, IBRD
$11 million, total project cost

Implementing Agency: Under Secretariat of the Environment (USE)

Task Manager: Eguchi

This project assists the Government in strengthening its institutional and regulatory framework for managing environmental protection. It is expected that the establishment of the needed environmental institutions and full development of the necessary environmental laws would require a concerted and long term effort spanning several years. The project-representing the first step of such efforts-defines the elements for and initiates the process of strengthening the Government's environmental capacities.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Tunisia

Second Forestry Development (Approved FY93)

$69 million, IBRD
$148 million, total project cost

Implementing Agency: Directorate General of Forests (DGF)

Task Manager: Sinha

This project supports the sustainable development and management of forests with the active participation of forestry populations through institutional and infrastructure strengthening; preparation of environmental management plans; establishment of plantations; rehabilitation of prairies; and support for studies and training.

Tunisia

Northwest Mountainous Areas Development (Approved FY94)

$28 million, IBRD
$50 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Mselleti

This project aims to arrest degradation of the natural resource base through active participation of village communities. It supports improvement of the management and productivity of range and farm land; measures to reduce erosion, runoff, and reservoir sedimentation; and increased involvement of village organizations. It also supports strengthening of the technical and implementation capability of the executing agency and the planning capability of village committees through technical assistance and training.

Tunisia

Natural Resources Management Project (Approved FY97)

$26.5 million, IBRD
$51.3 million, total project cost

Implementing Agency: Ministry of Agriculture, General Directorates of Finance & Incentives and Regional Agricultural

Task Manager: Msellati

The objectives of the project are sustainable natural resources management, in particular of crop and rangeland in severaly degraded zones, and agricultural productivity improvements, attained with greater involvement of resources users in development programs. The strategies for achieving project objectives are to improve natural resources management, preserving resources, and where feasible, helping to reverse degradation by developing integrated land management practices, controlling land ersosion and introducing new technologies; improving rural communities' standard of living by implementing Participatory Development Plans that strengthen public-community partnerships and increase ownership; support Ministry of Agriculture decentralization by introduces participatory approaches, enhancing policy analysis and project planning/ implementation.

Yemen, Republic of

Land and Water Conservation (Approved FY92)

$33 million, IDA
$48 million, total project cost

Implementing Agency: GDI/Ministry of Agriculture and Water Resources (MAWR)

Task Manager: Khan

This project, to be implemented over a period of six years, consists of technical developments in irrigation and in forestry and land conservation; institutional strengthening of the MAWR agencies responsible for the water resources sector, forestry and pilot activities; and developing approaches for watershed management.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

South Asia

Bangladesh

Forest Resources Management (Approved FY92)

$50 million, IDA
$59 million, total project cost

Implementing Agency: Forest Department

Task Manager: Baykal

This project improves and institutionalizes the Resource Information Management System which evolved under the Second Forestry Project; integrates environmental and socio-economic factors; implements a pilot scheme for people's participation in forest development; expands forest resources through plantation establishment and improved management; formulates management plans for nature conservation areas; and supports investments in selected sanctuaries and parks. Also included in the objectives are streamlining and creating within FD an effective environmental management capability; and supporting professional and technical education, training and research.

Bhutan

Third Forest Development (Approved FY94)

$5 million, IDA
$9 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Keil

This project develops and implements an approach for sustainable protection, management, and use of forest resources by involving rural communities in improving and managing forests and increasing the level of economic activity through social foresty practices. It also supports adoption of multiple-use management of forest lands; rehabilitation of degraded forests to maintain their economic and environmental benefits; and improvement of the planning and implementation capacity of the Department of Forests.

India

Integrated Watershed Development (Hills) (Approved FY90)

$75 million, IDA
$75 million, total project cost

Implementing Agency: Government of India (GOI)/NWDB

Task Manager: Jain

The main objective of this project is to slow and reverse degradation of the natural environment, through the use of appropriate soil and moisture conservation technology. The aim is to lay the foundation for sustainable increases in production to keep pace with population growth. The project promotes known vegetative technologies and verifies others; develops approaches for coordinated interactive planning; and strengthens the management and use of non-arable lands.

India

Integrated Watershed Development (Plains) (Approved FY90)

$55 million, IDA
$55 million, total project cost

Implementing Agency: Ministry of Agriculture and Governments of Gujarat, Orissa, Raja

Task Manager: Jain

This project includes watershed development works consisting of a menu of eligible land treatments to arrest the productivity decline on arable and private lands, and to restore ground cover on non arable (public and communal) lands; technical support through improvements in location; specific research and nursery development; project implementation support to strengthen project administration; physical planning and a geographical information system; and monitoring and evaluation. It also includes training and technical assitance to promote soil and moisture conservation technologies and participatory planning and sustainable resource management.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

India

Industrial Pollution Control (Approved FY91)

$124 million, IBRD
$32.6 million, IDA
$235.6 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Vergara

This project supports the Government of India's efforts to prevent environmental degredation due to industrial operations; assists in identifying and implementing a cost effective program for industrial pollution monitoring, control and abatement; promotes enforcement of legislation on environmental protection regarding industrial sources; supports efforts by industries to comply with regulations; and supports extension services and research in waste minimization, source recovery and pollution abatement. Components include: strenthening the Central and State Pollution Control Boards in four selected states; investing in industries that comply with regulations; supporting the set up of common treatment facilities; and technical assistance.

India

Maharashtra Forestry (Approved FY92)

$124 million, IDA
$142 million, total project cost

Implementing Agency: Forest Dept. of Themaharastra

Task Manager: Keil

This project undertakes several sector reforms through the reorganization of the public forest administration, and an active role of the NGOs, village panchayats, cooperatives and private sector. These reforms consist of improving the state's technical capability particularly in the field of seed production, genetic planting material, nursery and planting practices; planning, management and monitoring the forest resource base; training; and rationalizing the policies and regulations constraining the sector. The project also supports five discrete investment activities related to land treatment.

India

Renewable Resources Development (Approved FY93)

$75 million, IBRD
$115 million, IDA
$440 million, total project cost

Implementing Agency: Indian Renewable Energy Devlp. Agency Ltd. (IREDA), Tamil Nadu Newsprint and Papers Ltd. (TNPL)

Task Manager: Manzo

This project promotes commercialization of renewable resources technologies by financing private sector investments in alternate energy subprojects, including irrigation-based small hydros, wind farms, and solar photovoltaic systems. It expands bagasse-based paper mills and creates marketing and financing mechanisms for the sale and delivery of alternate energy systems. It includes technical assistance for institutional development and the promotion of renewable energy technologies. The GEF component supports development of wind, solar, and photovoltaic capacity and provides technical assistance.

India

Uttar Pradesh Sodic Lands Reclamation (Approved FY93)

$55 million, IDA
$80 million, total project cost

Implementing Agency: Government of Uttar Pradesh (GOUP)

Task Manager: Balasubramanian

This project develops concomitant models for environmental protection and improved agricultural production through reclamation of sodic lands; strengthens local institutions, enabling the effective management of such programs with strong beneficiary participation and NGO support; and supports the development and dissemination of agricultural and reclamation technology.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

India

Andhra Pradesh Forestry (Approved FY94)

$77 million, IDA
$89 million, total project cost

Implementing Agency: Forest Department (FD) and Government of Andhra Pradesh (GOAP)

Task Manager: Keil

This project maintains and improves biodiversity and develops sustainable management systems that foster participation and sharing of benefits by village communities, particularly in forest areas that are home to tribal groups. It supports forest regeneration and rehabilitation; improvement of adaptive research and silviculture management; and joint forest management training in participatory rural appraisal. It has provided institutional support to the nature conservation program through development of an integrated protected areas system; studies; boundary demarcations; fire protection; upgrading of roads; habitat improvement; captive breeding programs; and ecodevelopment in selected parks and sanctuaries.

India

Forestry Research Education and Extension (Approved FY94)

$47 million, IDA
$56 million, total project cost

Implementing Agency: The Indian Council for Forestry Research and Education (ICFRE)

Task Manager: Hill

This project supports research on and development of methods for the conservation of biodiversity. Components include development and implementation of programs for ecodevelopment in two protected areas; financing of a range of ecodevelopment activities and concurrent improvements in the planning and management of protected areas; support for research aimed at improving protected area management and the implementation of ecodevelopment; and a program to monitor socioeconomic and ecological changes. In addition, it supports the involvement of local communities in the planning and implementation of ecodevelopment programs.

India

Industrial Pollution Prevention (Approved FY95)

$143 million, IBRD
$25 million, IDA
$352.5 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Vergara

This project promotes cost-effective abatement of industrial pollution through components that support institutional strengthening of state pollution control boards and investments by individual firms for pollution abatement with a focus in minimization of waste and cleaner production methods. It renews financing for common effluent treatment plants for treating wastewater and solid materials at industrial sites with a concentration in small sized industries. A technical assistance component supports the development, diffusion, and transfer of technologes with environmental benefits.

India

Madhya Pradesh Forestry (Approved FY95)

$58 million, IDA
$67 million, total project cost

Implementing Agency: Forest Department (FD) and Government of Madhya Pradesh (GOMP)

Task Manager: Hill

This project supports improvements for the Madhya Pradesh forestry sector, including innovative programs for participatory forest management. It involves forest regeneration and improved silvicultural practices; improved implementation, monitoring, and evaluation; a village resource development program based on participatory planning and the integration of forest management and protection with activities to generate alternative incomes to reduce pressures on the forest; forestry research, extension, and technology improvements; and biodiversity conservation through management of twelve protected areas while supporting the development of alternative resources for local communities.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

India

Coal Environment and Social Mitigation (Approved FY96)

$65 million, IDA
$80 million, total project cost

Implementing Agency: Coal India Ltd.

Task Manager: Pollak

The project assists Coal India in making coal production more environmentally and socially sustainable. This includes technical assistance to enhance Coal India's capacity to deal more effectively with the enviornmental and social issues of coal mining operations; the implementation of Environmental Action Plans, Rehabilitation Action Plans, and Indigenous Peoples Development Plans for 25 proposed mines in India; and a a review, and if required, implementation of a program of remedioal action of the resettlement and rehabililtation measures taken by Coal India in implementing projects that have received bank Group support in the past.

India

Hydrology (Approved FY96)

$142 million, IDA
$178.3 million, total project cost

Implementing Agency: Ministry of Water Resources

Task Manager: Myint

This project improves the institutional and organizational arrangements, technical capabilities and physical facilities available for measurement, validation, collation, analysis, transfer and dissemination of hydrological, hydrometeorological and water quality data. It also administers basic water resource evaluations within the concerned agencies at Central Government level and in the seven participating states.

India

Bombay Sewage Disposal (Approved FY96)

$167 million, IBRD
$25 million, IDA
$280 million, total project cost

Implementing Agency: Municipality Corp of Bombay

Task Manager: Couzens

This project strengthens the capacity of the Municipality Corp of Bombay (MCGB)'s WSSD in all aspects for the management of the provision of sewerage services; sustaining the financial viability for the provision of water supply and sewerage services in Greater Bombay through direct charges to beneficiaries at appropriate levels; and improving the health and environmental conditions in Greater Bombay.

India

EcoDevelopment (Approved FY97)

$28 million, IDA
$67 million, total project cost

Implementing Agency: Ministry of Environment and Forests

Task Manager: Mott

This project would conserve biodiversity by addressing the impact of local people on protected areas (PAs) and the impact of the PAs on local people in seven widely varied sites of threatened biodiverisyt. Components comprise of improved PA management; participatory microplanning an dimplementation of reciprocal agreements including development of alternative livelihoods and resource uses; development of more effective and extensive support through research and monitoring and environmental education; preparation of future biodiversity projects dealing with additional eco-development biodiversity information and ex-situ conservation; and overal project management.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

India

Environmental Management Capacity Building (Approved FY97)

$50 million, IDA
$61.48 million, total project cost

Implementing Agency: Ministry of Environment and Forests; Department of Ocean Development; and Gujarat Department

Task Manager: Hadjitarkanian

The goal of this project is to assist the Government of India to implement its environmental priorities as outlines in the Environment Action Program - India of December 1993. The specific objective of the project is to enhance environmental management capacity to ensure effective implementation of the EAP priorities. The objective of enhancing environmental management capacity would be achieved by strenghtening environmental policy planning and administation, decentralization of selected environmental activities to local communities and non-governmental organizations, implementation of environmental law, and monitoring and compliance with environmental laws and standards in specific high priority environmental problem areas at center, state, and local government levels.

Nepal

Hill Community Forestry (Approved FY89)

$31 million, IDA
$45 million, total project cost

Implementing Agency: Forest Department

Task Manager: Hill

This project helps His Majesty's Government implement components of its Forestry Master Plan and Forestry Sector Policy, by establishing a system to conserve and expand the forest resources which sustain traditional farming systems in the Hills. Forest User Group are formed among villagers to protect, manage, and utilize areas of State-owned forests in their vicinity. FD staff are trained to provide technical and material assistance to enable these groups to properly manage the existing forests and establish and maintain new plantations in degraded areas.

Pakistan

Second Scarp Transition (Approved FY91)

$20 million, IDA
$49 million, total project cost

Implementing Agency: Agricultural Development Bank of Pakistan (ADBP)

Task Manager: Qamar

This proposed six-year project implements the government's policy of replacing STWs and PTWs in FGW areas. It comprises two subprojects, one in Punjab and one in Sindh. The Punjab subproject replaces about 1,346 STWs with PTWs in the FGW areas of the remaining part of the SCARP-I area, not covered under the STPP. The Sindh subproject is a pilot effort to test the viablility of SCARP transition in the somewhat different socio-economic conditions of Sindh. It replaces about 380 STWs with PTWs in the FGW areas of the Moro and Sakrand units of SCARP North Rohri (SNR) Project.

Pakistan

Environmental Protection and Resource Conservation (Approved FY92)

$29 million, IDA
$57 million, total project cost

Implementing Agency: Gov't of Pakistan & Gov'ts of Punjab, Sindh, North-West Frontier Provinces and Azad Jammu and Kashmir

Task Manager: Saddington

This project is the first phase in a long-term program to improve Pakistan's natural resource management. It has two components, institutional strengthening and environment and natural resource rehabilitation. Its objectives are to initiate the strengthening of federal and provincial environmental protection institutions. It strengthens environmental legislation and initiates policies and programs; disseminates information concerning damage to the environment and natural resources to policy makers, government officials, and the public; strengthens professional education; and implements subprojects to rehabilitate, protect, develop and manage agro-ecological resources which have been damaged or threatened.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Pakistan

Fordwah E. Sadiquia Irrigation and Drainage (Approved FY93)

$54 million, IDA
$71 million, total project cost

Implementing Agency: Punjab Irrigation and Agricultural Department, and Water and Power Development Authority

Task Manager: Ahmad

This project supports efforts to control waterlogging and salinity through improved water management and increases efficient delivery of canals and watercourses. It also improves water conservation by: recovering and limiting seepage; provides a network of surface drains to evacuate storm water runoff; provides technical assistance to implementing agencies and for staff training; and supports the monitoring and evaluation of the project's impact on groundwater levels and agriculture production.

Pakistan

Northern Resource Management (Approved FY93)

$29 million, IDA
$40 million, total project cost

Implementing Agency: Azad Jammu and Kashmir

Task Manager: Motha

This project provides the basis for the sustainable and economically efficient use of land resources in Azad Jammu and Kashmir by: improving the policy framework; restructuring and strengthening the main institutions that manage and protect land resources in the area; and testing programs in which communities take management and financial responsibility for planning and implementing activities for sustainable resource management.

Pakistan

Balochistan Natural Resource Management (Approved FY94)

$15 million, IDA
$18 million, total project cost

Implementing Agency: Government of Balochistan

Task Manager: Sheikh

This project represents the first phase of long-term support to improve Balochistan's protection of its environment and management of its natural resources. It also strengthens the principal environmental institutions through formulating policy, legislation, and regulations; monitors natural resource management; and provides training, technical assistance, and support staff. It supports site-specific methods of rehabilitation and development of degraded forests, watersheds, rangelands, coastal areas, and natural habitats and the efficient, sustainable use of groundwater, especially by eliminating government subsidies for drilling tubewells.

Pakistan

Punjab Forest Sector Development (Approved FY95)

$24.9 million, IDA
$33.8 million, total project cost

Implementing Agency: Punjab Forest Department

Task Manager: Khouri

This project strengthens the Punjab Forestry Department's capabilities to assist local communities and the private sector in the development and conservation of forest and rangelands through natural, financial, and human resource management. It helps to disseminate technology and information required to promote farmers' involvement in nursery and timber production; develops and strengthens community organizations to manage scrub forests and rangelands jointly with public sector institutions; and implements a pilot component for the reorganization of timber plantations to enhance their environmental value.

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IBRD/IDA Projects with Primarily Environmental Objectives Approved FY97*

Sri Lanka

Forest Sector Development (Approved FY89)

$20 million, IDA
$31 million, total project cost

Implementing Agency: Ministry of Lands and Land Development (Forestry Department)

Task Manager: Khouri

This project assists the Government in improving the performance of the forestry sector in line with the economic, social, and environmental requirements of Sri Lanka by implementing part of a five-year time slice of the Forestry Master Plan. To attain this objective: all plantations and selected natural forests are brought under intensive management; the resource base is expanded by establishing new plantations; forestry education and technical training is intensified; and the institutional base is strengthened. Current forestry programs, especially those formulated and implemented with external financing, have been taken into consideration in designing the project.

Sri Lanka

Colombo Environmental Improvement (Approved FY95)

$39 million, IDA
$49 million, total project cost

Implementing Agency: Urban Development Authority (UDA), Colombo Municipal Council (CMC), and The National Water Supply and

Task Manager: Zhao

This project supports progress toward a sustainable environment for the economic and social development of the Colombo Metropolitan Area (CMA). The project focuses on solid waste services, controlling surface-and groundwater contamination from wastewater discharge, and building up the capabilities of the government in municipal waste management. The project also assists in promoting private sector participation in environment-related operations. The project finances construction of a sanitary landfill and compost facilities to replace open dumps, and equipment for hospital wastes collection, transport and disposal; wastewater collection systems in two industrial zones; and wastewater pollution abatement measures in the Beria Lake catchment area.

Sri Lanka

Environmental Action (Approved FY97)

$14.8 million, IDA
$20.7 million, total project cost

Implementing Agency: Ministry of Transport, Environment, and Women Affairs (MTEWA)

Task Manager: Serejski

The proposed project would be the initial 4-yr pphase to assist the Government in environmental planning and management. The project would support the strategy of restructuring MTEWA's Environment Division an dstrengthen the Ctrl Env Authority to carry out its analytical as well as enforcement & monitoring responsibilities; support an ongoing effort to internalize environmental considerations into the overall development planning process; and help Gov't take immediate remedial measures to reverse the trend of envt'al degradation through pilot programs of participatory approaches to enviornmental management.

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Global Environment Facility
Investment Work Program

Fiscal 1997

The following table presents the World Bank's GEF-supported investment operations that were under implementation as of June 30, 1997. As a GEF implementing agency, the Bank supports operations addressing four environmental issues: management of biological diversity, climate change, protection of international waters, and ozone layer depletion. In addition to information on the GEF-supported projects themselves, the table gives the titles in italics of associated IBRD/IDA (or other) loans and credits when a GEF project forms part of a larger World Bank-assisted initiative. The World Bank-GEF portfolio includes projects implemented not only by IBRD and IDA but also in some cases by the International Finance Corporation (IFC) and other multilateral development banks such as the Inter-American Development Bank (IDB). The difference between the GEF grant amount and total project cost is financed by domestic public and private, multilateral, bilateral, and nongovernmental organization (NGO) sources.

For more detail on the status and associated partnerships for these projects, please refer to the GEF's Quarterly Operational Report, available at the GEF Secretariat (202) 473-1128, or look for the information on the Environment Department's Web page at http://www-esd.worldbank.org/html/esd/env/envmain.htm.

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
AFRICA			
Biodiversity			
Regional (Burkina Faso, Cote d'Ivoire) **West Africa Pilot Community-Based Natural Resource and Wildlife Management**	The project will design and implement community-based wildlands and wildlife rehabilitation, utilization and conservation programs based on the "gestion de terroirs" approach at three sites totalling 4,800 square kms in the Comoe ecosystem in southwestern Burkina Faso and northern Cote d'Ivoire, an area recognized as one of the most important remaining natural savannah ecosystems in the region. The project comprises: (a) land use planning; (b) community land management; (c) capacity building and training; (d) habitat improvement and animal herd reconstruction; and (e) sustainable subsistence and commercial utilization of wildlife.	World Bank Pavy *Active*	09/95 *7.0* **13.2**
Cameroon **Biodiversity Conservation and Management**	Participatory biodiversity conservation plans are being developed and implemented for seven sites in the species-rich lowland forests of south-east Cameroon and parts of the northern savannah ecosystem. The capacity of natural resource management institutions is being strengthened through financing zoological and biological inventories, by providing equipment, training and technical assistance, and through 'twinning' between the National Herbarium and Kew Botanical Gardens and the National Herbarium of France.	World Bank Heimo *Active*	03/95 *6.0* **12.4**
Congo **Wildlands Protection and Management**	Development and implementation of management programs for five tropical forest ecosystems in the Congo, representative of the country's great ecological diversity and wealth. To achieve this objective, the project funds biodiversity inventories, the preparation of natural resource management plans for each site, training of supervisory staff and guards, and studies of the impact of the indigenous people on the environment and of how negative impacts can be mitigated.	World Bank Chabeuf *Active*	12/92 *10.0* **16.8**
Eritrea **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Eritrea's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Eritrea's first national report will be prepared.	World Bank Dewees *Active*	 *.3* **.3**
Ghana **Coastal Wetlands Management** *Environmental Resource Management Project*	Design and implementation of a Coastal Zone Management Plan to protect five environmentally-sensitive and threatened coastal Ramsar sites of global importance for migratory birds. The project includes: (a) monitoring of ecological conditions at the sites; (b) preparation and implementation of site management programs and the training of site managers and wardens; and (c) relocation of a sewage plant outlet that would have discharged into Sakumo Lagoon.	World Bank Mensah *Active*	08/92 *7.2* **8.3**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Kenya **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Kenya's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Kenya's first national report will be prepared.	World Bank/UNEP Dewees *Active*	 *.2* **.2**
Kenya **Tana River National Primate Reserve**	Development and implementation of a management plan for the Tana River National Primate Reserve, which contains the last remaining contiguous area of indigenous riverine forest along the Tana River. The Tana Reserve protects two endangered primate species, the Red Colobus and Crested Mangabey monkeys.	World Bank Kiss *Active*	11/96 *6.2* **7.1**
Madagascar **Environment Program Support** *Second Environment Program Support Program*	This project will fund: 1- mgt. planning for forests outside the protected area (PA) system, planning & zoning of new PAs, and community-based sustainable forestry mgt. and development of sustainable harvesting regimes for non-timber forest products; 2- mgt. plan development, mgt. assistance & operational expenses in priority PAs of high biological value but low near-term economic value, as well as analytical work to reform PA fee-taxation policies; 3- a rapid field inventory of Malagasi coral reef ecosystems & recommendations for marine parks; 4- technical support for regional envt. programming, training and information needs; 5- review of national policies for exporting non-timber forest products to increase value captured; 6- a comprehensive review of biodiversity outside PAs to determine its real values and to inform conservation and NRM planning; and 7- applied research & training for biodiversity mgt.	World Bank/UNDP Simeon *Active*	12/96 *20.8* **155.0**
Malawi **Lake Malawi/Nyasa Biodiversity Conservation**	Lake Malawi, Africa's third largest lake, is a unique freshwater ecosystem, home to over 500 endemic species of fish. The project will conduct faunal surveys, identify biodiversity hotspots, prepare a conservation and management plan for the lake, recommend revisions to national environmental legislation, and fund environmental training and education activities. Parallel Canadian project (C$4.2m) will finance capacity-building for research through twinning with a Canadian institution, limnology and water quality monitoring, laboratory equipment and public education.	World Bank Donovan *Active*	12/94 *5.0* **5.4**
Mauritius **Biodiversity Restoration**	This project will continue efforts to restore degraded habitat on Rodrigues, Ile aux Aigrettes and Round Island. It will propagate and reintroduce critically endangered flora and fauna on these three islands, and strengthen local technical and administrative skills for conservation and ecosystem restoration.	World Bank Post *Active*	11/95 *1.2* **1.6**
Mozambique **Transfrontier Conservation Areas Pilot and Institutional Strengthening**	This project will prepare and implement participatory management plans for three wildlife-rich border areas that are contiguous with national parks in neighboring Zimbabwe and South Africa. A major objective of the project is to protect migration corridors for big game populations that cross transnational borders.	World Bank Clement-Jones *Active*	12/96 *5.0* **8.1**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Seychelles **Biodiversity Conservation & Marine Pollution Abatement** *Environment and Transport Project*	Biodiversity conservation component comprises: (a) the restoration and preservation of the ecosystem of Aldabra Atoll by strengthening conservation management and scientific research and control of feral goats; and (b) a protection program for the Green and Hawksbill Turtles. Marine pollution component covers the analysis of the steps needed to comply with MARPOL standards for ship waste treatment and actions required to control pollution from commercial shipping, fishing and leisure craft.	World Bank Lundin *Active*	11/92 *1.8* **2.0**
Uganda **Bwindi Impenetrable National Park & Mgahinga Gorilla National Park Conservation**	The project has established a trust fund, the income from which will provide a sustainable source of funds for the management of the Bwindi Impenetrable Forest and Mgahinga Gorilla National Parks and the conservation of their biodiversity. A Trust Management Board, representative of local communities, NGOs and the government will allocate the fund's net income to selected park management, research and community ecodevelopment projects.	World Bank Kiss *Active*	01/95 *4.0* **6.3**
Climate Change			
Mali **Household Energy**	The project addresses both the demand for and supply of household energy in a country where people depend heavily on environmentally-damaging woodfuels. Consumption of these fuels will be reduced by promoting the use of more efficient stoves and through substituting woodfuels with kerosene and bottled gas through technical assistance and credit to manufacturers and marketers. In parallel, forest planning and management will be strengthened through training and technical assistance.	World Bank Sefta *Active*	06/95 *2.5* **11.1**
Mauritius **Sugar Bio-Energy Technology** *Sugar Energy Development Project*	Development and testing of technologies for gathering, storing and using sugar cane tops, leaves and residues as fuel to expand power generation by existing sugar mills. Assessing options for reducing the cost of bagasse transport and thereby also expanding its use as a generating fuel. Providing technical assistance to a Bagasse Energy Development Program coordinated by the Mauritius Sugar Authority which will develop a program to tap the long-term potential of power generation from sugar cane waste.	World Bank Wong You Cheong *Active*	02/92 *3.3* **55.1**
Senegal **Sustainable and Participatory Energy Management** *Sustainable and Participatory Energy*	Participatory, community-forest sustainable management systems in a 300,000 ha zone surrounding Niokolo-Koba National Park will be phased in over a 7-year period with the primary objectives of carbon sequestration and local income enhancement, and secondary biodiversity conservation benefits. A parallel, demand mangement and fuel substitution component, to be executed with the private sector and NGOs, will promote substitution of kerosene and liquid petroleum gas for charcoal, and will disseminate efficient charcoal stoves.	World Bank Utria *Active*	06/97 *4.7* **18.9**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency Task Manager *Project Status*	Bank Approval *GET Grant* Total Project Cost
International Waters			
Regional (Kenya, Tanzania, Uganda) **Lake Victoria Environmental Management** *Lake Victoria Environmental*	The project will address the major threats facing the Lake Victoria ecosystem, including overfishing, eutrophication and algae levels, pollution, and invasive exotic species like the water hyacinth. Actions include (a) regional cooperation in fisheries research, extension and management; (b) research and monitoring of water quality and pollution, strengthening and harmonization of pollution regulatory, incentive and enforcement systems, and priority investments in waste water management; (c) monitoring and sustainable use of wetlands; (d) control of water hyacinth; and (e) management of land use in the catchment, including soil conservation and afforestation.	World Bank Donovan *Active*	07/96 *35.0* **77.6**
EAST ASIA AND THE PACIFIC			
Biodiversity			
China **Nature Reserves Management** *Forest Resource Development & Protection*	In accordance with China's NEAP and BAP priorities, this project will prepare and implement management plans in five priority protected areas, train staff, fund physical investments, and work with communities adjacent to and within PA boundaries to create incentives for sustainable resource use. A second component will restructure a major timber industry in Changqing to promote sustainable forestry, and create a core protected area of giant panda habitat, surrounded by a limited-use production/buffer zone. The project will build technical and managerial capacity of DNR through developing a national training team for biodiversity. It will fund a national nature reserve plan, equipment, policy studies and operational research, and set up an information management system.	World Bank Shen *Active*	06/95 *17.9* **23.6**
Indonesia **Kerinci Seblat Integrated Conservation and Development** *Kerinci-Seblat Integrated Conservation &*	The project will secure the future of the biologically rich, 1 million ha. Kerinci-Seblat National Park by integrating park management and conservation with local and regional development. Park management and protection will be strengthened, based on collaborative linkages with buffer-zone communities, and local NGOs and governments. The project will stabilize land use outside the park by promoting local-community and alternate livelihood activities consistent with park conservation objectives, and by improving overall local land use to relieve pressure on the park. Biodiversity assessments in lowland forest concessions surrounding the park will contribute to better management of a permanent buffer zone in these areas. The project will strengthen regulatory guidelines for inter-provincial, regional planning; improve conservation awareness locally and in the government; provide training and extension services to villagers, park staff and local government staff; and monitor and evaluate biodiversity conservation, human impacts and sustainable development in and around the park.	World Bank Silverman *Active*	04/96 *15.0* **47.2**
Indonesia **Biodiversity Collections**	Project strengthens the capacity of the Research and Development Center for Biology (PPPB) to manage systematic collections, including the establishment of a computerized database which will serve as a basic reference tool for biodiversity inventory and monitoring. Potential information users in other sectors will provide advice on database development. Specific components include human resource development, collections maintenance and development, improvement of research facilities, and publications and user products.	World Bank Gapasin *Active*	06/94 *7.2* **11.4**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Lao PDR **Wildlife & Protected Areas Conservation** *Forest Management and Conservation Project*	The project will protect biological diversity through the designation, establishment and management of priority protected areas, the protection of associated wildlife, and the planning and implementation of community participatory programs in and around protected areas. Components include the establishment and management of at least four protected areas (NBCAs), technical assistance and conservation training with particular emphasis on the recruitment of NGOs for community mobilization, environmental monitoring and evaluation, and the design of a conservation trust fund for long-term financing.	World Bank Shen *Active*	02/94 *5.0* **20.3**
Philippines **Conservation of Priority Protected Areas** *Environment & Natural Resources Sector*	Support for government efforts to establish a core National Integrated Protected Area System (NIPAS) for ten sites over a seven year period, through financing site development and resource management. The project promotes participation of local communities in site management, and strengthens national capacity for coordination and monitoring. The Department of Environment and Natural Resources (DENR) received a grant to strengthen park infrastructure and services, and a national NGO consortium (NIPA) received a grant to provide technical assistance services and administer a livelihood fund for local communities.	World Bank Shen *Active*	05/94 *2.9 (DENR)* *17.1 (NIPA)* **22.9**
Climate Change			
China **Sichuan Gas Transmission and Distribution Rehabilitation** *Sichuan Gas Development and Conservation Project*	Rehabilitation of gas transmission and distribution systems to eliminate methane gas losses and improve pipeline network performance. Main components will focus on safety and operational efficiency of the transmission and distribution system, and selection of cost effective measures to reduce gas leakages through a program of environmental upgrades. The associated Bank project includes a gas pricing reform program which will encourage efficiency and conservation in gas consumption in the future.	World Bank Morsli *Active*	03/94 *10.0* **122.7**
China **Efficient Industrial Boilers** *Chongqing Industrial Reform*	This project will reduce greenhouse gas emissions by adapting high efficiency foreign technologies to local conditions for small and medium-sized, coal-fired industrial boilers. To assist the dissemination and effective use of efficient technologies, the project will also strengthen China's industrial-boiler engineering, operations, production management and marketing capabilities, and improve boiler technology exchange domestically. As long-term measures for barrier removal, the project will support related technical and policy studies, public awareness/information dissemination, and strengthened environmental standards for the industrial boiler sector.	World Bank Hale *Active*	12/96 *32.8* **101.4**
Indonesia **Renewable Energy Small Private Power (RESPP)** *Renewable Energy Small Private Power*	This project will catalyze the penetration of private sector, grid-based renewable energy projects into the National Power Company's (PLN) network within the framework of a least-cost electrification strategy. An identified pipeline of about 75 MW of small renewable projects, primarily biomass, sugar and and palm oil mills, and some mini-hydro, will be targeted by the project. Technical assistance will be provided to private project developers, as well as to the Directorate General of Electricity and Energy Development (DGEED) to collect and disseminate renew-able energy resource information.	World Bank Sanghvi *Active*	06/97 *4.0* **141.0**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Indonesia **Solar Home Systems (SHS)** *Solar Home Systems*	The project will catalyze market acceptance of Solar PV Home Systems within the framework of a least-cost rural electrification strategy, relying on private sector delivery/installation systems. The project will support the installation of about 200,000 such systems in up to 4 regional markets. The project will also develop a strategy and corresponding action plan to meet the modern energy needs of the rural population for whom solar PV systems represent the least-cost alternative. Project activities will strengthen the capacity of the Indonesian Agency for the Assessment and Application of Technology (BPPT) to promote solar PV systems.	World Bank Sanghvi *Active*	01/97 *24.3* **118.1**
Philippines **Leyte-Luzon Geothermal** *Leyte/Luzon Geothermal Project*	Project seeks to assist in meeting the rapidly increasing demand for electrical power using technology that substantially reduces greenhouse gas (GHG) emissions. The National Power Corporation (NPC) components of the project include the interconnection of electrical power systems of Leyte and Luzon Islands and the strengthening of the environmental and social engineering departments of NPC. The Philippine National Oil Company (PNOC) components of the project include the construction and operation of a 440 MW geothermal electric generation plant under a BOT contract, reinjection of waste gases to further reduce GHG emissions, and connection of the power station to the national grid.	World Bank Farhandi *Active*	05/94 *30.0* **1,333.6**
Thailand **Promotion of Electricity Energy Efficiency** *Distribution System & Energy Efficiency Project*	Project comprises a five year demand side management plan, which seeks to build institutional capability in the Thai electric power sector and throughout the economy. Will pursue policies and actions leading to the development, manufacturing, and adoption of energy efficient equipment and processes. Project will demonstrate potential savings, both financial and environmental, from reducing the use of fossil fuels for electricity production and will demonstrate the potential of the electric power sector to achieve these savings.	World Bank Mehta *Active*	04/93 *9.5* **89.0**

EUROPE AND CENTRAL ASIA

Biodiversity

Albania **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Albania's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Albania's first national report will be prepared.	World Bank Brylski *Active*	 *.1* **.1**
Croatia **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Croatia's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Croatia's first national report will be prepared.	World Bank Brylski *Active*	 *.1* **.1**
Czech Republic **Biodiversity Protection**	This project protects ecosystem biodiversity in three representative ecosystems (zones containing alpine meadows, lowland forests and wetlands), and supports the activity of three transnational biodiversity protection networks. It also introduces user fees and related charges for visitors and concessions in order to manage the areas in a financially sustainable manner and within their carrying capacity.	World Bank Battaglini *Active*	10/93 *2.0* **2.8**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Georgia **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Georgia's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Georgia's first national report will be prepared.	World Bank Brylski *Active*	 *.1* **.1**
Kyrgyzstan **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of the Kyrgyz Republic's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, the Kyrgyz Republic's first national report will be prepared.	World Bank Mundy *Active*	 *.1* **.1**
Lithuania **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Lithuania's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Lithuania's first national report will be prepared.	World Bank Brylski *Active*	 *.1* **.1**
Romania **Danube Delta Biodiversity**	The project aims to protect the Romanian Delta ecosystem and contribute to the conservation of biodiversity within the Delta. It will strengthen institutional capacity to monitor and manage protected areas effectively, work with local community groups to ensure sustainable resource use and restore some wetlands to their natural condition by testing various approaches and monitoring their impact.	World Bank Luca *Active*	07/94 *4.5* **4.8**
Russian Federation **Biodiversity Conservation** *Environmental Management Project*	This project consists of three components: (i) National Strategic Overview (formulation of a national biodiversity strategy, establishment of a biodiversity database/information system, and preparation of guidelines on economic evaluation of biodiversity investments and policies); (ii) Nature Protection (institutional support, training, immediate assistance to critical PAs, and model ecotourism projects); and (iii) Integrated Regional Development/Natural Resource Management in the Lake Baikal Region.	World Bank Bond *Active*	05/96 *20.1* **26.0**
Slovak Republic **Biodiversity Protection**	This project in the Morava floodplain, Tatras forests, and Eastern Carpathians is developing management techniques for a biodiversity protection program, a conservation program to develop revenue generation mechanisms for the protected area system, and a program to provide support for project management coordination at the national level and at the three selected zones. Innovative features include an environmental NGO small grants program, and the development of a tri-national trans-border trust to maintain the coordinated management of the international biosphere reserve in Eastern Carpathians.	World Bank Battaglini *Active*	09/93 *2.3* **3.2**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Turkey **In-Situ Conservation of Genetic Biodiversity** *Eastern Anatolia Watershed Rehab. Project*	This project will identify and establish in-situ conservation areas for the protection of genetic resources and wild relatives of important crops and forest tree species that originated in Turkey, providing for sustainable in-situ conservation of genetic resources in cereals, horticultural crops, medicinal plants, forest trees, and pasture grasses and legumes through an integrated ecosystem approach. Project components include site surveys and inventories, gene management zones (GMZ), data management, a national plan for in-situ conservation, and institutional strengthening.	World Bank Durutan *Active*	02/93 *5.1* **5.7**
Ukraine **Danube Delta Biodiversity**	This project aims to protect the Ukrainian Delta ecosystem and contribute to the conservation of biodiversity in the Delta. It will strengthen institutional capacity to manage protected areas effectively, working with local community groups to ensure sustainable resource use, and restoring some wetlands to their natural condition. The project complements the Romanian Danube Delta project.	World Bank Stephenson *Active*	06/94 *1.5* **1.7**
Ukraine **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Ukraine's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Ukraine's first national report will be prepared.	World Bank Brylski *Active*	 *.1* **.1**
Climate Change			
Hungary **Energy-Efficiency Co-Financing Program**	To overcome critical financing barriers to investments in energy efficiency (EE) in Hungary and to promote local EE markets and capacity, the project will create an EE co-financing program to facilitate and leverage private sector capital (including domestic bank capital and credit lines with international financial institutions) for EE investments. In addition to technical assistance, it will provide partial credit guarantees, whereby funds would be reserved to cover the guarantee liability, and medium- to long-term co-financing loans, targeting three subsectors: lighting, district heating and industrial motors and processes. The project will reduce credit risk on EE financing for eligible local financial intermediaries, facilitate longer term financing terms, provide targeted technical assistance, and reduce transaction costs borne by project participants.	IFC Younger *Active*	03/97 *5.0* **25.0**
Lithuania **Klaipeda Geothermal Demonstration** *Klaipeda Geothermal Demonstration Project*	This project helps to finance construction of a demonstration geothermal plant to provide hot water to the Klaipeda district heating system, as well as modifications to the heating system to render it compatible with geothermally heated water. It will reduce annual CO2 emissions by an estimated 56,000 tons, and reduce SO2, NOx and TPM emissions significantly too.	World Bank Halldin *Active*	05/96 *6.9* **18.0**
Poland **Coal-to-Gas Project** *Environment Management Project*	The project expects to demonstrate interfuel substitution and technological innovation as a means of reducing CO2 emissions. GEF funds will be used to extend coal-to-gas conversions to medium-size boilers whose owners could not achieve acceptable financial rates of return without concessional financing.	World Bank Benmessaoud *Active*	11/94 *25.0* **48.3**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Poland **Efficient Lighting Project (PELP)**	Through the IFC, direct subsidies have been competitively awarded to domestic manufacturers of qualified compact fluorescent lighting (CFLs). Manufacturers and wholesalers will be required to pass on full savings on to retailers, who will apply a standard percentage-based mark-up, passing savings on to consumers. This has sparked demand for CFLs in Poland, demonstrating the financial and commercial benefits of energy-efficient lighting and resulting in large power savings and reduced emissions from coal-fired generation plants.	IFC Younger *Active*	06/95 *5.0* **5.0**
Russian Federation **Greenhouse Gas Reduction** *Gas Distribution Rehabilitation & Energy*	This project will develop analytical techniques for identifying and quantifying the principal sources of greenhouse gas emissions in the production, transport and utilization of natural gas. It will also develop methodologies for ranking the most cost-effective projects for reducing GHG emissions, define the criteria for asessing eligibility and incremental costs, and strengthen the institutional structures and the technical capabilities required to apply the techniques in planning and implementation.	World Bank Stuggins *Active*	12/95 *3.2* **130.9**
Ozone Depletion			
Belarus **Phaseout of Ozone-Depleting Substances**	This project will phaseout direct annual consumption of at least 806 metric tons of weighted ozone-depleting substance potential, or about 77% of Belarus' 1994 weighted consumption, through phaseout of CFCs in three refrigeration manufacturing and servicing subprojects, and five subprojects in the solvent industry. In addition, it will support a small program in technology transfer and training for the fire protection sector, and a national ODS Phaseout unit.	World Bank Shepardson *Active*	05/97 *6.9* **15.7**
Bulgaria **Ozone Depleting Substances Phase-out**	Sixty-five percent of Bulgaria's 1993, annual, weighted ozone-depleting substance consumption will be phased out (468 metric tons ODP) through sub-projects in the refrigeration, foam-blowing and solvents sectors. A recycling and servicing component will phase out further ozone-depleting substances already in use in refrigerator, and a third component will strengthen the national Phase-out Task Force.	World Bank Sarkar *Active*	11/95 *10.5* **13.5**
Hungary **Phaseout of Ozone Depleting Substances**	Over half of Hungary's 1993, annual, weighted ozone-depleting substance consumption will be phased out (approx. 1150 metric tons ODP) through 13 subprojects in the solvents, foam, aerosol, halon and refrigeration sectors, and through a recovery, recycling and reclamation component.	World Bank Kiss *Active*	11/95 *6.9* **8.4**
Poland **Phaseout of Ozone Depleting Substances**	This project will phaseout direct annual consumption of at least 1054 metric tons of weighted ozone-depleting substance potential, or about 55% of Poland's 1994 weighted consumption, through phaseout of CFCs in three refrigeration subprojects, two subprojects in other industries requiring foam-blowing, and one subproject in the medical aerosol industry. In addition, it will partially fund a non-profit foundation, Prozon, that will collect and process used refrigerants, primarily CFC-12. Finally, it will support both training in alternatives to halons in fire protection systems, and a national ODS Phaseout project management unit.	World Bank Duvigneau *Active*	03/97 *6.2* **20.2**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Russian Federation **Ozone Depleting Substance Consumption Phase-out (first tranche)**	The first of three groups of sub-projects in the GEF-supported Russian ODS Phaseout Program, this project will eliminate annual consumption of approximately 2573 metric tons of weighted, ozone-depleting substance potential, or about 5% of Russia's 1992 weighted consumption, through (a) replacing CFC propellant with hydrocarbon aerosol propellant in a major spray-products enterprise and (b) replacing CFC-12 with a propane/butane mixture in a refrigeration products enterprise.	World Bank Batstone *Active*	05/96 *8.6* **21.3**
Slovak Republic **Ozone Depleting Substances Reduction**	This project will eliminate annual consumption of 280 metric tons of weighted, ozone-depleting substance potential (23% of 1991, annual weighted consumption) through phasing out the use of chlorofluorocarbons in two Slovakian refrigeration/freezer enterprises.	IFC Widge *Active*	06/96 *3.5* **6.0**
Slovenia **Phaseout of Ozone Depleting Substances**	This project will phase out approximately 36% (345 metric tons ODP) of Slovenia's 1993, annual, weighted ozone-depleting substance potential through six subprojects in the refrigeration, foams, aerosol and solvent sectors.	World Bank Kiss *Active*	11/95 *6.2* **9.7**
GLOBAL			
Multiple Focal Areas			
Global **Small and Medium Scale Enterprise Program (pilot phase)**	This pilot program is designed to stimulate greater involvement of private, small and medium scale enterprises (SME) in GEF-eligible activities. It on-lends GEF grant funds to carefully screened financial intermediaries at long-term low interest rates. The intermediaries commit to use the funds to finance GEF-eligible small and medium scale enterprise projects, via either debt or equity investments. The Program allows the intermediaries to fund long-term loans or equity investments in relatively high-risk, experimental SME projects.	IFC Salloum *Active*	12/95 *4.3* **19.5**
Global **Small and Medium Scale Enterprise Program (replenishment)**	Building on the lessons learned from the pilot phase, this program is designed to stimulate greater involvement of private, small and medium scale enterprises (SME) in GEF-eligible activities. It on-lends GEF grant funds to carefully screened financial intermediaries at long-term low interest rates. The intermediaries commit to use the funds to finance GEF-eligible small and medium scale enterprise projects, either with debt or equity investments. The Program allows the intermediaries to fund long-term loans or equity investments in relatively high-risk, experimental SME projects where normally suitably priced capital is lacking.	IFC Salloum *Active*	05/97 *16.5* **52.5**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
LATIN AMERICA AND THE CARIBBEAN			
Biodiversity			
Bolivia **Biodiversity Conservation**	This project will protect representative samples of diverse and threatened ecosystems, and strengthen the government's institutional capacity to protect Bolivian biodiversity. Specific components of the project include support for the organization, implementation and follow-up of a National System of Protected Areas (SNAP) and the establishment of new priority protected areas. In addition, the project will include the development of alternative management systems for the protection of natural resources in buffer zones, the development of monitoring and evaluation systems, and adminstrative support.	World Bank Plaza *Active*	11/92 *4.5* **8.4**
Brazil **Brazilian Biodiversity Fund** *National Environment Project*	The project will help establish the Brazilian Biodiversity Fund (FUNBIO), to be managed by the Getulio Vargas Foundation, a private non-profit organization. An independent Board, composed of representatives from the private sector, the conservation community, academia and government, has been appointed and will be responsible for FUNBIO operational and investment policy. FUNBIO is a sinking fund with a minimum contribution target of $25 million, to be provided by GEF, the private sector, NGOs, the public sector and research institutions. The fund will provide modest long-term financing for projects consistent with biome-level priorities identified in the MMA-managed workshops in the National Biodiversity Project.	World Bank Ros Filho *Active*	04/96 *20.0* **25.0**
Brazil **National Biodiversity Project** *National Environment Project*	The project (PROBIO), to be managed by the Ministry of the Environment (MMA), will consist of (1) a series of workshops to set biome-level priorities for biodiversity conservation and development of a national biodiversity strategy, (2) establishment of a national biodiversity information network, and (3) funding of model biodiversity projects involving various combinations of public and private sector organizations. This project was developed in tandem with the Brazilian Biodiversity Fund project (FUNBIO), and strategic guidance from the biome-level workshops will help prioritize FUNBIO activities.	World Bank Ros Filho *Active*	04/96 *10.0* **20.0**
Ecuador **Biodiversity Protection**	Support for the restructuring and strengthening of the institutional capacity, regulatory and legal framework for adequate management of the National System of Protected Areas (NSPA). Project activities will focus on (i) institutional strengthening of the Ecuadorean Institute of Forestry, Natural Areas and Wildlife (INEFAN) in managing the NSPA; (ii) creation of an improved legal and regulatory framework; (iii) outreach activities to local communities, involving them in management plan development for protected areas; and (iv) investment activities for civil works and infrastructure in eight priority protected areas based on participatory management plans developed with project support.	World Bank Plaza *Active*	05/94 *7.2* **8.8**
Mexico **Protected Areas Program** *Mexico Environmental Project*	The project supports selected conservation activities on the basis of detailed management plans for ten protected area sites. The development and supervi-sion of management plans will be guided by Technical Advisory Committees, composed of representatives of local communities, non-governmental organizations, local governments and other stakeholders. An ecotourism plan will be prepared and implemented in one of the protected area sites on a pilot basis, for potential replication in other areas. An endowment fund will be established to provide stable long-term financing for basic protection and conservation activities in and around the 10 protected areas.	World Bank Constantino *Active*	03/92 *16.4 (FANP)* *8.6 (SEMARNAP)* **42.2**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Nicaragua **Atlantic Biodiversity Corridor** *Rural Municipalities Project*	The ABC project promotes the long-term integrity of a Biological Corridor along Nicaragua's Atlantic slope. It will support preparation and implementation of protected area management plans for the Corridor, and will fund subprojects in direct support of biodiversity conservation in the Corridor. It will assist local indigenous communities in demarcating their territories that abut biologically important zones. The project includes capacity-building and public awareness in protection and sustainable use of biodiversity for indigenous and non-indigenous communities in the region, as well as for municipal & regional authorities. It will support land use planning in the Corridor, a biodiversity monitoring system, and an impact assessment system for development activities as well as means to enforce mitigating measures. These activities will be closely coordinated with traditional community development activities in the Corridor supported by the associated IDA Credit.	World Bank Constantino *Active*	06/97 *7.1* **21.5**
Peru **National Trust Fund for Protected Areas**	The GET will provide seed money for the Trust Fund for Conservation of Peru's Parks and Protected Areas (FONANPE). Annual revenue from the trust will finance management activities -- including training, management plans, operational costs, salaries, awareness programs and buffer zone alternative livelihood activities -- for three key protected areas: Manu National Park and Biosphere Reserve, Noroeste Biosphere Reserve and Rio Abiseo National Park. As the fund grows through outside contributions, additional protected areas will receive support. GTZ is providing parallel financing to support the National Institute of Natural Resources (INRENA) and recurrent expenses of FONANPE's administrative agency, PROFONANPE, during 1995. The GTZ parallel grant also finances development of a master plan for all Peruvian protected areas and a 2-year NGO small grants program for sustainable, integrated conservation and development projects.	World Bank Alderman *Active*	03/95 *5.0* **7.9**

Climate Change

Regional (Caribbean) **Planning for Adaptation to Climate Change**	The project will support Caribbean countries in preparing to cope with adverse effects of climate change, and particularly sea level rise. It will (i) strengthen the regional capacity to monitor and analyze sea-level dynamics and trends; (ii) identify areas particularly vulnerable to the adverse effects of climate change; (iii) develop an integrated management and planning framework for cost-effective response and adaptation to climate change in coastal and marine areas; (iv) provide training and institutional strengthening to enhance regional and national capacities for preparing for climate change; (v) identify and assess policy options (protection, retreat, accommodation) and instruments that would initiate long-term adaptation to climate change; and (vi) assist information sharing.	World Bank Alderman *Active*	03/97 *6.3* **6.3**
Costa Rica **Tejona Wind Power** *Electric Power Development Loan*	The project will consist of installing a sufficient number of wind turbines (between 40-100 units) to generate 20 MW at Tejona, near Lake Arenal. In addition to the wind turbines, the project would add a control center for the wind power plant and a connection to the power grid. Through this project, wind power will displace thermal power plants that would otherwise have been built and thereby reduce CO2 emissions by approximately 60,000 tons per year.	IDB Fischer *Active*	12/93 *3.3* **31.3**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Egypt **Red Sea Coastal and Marine Resource Management** *Private Sector Tourism Infrastructure &*	The project will support the development and implementation of policies, plans and regulations that ensure that economic development in the Red Sea is consistent with sound environmental management to protect the shared marine resources of the Red Sea coastal zone. Project components include institutional strengthening, development of public-private partnerships to ensure sustainable environmental management, data analysis and system monitoring.	World Bank Graham *Active*	11/92 *4.8* **5.7**
Tunisia **Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties**	Formulate strategies and actions necessary for the protection and sustainable use of Tunisia's biodiversity, as well as prepare a plan for their implementation. The primary product will be a BSAP. In addition, Tunisia's first national report will be prepared.	World Bank Cabal *Active*	 *.1* **.1**
Climate Change			
Morocco **Repowering of Power Plant**	Repowering of an existing plant with a second generation advanced combustion turbine, together with improvements in the quality of the materials and enhancement of the scheme's performance in the power generating system of Morocco. Close monitoring of the project's impact and careful analysis of the findings will help determine its wider applicability for use throughout the country.	World Bank Larrieu *Active*	09/94 *6.0* **45.7**
Tunisia **Solar Water Heating**	The project will promote the commercialization of solar water heating technology in the residential and tertiary sectors by conditioning the market for sustained penetration of the technology as a least-cost alternative under competitive market conditions.	World Bank Savorelli *Active*	11/94 *4.0* **20.9**
International Waters			
Regional (Algeria, Morocco, Tunisia) **Oil Pollution Management Project for the Southwest Mediterranean Sea** *Morocco Port Sector Loan*	The project aims to: (a) reduce the input of hydrocarbons into the international waters of the Mediterranean; (b) ensure commonality of approach, regulatory policies, and methodologies; (c) promote exchange of information and coordination of implementation; (d) utilize national data sets to assess long term regional trends in marine pollution, both for national coastal waters and for adjacent international waters; (e) enhance the national monitoring capability; and (F) develop a coastal environmental management framework.	World Bank Ben-Slimane *Active*	04/94 *18.3* **20.0**
Regional (Algeria, Morocco, Tunisia) **Oil Pollution Management Project for the Southwest Mediterranean Sea** *Algeria Third Ports*	The project aims to: (a) reduce the input of hydrocarbons into the international waters of the Mediterranean; (b) ensure commonality of approach, regulatory policies, and methodologies; (c) promote exchange of information and coordination of implementation; (d) utilize national data sets to assess long term regional trends in marine pollution, both for national coastal waters and for adjacent international waters; (e) enhance the national monitoring capability; and (F) develop a coastal environmental management framework.	World Bank Ben-Slimane *Active*	04/94 *18.3* **20.0**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Jamaica **Demand Side Management Demonstration**	Strengthening of the institutional capabilities of Jamaica Public Service Company (JPSCo), and implementation of an integrated approach to energy conservation. JPSCo. will acquire the necessary information and data to develop sustainable programs that overcome market barriers to energy conservation. Mechanisms to address these barriers will be tested, and evaluation results will be used to design full scale sustainable long-term energy efficiency programs. The project will demonstrate the viability of energy savings and efficiency in the commercial, residential and industrial sectors and the long-term sustainability of retrofitting.	World Bank Mian *Active*	03/94 *3.8* **12.5**
Mexico **High Efficiency Lighting Pilot**	The project will reduce greenhouse gas emissions as well as local environmental contamination through the replacement of incandescent bulbs with fluorescent light bulbs in two major markets: Guadalajara and Monterrey. Project will also work to increase institutional capacity for technological change and energy conservation, and strengthen the Federal Electricity Commission (CFE) and its capacity to practice demand side management on a sustainable basis.	World Bank Cosenza *Active*	03/94 *10.0* **23.0**
International Waters			
Regional (Org. of Eastern Caribbean States) **Ship-Generated Waste Management** *OECS Solid Waste Management Project*	Project will assist OECS governments in reducing pollution of international and territorial waters caused by the discharge of ship-generated solid wastes by supporting appropriate actions aimed at improving collection, treatment and disposal of these wastes. Project includes national components consisting of the establishment of port-waste reception facilities and incremental expansion of landfill sites to handle ship-generated wastes, together with a regional component comprised of support activities and technical assistance for project management, training and education, establishment of common legal framework for ship waste management, recycling possibilities and public awareness programs. Project activities will also protect critical habitat for the endangered Grenada dove.	World Bank Dabbagh *Active*	05/95 *12.5* **50.5**
Regional (Wider Caribbean) **Wider Caribbean Initiative for Ship-Generated Waste**	Project activities will lay the foundation for countries in the Wider Caribbean Region to ratify and implement the MARPOL 73/78 Convention, ending discharge of ship-generated wastes into international and territorial waters. Technical assistance will be provided for studies leading to a regional strategy for the implemenation of MARPOL 73/78, assessment of existing waste management systems, formulation of criteria for waste reception facilities at ports, development of integrated waste management alternatives, and public awareness programs. The project will also support periodic regional consultative meetings to reach consensus on different elements of a regional MARPOL strategy.	World Bank Dabbagh *Active*	06/94 *5.5* **5.5**
MIDDLE EAST AND NORTH AFRICA			
Biodiversity			
Algeria **El Kala National Park and Wetlands Management**	The project will develop and implement a management plan for the National Park and wetland complex in the El Tarf Wilaya, including undertaking base-line studies, protected area management, natural resource use development, monitoring and adaptive research, environmental education, institutional strengthening and establishing a conservation fund for NGOs and other local environmental groups.	World Bank Msellati *Active*	04/94 *9.2* **11.6**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency / Task Manager / *Project Status*	Bank Approval / *GET Grant* / Total Project Cost
Regional (Algeria, Morocco, Tunisia) **Oil Pollution Management Project for the Southwest Mediterranean Sea** *Tunisia Fisheries II*	The project aims to: (a) reduce the input of hydrocarbons into the international waters of the Mediterranean; (b) ensure commonality of approach, regulatory policies, and methodologies; (c) promote exchange of information and coordination of implementation; (d) utilize national data sets to assess long term regional trends in marine pollution, both for national coastal waters and for adjacent international waters; (e) enhance the national monitoring capability; and (F) develop a coastal environmental management framework.	World Bank Ben-Slimane *Active*	04/94 *18.3* **20.0**
Jordan **Gulf of Aqaba Environmental Action Plan**	As part of the regional Environmental Action Plan for the Gulf of Aqaba, the project will (a) develop regional collaborative mechanisms for strengthening the capacity to protect coastal zone and marine biodiversity; (b) develop and enforce the legal framework and regulations for control of transboundary pollution; (c) provide safeguards against oil pollution; (d) establish and implement guidelines for sustainable development of the coastal zone; (e) assess the effects of wastewater seepage on the quality and level of the transboundary water table; (f) implement a plan to control solid waste impacts on marine and coastal waters; and (g) demarcate and manage a marine protected area.	World Bank Glineur *Active*	06/96 *2.7* **12.7**

SOUTH ASIA

Biodiversity

Bhutan **Trust Fund for Environmental Conservation**	The trust fund provides reliable recurrent funding for the establishment and management of a national system of protected areas, and development of the institutional and human resource capacities needed to manage the national system. This project is testing the feasibility of a trust fund mechanism for providing long-term, sustainable finance for biological conservation programs in the protected areas.	World Bank Mott *Active*	05/92 *10.0* **17.6**
India **Ecodevelopment** *Ecodevelopment Project*	Project integrates conservation & development objectives in 7 threatened, priority sites representative of India's varied ecosystems. It supports improved protected area management, emphasizing joint management with local communities; the design and financing of village development plans and agreements that address the negative interactions of local communities on biodiversity and vice-versa; and research (biological and policy), education, and institution-building to improve knowledge of, and support and capacity for, ecodevelopment and conservation activities.	World Bank Mott *Active*	09/96 *20.0* **67.0**

Climate Change

India **Alternate Energy** *Renewable Resource Management Project*	Project promotes and commercializes investment in wind farms and solar photovoltaic power systems through the provision of below-market loans to investors in these systems, primarily from the private sector. Popularizes renewable technologies through public education programs that explain their functions and capacity. Implementation is overseen by the Indian Renewable Energy Development Agency, which is benefitting from capacity-building assistance.	World Bank Manzo *Active*	11/92 *26.0* **186.0**

Global Environment Facility Investment Work Program

Country/Project/ *Associated Bank Project*	Project Description	Implementing Agency Task Manager *Project Status*	Bank Approval *GET Grant* Total Project Cost
Sri Lanka **Energy Services Delivery** *Energy Services Delivery Project*	This project will encourage participation of the private sector, NGOs and cooperatives in the provision grid and off-grid energy services, and strengthen the public and private institutional capacity to deliver energy services through renewable energy technologies and demand-side management (DSM). Its specific components will be (a) a private sector renewable energy fund to support pre-grid, PV electrification, mini-hydro schemes and other renewable energy sources; (b) a pilot grid-connected wind farm (3MW); and (c) technical assistance for the use of renewable energy in residential and commercial sectors, for the Ceylon Electricity Board (CEB) to prepare a DSM action plan and a National Renewable Energy Strategy, for CEB to facilitate small private power investments and pre-electrification, and for management of the renewable energy fund.	World Bank Schaeffer *Active*	03/97 *5.9* **55.3**

Montreal Protocol
Projects to Protect the Ozone Layer

Fiscal 1997

The following table presents the World Bank's Multilateral Fund-supported investment operations including project preparation activities from 1991 through June 30, 1997 administered by recipient governments. As an implementing agency of the Multilateral Fund for Implementation of the Montreal Protocol on Substances That Deplete the Ozone Layer, the Bank assists developing countries in complying with the treaty's controls on production and consumption of ozone-depleting substances (ODS). The table subdivides the World Bank ODS phaseout projects by region and country with information on the amount of funds that have been allocated to over 370 individual subprojects (not listed) being carried out under these projects. Each region has a program coordinator whose name is listed at the top of the page. The table also lists the amount of ODS (in terms of the substance's weighted ozone-depletion potential: its "ODP") that will be phased out with approved funds, ODP phased out to date, funds disbursed to date, and the status of project implementation. In many cases subproject activities have proceeded prior to funding availability. To date more than 14,000 tons of ODS have been phased out through these efforts.

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur-sements 2/	Status of Implementation
ODS Project II	393		$1,380,091	$230,323	This US$3.5 million umbrella agreement was signed in September 1995. The subgrant agreements are now under preparation.
Tunisia					
ODS Project I	530	85	$1,440,000	$1,070,604	All subgrant agreements with participating enterprises have been signed.
South Asia			**Regional Coordinator :**	**Bill Rahill**	
India					
ODS Project I	54		$1,252,000	$723,518	Implementation proceeding satisfactorily.
ODS Project II	4,982	567	$32,058,992	$6,401,197	This US$50 million umbrella grant agreement establishes the framework for procesing a large number of small projects over the next three years. As umbrella agreement not signed until May-95, subprojects approved in '93 and '94 were delayed by up to two years. This lag will no longer be an issue for future approvals. Project preparation under this grant agreement was intially supported through a Project Preparation Advance (PPA). The amount of the PPA was later adjusted to reflect the changing nature of project preparation activities.
PPA			$70,000		Agreement signed and project preparation activities underway.
PPA I - ODS Project I			$175,000	$105,708	Activities under this Project Preparation Advance have been halted. The final disbursement is being negotiated with the financial agent.
Pakistan					
ODS Project I	282		$1,998,242		The umbrella agreement under preparation will cover 3 years of ODS phaseout projects in Pakistan. Final grant agreement signature is expected by mid-1996.

1/ Metric tons
2/ Data as of June 30, 1997
PPA - Project Preparation Advance

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur-sements 2/	Status of Implementation
Uruguay					
ODS Project I	52		$1,480,719	$317,271	A grant agreement of US$5 million was signed with the Government of Uruguay in June 1995. The Bank is working with the ozone unit in assessing the viability of ODS abatement activities in the air conditioning and commercial refrigeration sectors, including recycling initiatives.
Venezuela					
AAISA-MAC	80		$4,422,000	$3,040,756	The grant agreement is comprised of two subprojects. The legal agreement was signed in July, 1995, and implementation has begun. Conditions of effectiveness have been met and AAISA has initiated retroactive expenditure withdrawls.
Chiller Retrofits - Clinica Atias	4		$115,000	$114,598	Agreement with enterprise signed. Implementation underway.
Chiller Retrofits - Congreso de la Republica	1	1	$65,000	$0	Project implementation complete.
Chiller Retrofits - Instituto de Previncion Social del Medico	2	2	$69,000	$69,000	Project implementation is complete resulting in 2.4 ODP phaseout.
Chiller Retrofits - Replacement of CFC by HFC-134a as a refrigerant in central air conditioning units			$851,000	$0	Project cancelled.
FAACA-MAC	90	13	$3,480,000	$2,442,844	Grant agreement was signed in January 1995. Project implementation is underway. Disbursements are proceeding rapidly. FAACA has already begun to produce HFC134a serpentine condensors, thereby eliminating 13 tons of CFC-12.
ODS Project I -- Plasticos Molanca	259	259	$1,300,000	$1,261,678	Project is complete and project completion report is on file. The plant production of expanded polystyrene has been shifted to the use of propane-butane.
Middle East and North Africa		**Regional Coordinator :**		**Bill Rahill**	
Egypt					
IFC - MCMC Compressor	292		$2,800,000	$1,850,000	Construction of the factory is complete. The technology transfer issue and general project-related difficulties which have delayed the signing of the grant agreement between the IFC and MCMC have been resolved and the grant agreement was signed in May 1995. The final disbursement will be made shortly after the final supervision mission later this year. US$700,000 grant was returned to fund as foreign-ownership share increased.
Jordan					
ODS Project I	343		$1,670,000	$893,317	All subgrant agreements have been signed and procurement of goods and services has been initiated. This project was initially approved by the EC as a line-of-grant and the entire amount has been committed. Overall progress is satisfactory albeit slower than anticipated. The closing date for the project is fast approaching and appropriate actions will be considered when discussing a possible extension.

1/ Metric tons
2/ Data as of June 30, 1997
PPA - Project Preparation Advance

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur-sements 2/	Status of Implementation
Philippines					
ODS Project I	883	244	$12,881,000	$7,568,001	Subproject implementation proceeding under the $30 million umbrella agreement. Disbursements to three subprojects with signed subgrant agreements have begun.
Thailand					
ODS Project I	1,260	171	$16,615,893	$8,243,253	The US$40 million umbrella grant agreement is effective. Subproject activity has been initiated by enterprises. The enterprises are finalizing subgrant agreements with the financial agent.
Europe and Central Asia			**Regional Coordinator :**	**Bill Rahill**	
Turkey					
IFC - ODS Project I (Assan Foam)	180		$925,000	$690,000	Project has been appraised by IFC (which is executing agency on behalf of the Bank). Grant agreement has been signed The equipment specifications have been prepared and the enterprise has initiated procurement and project implementation. First disbursement to enterprise expected shortly.
ODS Project I	754	660	$6,165,000	$6,095,622	Project under implementation. Most components are well advanced and close to completion. Substantial ODS phaseout has been achieved.
ODS Project II	535	405	$4,597,970	$2,969,651	The US$20 million umbrella grant agreement for this project has been signed and all projects are now under active implementation. Disbursements are underway.
Tek-Iz - IFC Project	155		$729,650	$600,000	
Latin America and the Caribbean			**Regional Coordinator :**	**Jessica Poppele**	
Argentina					
ODS Project I	700		$22,227,845	$891,129	Grant Agreement signed Jan 9, 1997. Effectiveness expected by March 1997. Preparation of new subprojects will begin after implementation bottlenecks have been removed.
Brazil					
ODS Project I	1,602	270	$11,740,232	$3,752,401	Subprojects are being implemented under US$10.9 million umbrella agreement.
Chile					
ODS Project I	238	113	$2,320,576	$1,189,124	Phase I will be completed and evaluated by Jun 1997. Auction for Part 1 of Phase II planned for 2Q 1997. Funds for Part 2 of Phase II will be requested in 1Q 1998
Ecuador					
ODS Project I	341	629	$1,566,000	$1,031,019	The subprojects have been completed on schedule.
Mexico					
MAC Recycling and Aerosols	36		$180,000	$53,791	The project consist of two components: CFC-12 Recycling (42%) and Aerosol Manufacturing Safety (58%).
ODS Project I (Ozone Protection Policy)	553	529	$4,252,251	$4,000,000	Subprojects are being developed and implemented under a US$4 million line-of-grant.

1/ Metric tons
2/ Data as of June 30, 1997
PPA - Project Preparation Advance

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur-sements 2/	Status of Implementation
Africa		**Regional Coordinator :**		**Bill Rahill**	
Zimbabwe					
ODS I	36		$678,679		
East Asia and the Pacific		**Regional Coordinator :**		**Ellen Tynan**	
China					
ODS Project I	15,400	7,150	$6,930,219	$6,887,418	Implementation of five subprojects complete or near completion. Grant closing extended until 6/97.
ODS Project II (50% CFC Foam)	400	687	$4,929,000	$4,236,878	Eight subprojects are completed. Final subprojects will be completed in 1996. Disbursement of operation costs will begin soon. and awaiting government confirmation of completion. Three additional projects will be completed in 1Q1996. The procurement issues have delayed implemenation of the final subproject. Closing extended until 6/30/97
ODS Project III	14,402	1,250	$66,942,690	$19,827,020	The $90 million umbrella grant agreement became effective on Nov. 30, 1995. Over twenty appraisals have been approved by the Bank and project implementation is underway. Disbursement has begun. Bank and Chinese Government reached agreement on subgrant agreement in March 1996. All subgrant agreements will be signed in 1996.
PPA I for ODS I and ODS II					PPA I is complete. These funds were used to support implementation of the China ODS Projects I and II. No money was allocated, however $600,000 from ODS II and $900,000 from ODS I was used.
PPA II for ODS III			$300,000	$300,000	Project preparation activities are complete. In addition, a sector-wide phaseout strategy for the commercial refrigeration and air-conditioning sector was prepared (12,500 tons of CFCs).
PPA III for ODS III			$240,000	$320,000	Project preparation activities are complete, including many proposals and six sector phaseout strategies. 26 foam projects, to be implemented by UNDP and the Bank, were prepared following first two workshops.
PPA-IV			$250,000	$200,000	Complete. Funds to be disbursed retroactively.
PPA-V-Halon Sector Strategy			$100,000	$50,000	Project preparation proceeding on schedule. Funds will be disbursed retroactively.
Indonesia					
ODS Project I	2,991	547	$14,909,190	$4,323,702	Subprojects are being implemented under a $17 million umbrella grant agreement. Most appraisals complete. 15 subgrant agreements signed. Subproject implementation underway.
PPA II			$170,000	$170,000	Completed.
PPA I			$250,000	$250,000	Project preparation activites are complete. 14 subproject proposals were prepared.
Malaysia					
ODS Investment Project I	923	366	$9,075,583	$2,976,906	US$20 million unbrella grant became effective in January 1996. One subproject is complete and others are under implementation.
ODS Recycling Project	1,270	370	$1,630,000	$1,239,267	Implementation of the MAC recycle subproject is complete and the halon recycling subproject is underway.

1/ Metric tons
2/ Data as of June 30, 1997
PPA - Project Preparation Advance

International Finance Corporation
Portfolio of Environmental Projects

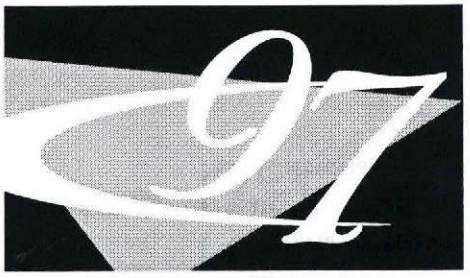
Fiscal 1997

The following table lists the International Finance Corporation's (IFC) portfolio of environmental projects approved by IFC's Board of Directors through June 30, 1997. In 1996 IFC established an Environmental Projects Unit within its Technical and Environment Department to carry out IFC's activities related to the Global Environment Facility (GEF) and the Multilateral Fund of the Montreal Protocol (MFMP). The new Unit also would act as a catalyst in identifying, developing, and structuring environmental projects for IFC's own account. In its catalytic role for IFC the Environmental Projects Unit focuses on those projects to which IFC can add value through technical expertise and financial structuring to overcome market barriers, reduce high transaction costs, and mitigate risks that otherwise would prevent companies from pursuing worthwhile environmental investments. Some of the sectors being targeted by the Unit include energy efficiency, renewable energy, advanced power technologies, clean vehicle technologies, sustainable agriculture/forestry, and ecotourism. The current portfolio consists of loans and guarantee programs for financial and nongovernmental organization (NGO) intermediaries, investment funds, and market transformation initiatives. The table lists for each project a description of the activity, the market barriers that the project addresses, and the program results.

IFC AND GLOBAL ECOSYSTEM PROJECTS

August 27, 1997

IFC GEF PROJECTS - UPDATE		
Program/Project Description	**Market Barriers**	**Overcoming Market Barriers and Program Results**
Financial and NGO Intermediaries (Loans and Guarantee Programs)		
Small & Medium Scale Enterprise (SME) Program: This IFC-administered program was replenished with $16.5 million in 1997 following a $4.3 million pilot phase. The program channels GEF funds through financial intermediaries to SMEs for renewable energy, energy efficiency, forestry, agriculture and ecotourism projects. Each intermediary receives a low interest loan of $500,000 - $1,000,000 to provide debt or equity finance to SMEs.	Term financing is scarce in developing countries. This barrier is magnified for new and small environmental businesses due to perceived high risks.	Five intermediaries, which include two venture capital funds, an international NGO, a national forestry NGO and an electrical supply company, were selected for the pilot phase. These intermediaries have committed to finance 25 SMEs with the pilot phase funding. The replenished program expects to finance an additional 75 SMEs.
Hungary Energy Efficiency Co-financing Program: IFC is administering a $5 million co-financing facility where GEF funds help finance energy efficiency projects through domestic financial intermediaries such as commercial banks and leasing companies.	Despite opportunities for investments, many financial intermediaries are unwilling to take the credit risk due to unfamiliarity with the projects and technologies.	The facility provides credit enhancement guarantees and technical assistance to energy efficient investments, builds domestic financing capacity, and expects to leverage $25-30 million for energy efficiency projects over a five year period.
Investment Funds		
Terra Capital Fund (biodiversity fund for Latin America): This proposed fund will invest in medium sized private sector ventures in sustainable forestry, agriculture and ecotourism in South America.	Many medium sized businesses in Latin America face difficulty in obtaining equity finance, particularly in the biodiversity-linked sectors targeted by the fund.	IFC (which will invest up to $5 million in the fund) and other investors will bring together investment management expertise, sector know-how and capital, and make these resources available to businesses in these sectors. GEF will provide $5 million in grant funds to cover the fund management company's incremental operating costs which result from the Fund's biodiversity focus. Actual fund investment will then be made on commercial terms.
Renewable Energy and Energy Efficiency (RE/EE) Fund: This proposed global fund will make debt and equity investments in renewable energy and energy efficiency projects.	Many RE/EE projects still attract little interest from investors because these projects represent smaller transactions and may involve newer technologies or markets.	IFC has approved an investment of up to $35 million in the fund and GEF is expected to provide $20-30 million of concessional finance for the fund to 'buy down' development costs and risks for smaller and more innovative projects. The fund will also finance larger projects and those with more established technologies on commercial terms.
Market Transformation Initiatives		
Poland Efficient Lighting Project (PELP): This three-year project is designed to stimulate the Polish market for compact fluorescent lamps (CFLs) and luminaires through a manufacturers' rebate and consumer education campaign funded by $5 million from GEF. Five local manufacturers participated in the competitively awarded grant program.	Before the program, Polish manufacturers produced CFLs only for export due to the high initial cost of CFLs to domestic customers.	Over the last two years more than 1.2 million CFLs have been sold nationally. Preliminary results indicate that concentrated levels of CFLs in selected cities have lowered electricity demand during peak use periods. A study is currently underway to evaluate market transformation effects in CFL demand after subsidies have been removed.
Photovoltaic Market Transformation Initiative (PVMTI): This program under preparation by IFC will provide up to $30 million from the GEF in concessional investments in photovoltaic market development, manufacturing, and user financing projects in India, Kenya, and Morocco.	Market penetration of photovoltaics remains slow and incremental, particularly in rural markets where transaction costs are high and end-user financing mechanisms are unavailable.	PVMTI anticipates approving funding for about 10-12 projects starting in 1998 while attracting significant additional co-financing. Private sector implementation is expected to foster sustainable projects, catalyze competition, and stimulate the formation of joint ventures and public-private partnerships.



FIFTH ANNUAL
WORLD BANK CONFERENCE
ON ENVIRONMENTALLY
AND SOCIALLY SUSTAINABLE
DEVELOPMENT

AND
ASSOCIATED EVENTS

OCTOBER 6–10, 1997
WASHINGTON, DC

PARTNERSHIPS FOR GLOBAL ECOSYSTEM MANAGEMENT: *SCIENCE, ECONOMICS AND LAW*

Welcome to the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development (ESSD5). This folder is provided to support your participation in this week's events.

In the envelope you will find your badge, badge holder, green pen, and registration form. It is essential that you fill out your badge immediately, **USING THE GREEN-INKED PEN** provided, with your name, organization, and country. This badge must be worn **visibly** at all times when participating in this week's Conference and Associated Events.

If you have not previously submitted your **registration form** via fax or mail, please fill it out now and give it to an usher during the break. This will enable us to contact you at a later date, and/or provide you with follow-up materials. You may wish to retain this envelope for calling cards and other notes.

The information in this folder is organized by panels:

Panel A (yellow sheets) contains the **Program Agendas for ESSD5** and all the **Associated Events** that you are invited to attend.

Panel B (blue sheets) contains **Fact Sheets** that address the scientific, economic, and legal issues associated with global ecosystem management issues. We hope that these background documents will prove useful as reference materials both during this week and upon your return home. Produced on recycled paper, they are not copyrighted and may be reproduced for your own use.

Panel C (green sheets) presents current **World Bank regional projects** that address global ecosystem management

issues within countries and the regions. Bank regions include East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, the Middle-East and North Africa, South Asia, and Sub-Saharan Africa.

Panel D, *this panel* (white sheets), offers **practical information** on the locations of World Bank buildings, including cafeterias and dining rooms, and a map. Asterisks (*) on the map indicate the public access entrances. Also, please find attached note paper for your use.

NOTES FOR OCTOBER 6–10, 1997

Any *remaining* inventory of the publications provided for you Monday *morning* in the Lisner Auditorium lobby will NOT be available Monday afternoon. However, they will be made available at the Tuesday afternoon plenary session. Any remaining inventory of the special publications provided for you *Monday afternoon* following the break will also be available Tuesday morning at the Thematic Roundtables and at the afternoon plenary.

Because of the very large number of people involved, and the need to adhere to the program schedule, morning and afternoon breaks on Monday will not include beverages and refreshments.

Lunch periods for the Conference and Associated Events are:

Monday	October 6	12:30 pm –2:20 pm
Tuesday	October 7	1:00 pm–2:20 pm
Wednesday	October 8	1:00 pm
Thursday	October 9	1:00 pm
Friday	October 10	1:00 pm.

All World Bank cafeterias and the Main Complex (MC) dining rooms on the C1 level will serve lunch until 2:30 pm throughout the week. Reservations for the dining rooms may be difficult to obtain, but if space is available, you will be accommodated. Payment must be in the form of cash in all cases. Credit cards are NOT accepted. Your badge must be worn at all times to allow entry to the buildings and dining facilities.

Breakfast is available from 7:30 am to 10:00 am, and lunch until 2:30 pm, in the following Bank buildings:

H Cafeteria	600 19th Street, NW
I Cafeteria	1850 I Street, NW
J Cafe	701 18th Street, NW
MC Cafeteria	1818 H Street, NW.

Dining room reservations must be made between 9:00 am and noon for lunch, and between 3:00 pm and 5:00 pm for dinner. The dining rooms and their telephone numbers are:

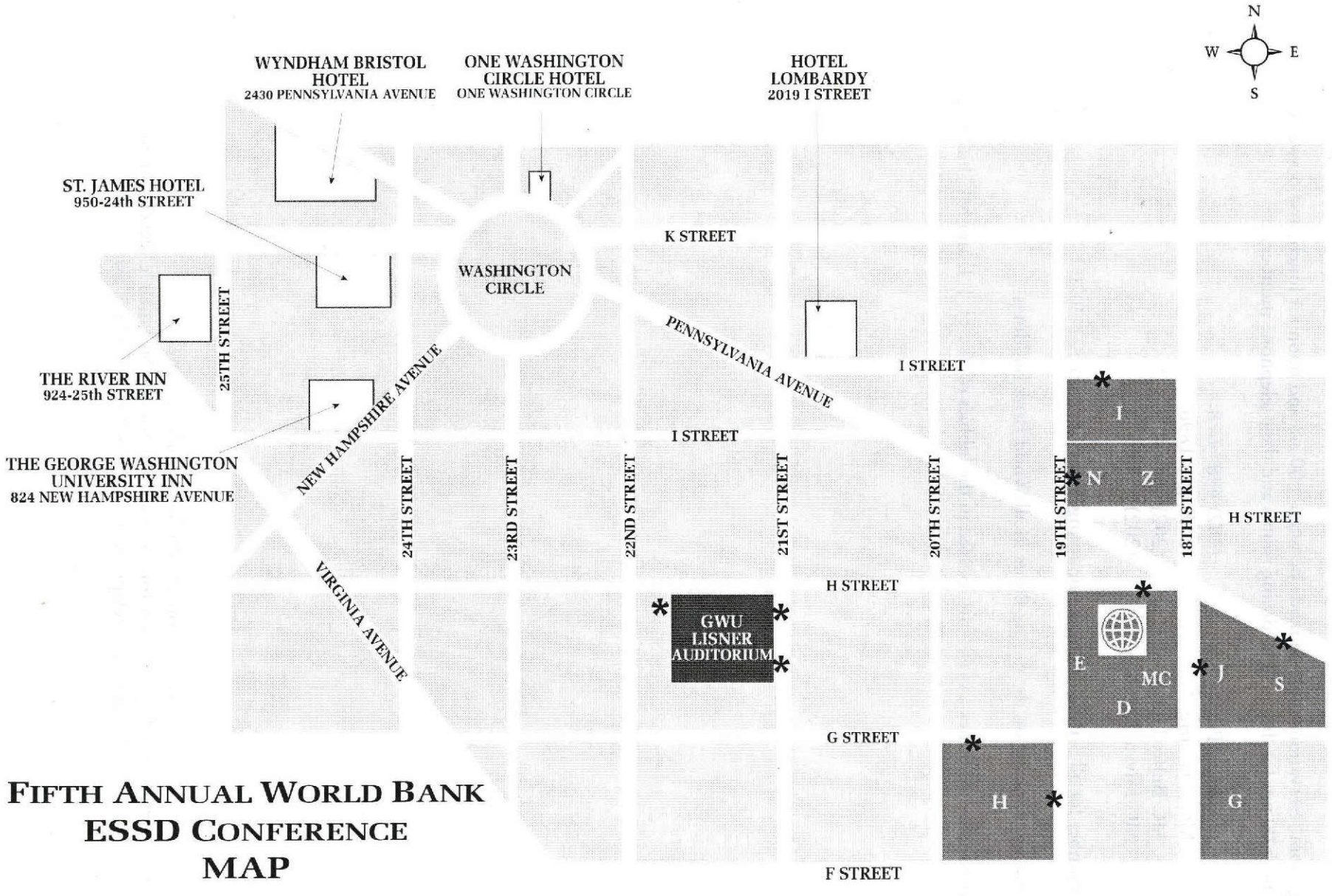
I Building Private Rooms	(202) 458-0678
MC A la carte	(202) 458-1896
MC Buffet Dining	(202) 458-0678
MC Private Rooms	(202) 458-0678.

The FAX number for all private dining room arrangements is (202) 522-2070.

Restrooms are available on the dining floors in all World Bank buildings.

Automated teller machines (ATMs) are located in the lobbies of the H, I, J, and MC buildings.

For any other information, please contact:
Vice President's Office for Environmentally and Socially Sustainable Development
MC Building, telephone (202) 473-2310 or 473-5764.



FIFTH ANNUAL WORLD BANK ESSD CONFERENCE MAP

THE GEORGE WASHINGTON UNIVERSITY building

WORLD BANK buildings (* = public access entrance)

HOTELS

All buildings are located in northwest Washington, DC.

FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

AND ASSOCIATED EVENTS

OCTOBER 6–11, 1997
WASHINGTON, DC

PROGRAM DESCRIPTIONS AND AGENDAS

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OCTOBER 6 – 11, 1997
"PARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
ESSD5 CONFERENCE						
ALL OPEN TO THE PUBLIC						
Partnerships for Global Ecosystems Management: Science, Economics and Law **Lisner Auditorium** The George Washington University 730-21st Street, NW	**Lisner Auditorium** 9:00 – 12:30 15:00 – 17:30	**Lisner Auditorium** 11:00 – 13:00 14:30 – 17:30				
THEMATIC ROUNDTABLES		9:00 – 11:00				
Climate Change **World Bank – 1st Floor** 1818 H Street, NW		**Preston Auditorium** MC Building				
Biodiversity **World Bank – Basement Level** 600-19th Street, NW *(G Street Entrance)*		**H Auditorium** **H-B1-201** H Building				
International Waters **World Bank – 3rd Floor** 700-19th Street, NW		**IMF** Meeting Hall A				
Desertification and Forests **World Bank – J-B1 Basement Level** 701-18th Street, NW		**J-B1-080** J Building				
REGIONAL ROUNDTABLES	Coordinator					
Africa **World Bank – 4th Floor** 1776 G Street, NW	**Jean-Roger Mercier** (202) 473-5565	**G-4-220** 14:30 – 17:30				
Latin America and the Caribbean **World Bank – 8th Floor** 1850-I Street, NW	**William Partridge** (202) 473-8622		**I-8-302** 9:00 – 17:30			

SCHEDULE OF EVENTS
OCTOBER 6 – 11, 1997
"PARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
ASSOCIATED EVENTS						
ALL OPEN TO THE PUBLIC						
Washington School of Law American University 4801 Massachusetts Ave, NW	**Mooers-Morella Ceremonial Courtroom (603)** 20:00 – 22:00					
Ethics and Values: A Global Perspective World Bank 600-19th Street, NW *(G Street Entrance)*			**H Auditorium** (286) H-B1-201 *All-day Session*			
Forum on Human Solidarity World Bank – 1st Floor 1818 H Street, NW			**Preston Auditorium** (350) 20:00 – 22:00			
Biotechnology and Biosafety World Bank – Basement Level 600-19th Street, NW *(G Street Entrance)*				**H Auditorium** (286) H-B1-201 *All-day Session*	**H Auditorium** (286) H-B1-201 *All-day Session*	
Coral Reefs 1997 World Bank – 1st Floor 1818 H Street, NW				**Preston Auditorium** (350) *All-day Session*	**Preston Auditorium** *All-day Session* Additional Break-out Rooms: MC-C1-108 (35) MC-13-121 (102) MC-9-414 (35) MC-10-414 (35)	MC-5-225 Break-out Sessions 9:00 – 13:00
Indicators for Natural Resources Management: A Workshop World Bank – 1st Floor 600-19th Street, NW		**H-1-200** (73) 9:00 – 13:00				
Mainstreaming Freshwater Biodiversity in Development Projects World Bank – 4th Floor 1776 G Street, NW					**G-4-220** (52) 9:30 – 16:00	
BANK GROUP LEARNING SEMINARS						
ALL OPEN TO THE PUBLIC						
El Niño: An Impetus for Strategic Management of Droughts Sponsor: EDI			**H-1-200** 14:00 – 17:00			
Desertification: The Phenomenon. Contributing and Mitigating Factors Sponsor: RDV			**J-1-050** 9:00 – 17:00			
Geographic Information Systems for Coastal Management Sponsors: ENV/LLC			**J-3-044** 14:00 – 17:00			
ALL OPEN TO THE PUBLIC						
1. GIS Workshops / 12:30 – 13:45		J-4-044 (40)	J-4-044 (40)	J-4-044 (40)	J-4-044 (40)	
2. GIS Exhibit	MC Atrium	MC Atrium	MC Atrium	MC Atrium	MC Atrium	
3. Coral Reefs Exhibit	MC Atrium	MC Atrium	MC Atrium	MC Atrium	MC Atrium	

SCHEDULE OF EVENTS
OCTOBER 6 – 11, 1997
"PARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
CONCURRENT MEETINGS						
			BY INVITATION ONLY			
Organizing Knowledge for ESSD World Bank – J Building J-B1-Basement, 11th Floor, 6th Floor and 3rd Floor 701-18th Street, NW				**J Building** (130) *All-day Session* J-B1-080	**J Building** (130) *All-day Session* Break-out Rooms: J-11-044 (43) J-6-044 (44) J-3-044 (49)	
Multinational Finance Institutions on Environmental Procedures (annual meetings) World Bank – 2nd Floor 1776 G Street, NW				**G2-220** (37) *All-day Session*	**G2-220** (37) *All-day Session*	
Water Diplomacy for the 21st Century The Museum of Natural History 10th Street and Constitution Ave, NW					**Baird Auditorium Smithsonian** *All-day Session*	
Advisory Group Meeting – Global Overlays Partnership World Bank – S Building 1750 Pennsylvania Ave, NW			**S-3-060** (22) *All-day Session*			
Task Force on Higher Education and Society Consultation World Bank – MC-C1 Level 1818 H Street, NW World Bank – J-B1 Basement 791-18th Street, NW		**World Bank Dining Room K** *Dinner*	**J-B1-075** (130) *All-day Session*			
Global Ecosystems: Innovative Strategies for the 21st Century Smithsonian Castle 1000 Jefferson Drive, SW			**Woodrow Wilson Center for Scholars** 14:00 – 16:00			
CRLE-Earth Council Charting the Course: Ethics and Values for a Sustainable Future World Bank I Building – 1850-I Street, NW, 8th Floor J Building – 701-18th Street, NW 8th Floor 2nd Floor 3rd Floor 3rd Floor 4th Floor 5th Floor 6th Floor 8th Floor 9th Floor 9th Floor				**I-8-302** (130) ***Plenary*** 9:15 – 10:15 Break-out Rooms: 10:30 – 13:00 J-8-044 (28) J-2-160 (22) J-3-044 (49) J-3-160 (18) J-4-044 (32) J-5-157 (15) J-6-160 (16) J-8-160 (15) J-9-160 (19) J-9-044 (22) **I-8-302** (120) ***Plenary*** 16:00 – 17:30		

SCHEDULE OF EVENTS
OCTOBER 6 – 11, 1997
"PARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
BANK STAFF LEARNING SEMINARS	BANK STAFF ONLY					
Global Treaties and Bank Policy and Operating Directives Sponsor: LEG World Bank – 1st Floor 600-19 Street, NW			**H-1-200** 9:00 – 13:00 *(30 Participants maximum)*			
Country Case Studies World Bank – 2nd Floor Sponsor: LLC World Bank – J-B1 Level 701-18th Street, NW 11th Floor 11th Floor 9th Floor		**J-B1-075** (60) *All-day Session* Break-out Rooms *(Afternoon)* J-11-044 (43) J-11-160 (20) J-9-044 (22)				

FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

PARTNERSHIPS FOR GLOBAL ECOSYSTEM MANAGEMENT: SCIENCE, ECONOMICS AND LAW

October 6–7, 1997

Beginning in 1993, each autumn the World Bank Group, under the auspices of the Vice Presidency for Environmentally and Socially Sustainable Development (ESSD), convenes an international conference on a theme related to advancing environmentally and socially sustainable development. This year's conference (ESSD5) is cosponsored with two other Bank Group entities, the Learning and Leadership Center (LLC) and the Economic Development Institute (EDI).

THE THEME

The theme for the 1997 conference is the scientific, legal, and economic requirements of global ecosystem management. Although international agreements are but one element of addressing global environmental issues such as the loss of biodiversity, climate change, desertification, ozone depletion, and water degradation, they play a crucial role. It is essential that they reflect the best available scientific knowledge, that they embody the most sensible economic analysis to advance the most cost-effective means of achieving the desired results, and that legal arrangements responding to these agreements create a level playing field and opportunities for innovation in the market place.

The conditions of our global ecosystems reflect the aggregate of local practices and national policies. These practices and policies manifest themselves locally, nationally, and regionally in many ways, including urban air pollution, the degradation of water, and the loss of agricultural productivity. Therefore, the bulk of the work required to respond to international environmental agreements must be done at the subregional, country, and local levels. In this context ethical questions of equity across societies and responsibilities between the rich and the poor nations must also be addressed.

THE CONFERENCE OBJECTIVES

1. To engage external experts with Bank managers and country staff
2. To provide a unique opportunity for major professional groups to interact on the requirements to link scientific, economic, and legal solutions for global ecosystem management at the country level
3. To promote understanding as to how best practice and innovations can be used for shared ecosystem management in sustainable development planning

THE CONFERENCE RESULTS

The results of the conference presentations and workshops and group and individual dialogues should be a better understanding of the roles and relationships among global systems regarding national sustainable development plans, national legislation, and macroeconomics; access to examples of best practice and innovative processes; contributions to the content of country development strategies; and assistance to development practitioners in better assessing the "global" connections of their work.

THE VENUE

The conference will be held October 6–7, 1997 inWashington, DC. It will open Monday, October 6, at 9 am in the Lisner Auditorium, the George Washington University, 730 21st Street, NW. Subsequent conference sessions will be held alternately at the World Bank and at Lisner Auditorium over October 6–7.

FIFTH ANNUAL
WORLD BANK CONFERENCE
ON ENVIRONMENTALLY AND SOCIALLY
SUSTAINABLE DEVELOPMENT

PARTNERSHIPS FOR GLOBAL ECOSYSTEM MANAGEMENT:
SCIENCE, ECONOMICS AND LAW

October 6–7, 1997

Cosponsored by the
Environmentally and Socially Sustainable Development Network,
the Learning and Leadership Center, and the Economic Development Institute
of the World Bank Group

PROGRAM

Monday, October 6

The George Washington University
Lisner Auditorium
730 21st Street, NW
Washington, DC

OPENING PLENARY

9:15 ***Welcoming Remarks***
Stephen J. Trachtenberg, President, The George Washington University
Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank

9:20 ***Memorial Dedication to Jacques-Yves Cousteau***

9:35 ***Global Challenges for Managing Ecosystems***
James D. Wolfensohn, President, World Bank

10:00 ***The Sovereignty and Systems of Nature and Nations: Challenges and Opportunities***

Chair
Maurice F. Strong, Under Secretary General and Executive Coordinator for United Nations Reform, and Senior Advisor to the President, World Bank

Monday, October 6, 1997 (continued)

Presenters
Peter Doherty, Nobel Laureate, Immunology
Joseph E. Stiglitz, Chief Economist, World Bank
Christopher G. Weeramantry, Vice President, International Court of Justice, The Hague

11:15 **Break**

11:30 ***The Requirements of Leadership for National Solutions***

Linking the Sciences
Robert T. Watson, Director, Environment Department, World Bank

12:30 **Lunch**

14:30 ***The Big Picture: Linking Global Environmental Issues and Human Needs***
Caio K. Koch-Weser, Managing Director, World Bank

15:00 ***The Global Treaties: Making Connections for Efficiencies, Effectiveness, and Equity***

Chair
Mostafa K. Tolba, President, International Center for Environment and Development, Cairo University

Panelists:
Yolanda Kakabadse, President, World Conservation Union Council
Huguette Labelle, President, Canadian International Development Agency
José I. Vargas, Minister of Science and Technology, Brazil
Sarwono Kusumaatmadja,* Minister, Kantor Menteri Negara Lingkungan Hidup, State Ministry of the Environment, Indonesia

16:00 ***Reflections for the Future***

Mohamed T. El-Ashry, Chief Executive Officer and Chairman, Global Environment Facility

17:00 ***Summing Up***

17:15 **Adjourn**

19:30 ***The Role of Law in the Promotion of Sustainable Development***
Reception and Panel hosted by the Washington College of Law, American University
(see following Invitation and Program)

Special Evening Session

THE ROLE OF LAW IN THE PROMOTION OF SUSTAINABLE DEVELOPMENT

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Monday, October 6, 1997
19:30-21:00

Hosted by the
Washington College of Law
American University
4801 Massachusetts Avenue, NW
Washington, DC 20016

Mooers-Morella Ceremonial Courtroom (603)

(Contact: Andrea Santy 202/274-4112)

This panel will explore the contribution that law can make to the achievement of sustainable development. The panel will analyze the intertwining of the international and domestic legal systems as well as the relationships among the law of international organizations, environmental law, human rights, and economic development. The panelists will refer to the roles of government, academia, civil society in general, and the legal profession in particular.

The program will start with a reception at 19:30 at Washington College of Law in the foyer outside the Ceremonial Courtroom (603) on the sixth floor. The law school is located at 4801 Massachusetts Avenue, NW, four blocks north of the main campus of American University. Buses will be provided for participants to and from the law school. The buses will depart at 19:00 from the World Bank Main Complex, 1818 H Street, NW, and return to the same address, departing the law school at 22:15 . Please note that parking is prohibited on university area residential streets but is available in the underground parking lot after 17:00 at no charge. There are two Metro stops close to the law school: Friendship Heights and Tenleytown/AU. The law school is a short taxi ride from either stop. Or guests can take any N bus from the Friendship Heights Metro stop, or any H2 or H4 bus from the Tenleytown/AU Metro stop.

THEMATIC ROUNDTABLES

GROUND-TRUTHING GLOBAL ECOSYSTEM MANAGEMENT IN NATIONAL SUSTAINABLE DEVELOPMENT

The Challenges and Opportunities: Science, Economics and Law

PROGRAM

Tuesday, October 7

9:00

CLIMATE CHANGE

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW

Chair
Johannes F. Linn, Regional Vice President, Eastern Europe and Central Asia, World Bank

Robert T. Watson, Director, Environment Department, World Bank,
Rajendra K. Pachauri, Director, Tata Research Institute
Rudolf Dolzer, Director and Professor, Institute for International Law, Bonn University; Senior Adviser to the President of Germany
David Malin Roodman, Senior Researcher, Worldwatch Institute
Eileen Claussen, Partner, Alcalde & Fay Public Affairs
Rapporteurs: Christian Dugneau and Helmut Schreiber

BIODIVERSITY

World Bank
H Auditorium
Room B1-201
600 19th Street, NW

Chair
Jean-Michel Severino, Regional Vice President, East Asia and Pacific Region, World Bank

Delmar Alberto Blasco; Secretary General, Ramsar Convention
Peter Schei; Special Advisor to the Minister of Environment, Norway
Nicolás Mateo, General Coordinator, Biodiversity Prospecting Division, National Biodiversity Institute (INBio)
Peter H. Raven, Director, Missouri Botanical Garden
Charles Perrings, Head of the Department, Environmental Economics and Environmental Management, University of York
Bernd von Droste zu Hülshoff, Director, World Heritage Centre, UNESCO
Rapporteur: Anthony J. Whitten

Tuesday, October 7, 1997 *(continued)*

9:00

DESERTIFICATION AND FORESTS

International Monetary Fund
700 19th Street, NW
Third Floor, Room A

Chair
Jean-Louis Sarbib, Regional Vice President, Africa, World Bank

Mohamed Kassas, Professor Emeritus of Botany, University of Cairo
Reuben Olembo, Assistant Under Secretary General, United Nations, and Deputy Executive Director, United Nations Environment Programme
Ola Ullsten, Former Prime Minister, Sweden
Manuel Rodriguez-Becerra, Professor, Environmental Policy, Andes University
Steven P. Hamburg, Professor, Environmental Studies and Ecology, Brown University
Rapporteur: Jean-Roger Mercier

9:00

INTERNATIONAL WATER REGIMES

World Bank
J Building, B1-080
701 18th Street, NW

Chair
Callisto Madavo, Regional Vice President, Africa, World Bank

Mahmood Yousef Abdulraheem, Coordinator, Regional Organization for the Protection of the Marine Environment
Torkil Jonch-Clausen, Chair, Technical Advisory Committee, Global Water Partnership
Tamarii Tutangata, Director, South Pacific Environment Programme
Rapporteur: David R. Grey

11:30

All participants reconvene at Lisner Auditorium, The George Washington University, 730 21st Street, NW, for coffee break and remaining plenary sessions.

PLENARY

12:00

Presentations on Concurrent Thematic Roundtables

13:00

Lunch

Tuesday, October 7, 1997 *(continued)*

The George Washington University
Lisner Auditorium
730 21st Street, NW

CLOSING PLENARY

GLOBAL ECOSYSTEM MANAGEMENT: INNOVATIONS AND OPPORTUNITIES IN PUBLIC/PRIVATE PARTNERSHIPS

14:30	Alassane D. Ouattara, Deputy Managing Director, International Monetary Fund
14:50	George A. Olah, Nobel Laureate, Director, Loker Hydrocarbon Research Institute, University of Southern California
15:20	**Break**
15:40	***Public/Private Partnerships: Applications and Best Practice***
	Moderator Sven Sandstrom, Managing Director, World Bank
	Henry J. Hatch, President, World Engineering Council for Sustainable Development K. Madhava Sarma, Executive Secretary, Secretariat for the Vienna Convention and the Montreal Protocol Jemal-ud-din Kassum, Vice President, International Finance Corporation
16:40	***Aggregating Knowledge for Policy: Global Information Systems*** Kass Green, President, Pacific Meridian Resources
17:15	***Closing Commentary*** Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank
17:30	**Adjourn**

*To be confirmed.

REGIONAL ROUNDTABLE

PROGRAM

AFRICA

Tuesday, October 7

14:00

World Bank
4th Floor
1776 G Street, NW

Coordinator
Jean-Roger Mercier, Senior Environmental Specialist, Africa Technical, World Bank

Panel:
Reuben Olembo, Assistant Under Secretary General, United Nations, and Deputy Executive Director, United Nations Environment Programme
Mohamed Kassas, Professor Emeritus of Botany, University of Cairo
Cyril Enweze,Vice President, Operations, African Development Bank

13:00 **Regional Lunch**

14:00 ***Program***
10 minutes per panelist

Towards ESSD in SSA: Regional and Sub-Regional Approaches
Lessons Learned in Managing Resources in SSA: Connecting Local and Global Impacts

15:30 **Coffee Break**

16:00 ***Final Sessions***

17:30 **Adjourn**

REGIONAL ROUNDTABLE

PROGRAM

LATIN AMERICA AND THE CARIBBEAN

The Mesoamerican Biological Corridor

Wednesday, October 8
World Bank
I Building, Room 8-302
1850-I Street, NW

9:00 **Coordinator**

William Partridge, Lead Specialist, Environmentally and Socially Sustainable Development, Latin America and the Caribbean, World Bank

The Mesoamerican Biological Corridor

Luis Constantino or Augusta Molnar, World Bank
Jorge Cabrera, Central American Commission on Environment and Development

9:30 ***Science's Input to Conservation Development: Too Much or Too Little?***

Panel Discussion

Moderator:*

Alejandro Grajal, Wildlife Conservation Society
Gonzalo Castro, Biodiversity Specialist, World Bank
Mark Rose, Fauna & Flora International, England
Juan Bezaury, Amigos de Sian Ka'an

10:30 **Break**

11:00 ***Poverty and Social Development***

Panel Discussion

Moderator:*

Ricardo Arias, Minister of Agriculture, Honduras
Mario de Franco, Minister of Agriculture, Nicaragua
David Kaimowitz, Natural Resource Economist, Center for International Forestry Research, Indonesia

Wednesday, October 8, 1997 *(continued)*

12:30 **Lunch**

14:00 ***Indigenous Peoples, Land, and Biodiversity***

Panel Discussion

Moderator:*

Amstrong Wiggings, Indian Law Resource Center
Osvaldo Munguia, MOPAWI, Honduras
Indigenous Representative,* OSICAN, Nicaragua
Indigenous Representative,* Guatemala
Indigenous Representative,*Panama

15:30 **Break**

16:00 ***Partnerships with the Private Sector***

Panel Discussion

Moderator:*

Miguel Araujo, Ministry of the Environment, El Salvador
Cristina Figueres, First Lady of Costa Rica
Representative of Medowlake Tribal Council,* Canada

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*To be confirmed.

GEOGRAPHIC INFORMATION SYSTEMS AND REMOTE SENSING FOR SUSTAINABLE DEVELOPMENT

Exhibition, Seminar, and Workshops
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

DESCRIPTION

A series of related events highlighting Environmental Information Systems (EIS) and related Geographic Information Systems (GIS) and Remote Sensing Technologies will take place during the week of October 6-10, 1997, as part of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development. These events include an exhibition, a formal training seminar on "GIS for Coastal Management," and lunchtime workshops.

1. GIS AND REMOTE SENSING EXHIBITION

The ESSD5 Conference will host a GIS and Remote Sensing Exhibition in the main atrium of the World Bank's Main Complex (MC) Building, 1818 H Street, NW, Washington, DC. The exhibits will be open each day, Monday through Friday, and all conference participants and World Bank staff are invited to visit the displays and presentations.

As the theme of the ESSD5 Conference is "Partnerships for Global Ecosystem Management," the exhibition will involve a number of different groups and agencies representing the private sector, non-governmental organizations (NGOs), and multilateral organizations. About ten such groups will demonstrate how GIS and Remote Sensing can be applied to solve environmental management problems and support sustainable development initiatives.

The exhibitors include:

Conservation International (CI)
Environmental Systems Research Institute (ESRI)
Intergraph
Space Imaging Corporation
SPOT Image
United Nations Environment Programme (UNEP)
United Nations High Commission for Refugees (UNHCR)
World Resources Institute (WRI)
World Wildlife Fund (WWF)
The World Bank

2. GIS FOR COASTAL MANAGEMENT TRAINING SEMINAR

Participants and World Bank staff are invited to attend a formal training seminar on "Geographic Information Systems for Coastal Management." This seminar will be conducted Wednesday afternoon, October 8, 14:30–16:30 in the World Bank's J Building, 701 18th Street, NW, Room 3-044. The program will include presentations, case studies, and discussions by a panel of experts.

The panel includes:

F. A. Cross, U.S. National Oceanic and Atmospheric Administration/NMFS, Southeast Fisheries Science Center
Kass Green, Pacific Meridian Resources
Peter Mumby, Center for Tropical Coastal Management Studies, University of New Castle
Vic Klemas, Graduate College of Marine Studies, University of Delaware

Participants will learn about appropriate and low-cost information management technologies that can be applied to support environmentally sustainable development in coastal areas. World Bank staff will obtain career development credit through the Learning and Leadership Center for registering and attending this seminar.

3. WORKSHOPS

Associated with the GIS and Remote Sensing exhibition will be a series of lunchtime workshops, practical demonstrations, and thematic discussions designed to help participants understand how these technologies can be applied effectively. These sessions will focus heavily on actual examples, case studies, and the experiences of experts in the field. Participants are encouraged to interact and ask questions.

The lunch time sessions will be held in the World Bank's J Building, 701 18th Street, NW, Room 4-044 from 12:30-13:45.

The schedule includes:

Tuesday	October 7	GIS and Ecosystem Management
Wednesday	October 8	GIS in the Social Sectors
Thursday	October 9	GIS at the World Bank–Examples from Africa and Asia
Friday	October 10	GIS and the Urban Environment

EL NIÑO: AN IMPETUS FOR STRATEGIC MANAGEMENT OF DROUGHTS

A World Bank Group Learning Seminar
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
14:30 – 17:30

World Bank
H Building Room 1- 200
600 19th St. NW
Washington,DC

DESCRIPTION

Strong signals indicating the onset of an unusually forceful El Niño-induced weather pattern have already appeared in the equatorial central and eastern Pacific Ocean. If the current trends continue, the consequences are likely to be the most intense ever observed. Recent media attention has begun to focus on the impacts of this potential "climate crisis of the century."

El Niño is associated with significant variations in the global climate system, inducing heavy rainfall and flooding in some parts of the world, and extreme drought in other regions. While the full impact of the current El Niño cannot yet be accurately predicted, the threat that it poses offers an opportunity to promote the preparation of long-term water management strategies, especially in drought-prone areas.

This seminar will provide an opportunity for policymakers, World Bank staff, and influential members of society to learn how long-term planning can reduce the impact of droughts. It is sponsored by the World Bank Group Economic Development Institute's Water Policy Reform Program in collaboration with the Environment Department and the International START Secretariat.

PROGRAM

14:30 ***Introduction***

Chairman

François-Marie Patorni, Principal Specialist, Water Resources, and Coordinator, Water Policy Reform Program, Economic Development Institute, World Bank

14:40 ***Keynote Address***

Robert T. Watson, Director, Environment Department, World Bank

Wednesday, October 8, 1997 *(continued)*

15:00 ***Computer Animation and Video of El Niño Event and Consequences***
J. Michael Hall,* U.S. National Oceanic and Atmospheric Administration

15:20 ***Panel Discussion with Senior Policymakers and Experts***

- Overview of the potential socioeconomic impacts brought on by droughts, focusing on El Niño-related impacts
  Michael Glantz,* U.S. National Center for Atmospheric Research
- Implementation of long-term water management strategies at a national level*
- Case studies of the successes and failures of past and current water management strategies*
- World Bank strategy to help develop national water policies
  David Grey, Lead Specialist, Water Resources, Africa Region, World Bank

17:00 ***Plenary Discussion***

17:30 **Adjourn**

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*Speaker to be confirmed.

DESERTIFICATION: THE PHENOMENON. CONTRIBUTING AND MITIGATING FACTORS

A World Bank Group Learning Seminar
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
9:00 – 17:00

World Bank
J Building Room 1-080
701 18th Street, NW
Washington, DC

COURSE OBJECTIVE

Participants will (1) examine of the extent of desertification worldwide; (2) develop concepts linking natural and human-made factors that contribute to this phenomenon; and (3) be introduced to mitigating approaches in the areas of soils, animal husbandry, and forestry that can limit the expansion of deserts. Case studies will show what is being done to address the issues associated with desertification. The range of international programs designed to combat this phenomenon also will be discussed.

PROGRAM

9:00	***Introduction*** Alex McCalla, Director, Rural Development Department, World Bank
9:15	***Desertification: The Phenomenon*** Mohamed Kassas, Professor Emeritus of Botany, University of Cairo
10:30	**Coffee Break**
10:45	***Contributing and Mitigating Factors: Soils*** Christian Pieri, Senior Ecologist, Rural Development Department, World Bank
11:30	***Case Presentation: The Middle East*** Jitendra Srivastava, Principal Agriculturist, Rural Development Department, World Bank
12:15	**Lunch**

Wednesday, October 8, 1997 *(continued)*

13:30 ***Contributing/Mitigating Factors: Animal Management***
Harvey Blackburn, Research Scientist, U.S. Department of Agriculture

14:15 ***Case Presentation: The Loess Plateau***
Paul O'Connell, Natural Resource Economist, Rural Development Department, World Bank

15:00 **Coffee Break**

15:15 ***Contributing/Mitigating Factors: Forestry***
James Douglas, Acting Forestry Adviser, Rural Development Department, World Bank

15:45 ***International Programs to Combat Desertification***
Mohamed Kassas

16:30 ***Summation and Closing Remarks***
Alex McCalla, Presenters

17:00 **Adjourn**

ETHICS AND VALUES: A GLOBAL PERSPECTIVE

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
9:00 – 17:45

World Bank
H Auditorium, Room B1-201
600 19th Street, NW
Washington, DC

DESCRIPTION

Although one of the opening keynote presentations of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development (ESSD5) will address the moral imperatives of global ecosystem management, this Ethics and Values Associated Event more fully explores the ethical aspects of ESSD5.

Participants will explore a number of areas of inquiry. For instance, in confronting global ecosystem management, is there one common value shared by all life, implicitly and explicitly, such as the right to survive? Is this a commonly held value among all peoples? Do shared values and ethics underpin and/or compel global ecosystem management? In the first instance, in determining the capacity of a life form to survive, does the type of ecosystem serve as the shadow template for the development and assertions of social values and ethical systems? Based on the historic influence of values and ethics in the development of societies, how are nations responding to the assertion of global values and ethics in global ecosystem management? How is science influencing the development of global environmental ethics and social values? Are global ecosystem issues influencing the relationships among science, economics, foreign relations, and religions? How do present attempts to create global ecosystem management frameworks link values and ethics to national governance and to the laws of Nature?

The program is divided into four themes to explore these and other relevant questions:

Theme One	A Global Ethic: Reflections on the 21st Century
Theme Two	Cultural Values, the Global Commons, and Development
Theme Three	Global Survival: A Convergence of Faith and Science?
Theme Four	Equity and Ecosystems: Local Justice—Global Systems

ETHICS AND VALUES: A GLOBAL PERSPECTIVE

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
9:00 – 17:45

PROGRAM

Wednesday, October 8
World Bank
H Auditorium, Room B1-201
600 19th Street, NW
Washington, DC

9:00 ***Opening Remarks***
Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank

9:15 ***"A Global Ethic: Reflections on the 21st Century"***
Benjamin Ladner, President, American University

9:40 ***"Cultural Values, the Global Commons, and Development"***
Anwar Ibrahim,* Deputy Prime Minister and Minister of Finance, Malaysia

10:00 **Break**

10:30 ***"Global Survival: A Convergence of Faith and Science?"***
Njongonkulu Winston Hugh Ndungame, Anglican Archbishop of Cape Town

George Alleyne, Director, Pan American Health Organization

Norman Myers, Consultant in environment and development, United Kingdom

11:45 ***"Equity and Ecosystems: Global Patrimony and Local Justice"***

Panel Moderator
Yolanda Kakabadse, President, The World Conservation Union Council

Wednesday, October 8 *(continued)*

Joel H. Meyers, Executive Vice President, The Rabbinical Assembly
Ashok Khosla, President, Development Alternatives
William F. Vendley, Secretary General, World Conference on Religion and Peace

13:00 **Lunch**

14:30 ***"Ethics and Biotechnology: Realities and Uncertainties"***

Panel Moderator:
Ismail Serageldin

Miguel A. Altieri , Chair, SANE General Coordinator, College of Natural Resources, University of California at Berkeley
Klaus M. Leisinger, Executive Director, Ciba-Geigy Foundation for Cooperation with Developing Countries

15:15 ***"Global Values: Requirements for a Humane Future"***

Panel Moderator
Herman Daly, Senior Resident Scholar, University of Maryland at College Park

John Hoyt, President Emeritus, The Humane Society of the United States
Azim A. Nanji, Professor and Chair, Department of Religion, University of Florida
Afaf Mahfouz, First Vice President, Conference of Non-Governmental Organizations in Consultative Status with the United Nations Economic and Social Council

16:15 **Break**

16:30 ***Audience Commentaries***

17:00 ***Reflections on the Day's Discourse***

Respondent Panel:
Bertrand Charrier, Director, Green Cross International
Bernd von Droste zu Hülshoff, Director, World Heritage Centre, UNESCO

17:30 ***Closing***
Ismail Serageldin

17:45 **Adjourn**

*To be confirmed.

YOU ARE CORDIALLY INVITED TO ATTEND
A SPECIAL ASSOCIATED EVENT:

FORUM ON HUMAN SETTLEMENTS, HUMAN SOLIDARITY, AND GLOBAL ECOSYSTEMS

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
20:00 – 22:00

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW
Washington, DC

Sponsored by
the Human Solidarity Foundation

A CONVERSATION

Please join us for an evening discussion among a distinguished and diverse panel concerned about the issues that link the requirements of human settlements, viable communities, and healthy and diverse ecosystems.

For the first hour a panel that includes Mamphela Ramphele, Ashok Khosla, William F. Vendley, Yolanda Kakabadse, Azim Nanji, Njongonkulu Winston Hugh Ndungame, and Joel H. Meyers, moderated by Ismail Serageldin, Vice President for Environmentally and Socially Sustainable Development at the World Bank, will join in discussion.

For the second hour the discussion will engage everyone attending the Forum.

This Forum is an Associated Event of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development. Hosted by the World Bank Group, the event is sponsored by the Human Solidarity Foundation with a grant from Jane and George Russell of the Frank Russell Company, Tacoma, Washington. The coordinator is Peter Oberlander, a trustee of the Human Solidarity Foundation.

Special Evening Session

FORUM ON HUMAN SETTLEMENTS, HUMAN SOLIDARITY, AND GLOBAL ECOSYSTEMS

An Associated Event
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Wednesday, October 8, 1997
20:00 – 22:00

World Bank
Main Complex
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1818 H Street, NW
Washington, DC

A special forum sponsored by
the Human Solidarity Foundation

PROGRAM

20:00 **Panel Moderator**
Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank

Panelists:
Mamphela Ramphele, Vice Chancellor, University of Cape Town
Ashok Khosla , President, Development Alternatives
William F. Vendley , Secretary General, World Conference on Religion and Peace
Yolanda Kakabadse, President, The World Conservation Union Council
Azim A. Nanji, Professor and Chair, Department of Religion, University of Florida
Njongonkulu Winston Hugh Ndungame, Anglican Archbishop of Cape Town
Joel H. Meyers, Executive Vice President, The Rabbinical Assembly

21:00 ***Plenary Conversation***

21:50 ***Closing Comments***
Ismail Serageldin

22:00 **Adjourn**

BIOTECHNOLOGY AND BIOSAFETY

An Associated Event
of the Fifth World Bank Conference on
Environmentally and Socially Sustainable Development

October 9–10, 1997

World Bank
H Auditorium
H Building, Room B1-201
600-19th Street, NW
Washington, DC

Co-sponsored by
American Association for the Advancement of Science (AAAS)
Consultative Group on International Agricultural Research (CGIAR)
The Conservation Fund
Food and Agriculture Organisation of the United Nations (FAO)
International Council of Scientific Unions (ICSU)
The Smithsonian Institution
Third World Academy of Sciences (TWAS)
Union of Concerned Scientists (UCS)
United Nations Development Programme (UNDP)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Environment Programme (UNEP)
United Nations Industrial Development Organization (UNIDO)
U.S. National Academy of Sciences (NAS)
The World Bank

DESCRIPTION

Biotechnology—the technique of using living organisms, or parts of such organisms, to make or modify products, to improve plants or animals, or to develop microorganisms for specific use—and its safe use in agriculture, human health, medicine, and the environment is a topic of contemporary significance.

Biotechnology issues have been front and center of contentious debate. Opinions about biotechnology and biosafety vary on a continuum between opposites, with much discussion about advantages and disadvantages. Public concerns are manifesting themselves locally, nationally, and internationally.

This Associated Event seeks to engage a wide cross-section of stakeholders—academic, scientific, international, and national research organizations, private sector, civil society, from developed and developing countries—to discuss the issues. The event is expected to be a milestone in generating consensus that is grounded in scientific evidence and knowledgeable scientific opinion. It is especially important that the debate focus on how the promise of biotechnology can be realized for the benefit of the world's poor, the environment, and the safe management of the products and processes of biotechnology.

BIOTECHNOLOGY AND BIOSAFETY

An Associated Event
of the Fifth World Bank Conference on
Environmentally and Socially Sustainable Development

October 9–10, 1997

World Bank
H Auditorium
H Building, Room B1-201
600-19th Street, NW
Washington, DC

PROGRAM

Thursday, October 9

SESSION I: SETTING THE STAGE

Chair
Thomas E. Lovejoy, The Smithsonian Institution

9:30 ***Introductory Remarks and Stating the Problem***
Ismail Serageldin, World Bank

10:00 ***The Scientific Scene***
Werner Arber, International Council of Scientific Unions

10:30 ***The Special Case of Agricultural and Food Biotechnology***
Henry Kendall, Union of Concerned Scientists

11:00 **Coffee**

11:15 ***Discussion***

13:00 **Lunch** (on your own)

Thursday, October 9, 1997 *(continued)*

SESSION II: THE PROMISE AND THE PERILS

Chair
Roger Beachy, Scripps Research Institute

14:30 ***Overview***
Christopher Somerville, Carnegie Institution of Washington

14:45 ***The Opportunities and the Risks***
Robert Horsch, Monsanto
Simon Bright,* Zeneca
Miguel Altieri, University of California at Berkeley

15:45 **Coffee**

16:00 ***Regulatory Framework Issues***

Chair
Hamdallah Zedan, United Nations Environment Programme

Desmond Mahon, Convention of Biological Diversity
(biosafety regulations and processes)
Timothy Roberts, United Kingdom (Intellectual Property Rights,
the private sector, and the public good)

16:30 ***Discussion***

19:00 ***Reception*** World Bank, H Building Cafeteria, first floor

Friday, October 10

SESSION III: REVIEWING THE EVIDENCE

Chair
Robert T. Watson, World Bank

9:00 ***Panel 1: Are the opportunities of genetically modified organisms (GMOs) being fully exploited?***
George Tzotzos, UNIDO

Discussants
Gabrielle Persley, AusBiotech Alliance
Carlienne Brenner, Organisation for Economic Co-operation and Development

9:30 ***Panel 2: Are the risks of developing and releasing GMOs being adequately evaluated and assessed?***
Rita Colwell, Biotechnology Institute, University of Maryland

Discussants:
Val Giddings, Biotechnology Industry Organization
Po Tien, Chinese Academy of Sciences

10:00 **Discussion**

10:30 **Coffee**

SESSION IV: ROLE OF INTERNATIONAL AGRICULTURAL RESEARCH

Chair
Louise Fresco, FAO

10:45 ***The Consultative Group on International Agricultural Research***
Timothy Reeves, CIMMYT

11:00 ***The Global Forum***
Fernando Chapparo, COLCIENCIAS

11:15 ***Perspectives from National Agricultural Research Systems***
Marcio de Miranda Santos, EMBRAPA, Brazil
Magdy Madkour, AGERI, Egypt

Friday, October 10, 1997 *(continued)*

11:45 ***Discussion***

12:45 **Lunch** (on your own)

SESSION V: THE ROLE OF PUBLIC POLICY

Chair
José I. Vargas,* Minister for Science and Technology, Brazil

14:00 Vernon W. Ruttan, University of Minnesota

14:15 Michel Dron, CIRAD

14:30 George Lloyd, Zambian Grain Growers and Marketing Association

14:45 ***Discussion***

15:30 **Coffee**

SESSION VI: RECOMMENDATIONS FOR ACTION

Chair
Alex McCalla, World Bank

16:00 ***Synopsis of Sessions***
Wanda Collins, World Bank

16:15 ***Discussion***

16:45 ***Wrap-up and Next Steps***
Ismail Serageldin, World Bank

*To be confirmed.

CONFERENCE ON CORAL REEFS 1997

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

and the
International Coral Reef Initiative

In Memory of Captain Jacques-Yves Cousteau

October 9–11, 1997

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW
Washington, DC

Co-sponsored by
ICLARM, The Smithsonian Institution, IUCN, and GBRMPA

DESCRIPTION

In cooperation with International Center for Living Aquatic Resources Management (ICLARM), the International Coral Reef Initiative (ICRI), The Smithsonian Institution, the World Conservation Union (IUCN), and the Great Barrier Reef Marine Park Authority (GBRMPA), the World Bank Group has organized the Conference on Coral Reefs as an Associated Event of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development, and the 1997 International Year of the Reef. The Conference and accompanying Coral Reef Exhibit are dedicated to the memory of Captain Jacques-Yves Cousteau.

The World Bank will publish the Coral Reef Conference papers, conclusions, and recommendations in a final proceedings. The exhibit is located in the Main Complex (MC) Atrium. It includes videos and interactive computer models, reef artifacts, photographs exemplifying sustainable and nonsustainable use of coral reef ecosystems, and possibly a live coral reef aquarium display.

The goal of the conference is to apprise Bank staff, other development professionals, environmental journalists, and the general public of the key issues associated with an often-overlooked part of our global ecosystem: coral reefs—their degradation, sustainable use options, and conservation. The conference will (1) provide a framework for discussion for follow-up actions in sustainable marine enterprise, consumer education and marketing, and policy and regulatory frameworks; and (2) examine regional and local strategies to combat coral reef degradation. The conference will also provide a forum to help set the agenda for the International Tropical Marine Ecosystems Management Symposium (ITMEMS), a quadrennial event to be launched in Australia in 1998.

The Coral Reef Conference will be structured around selected key coral reef issues and policy- and market-oriented solutions relevant to the work of the World Bank Group and other stakeholders. Management tools such as economic valuation, marine protected areas, coral reef monitoring, marine environmental education, and information management will also be addressed in the context of solutions to the problems identified. Keynote speakers and panelists will lead the discussion of selected topics to encompass the following:

1. Identification of the issue and the key stakeholders involved, as in reef destructive fishing/ extraction, unregulated trade and tourism
2. Underlying root causes, such as policy and market failures, uneducated consumers, and inadequate enforcement
3. Available tools and mechanisms to ensure sustainable development, such as economic valuation techniques and incentives, limited entry and community-based management, certification and consumer education, and monitoring and evaluation
4. Future recommendations and actions (for Bank staff, policymakers, private entrepreneurs, non governmental organizations, reef managers, scientists, and educators).

The conference is structured around plenary and working group sessions. In the plenaries recognized scientists and practitioners from the field will introduce five major themes described below. The working groups will focus on the themes discussed in the plenary sessions and on the regional priorities identified in earlier ICRI Regional Workshops. Speakers, panelists, and invitees come from a wide range of interest groups to ensure as broad a coverage of the issues as possible. Discussion will examine the relationships between the issues/problems and their solutions paired in the following themes:

1. **Reef-Destructive Practices** (for example, dynamite and cyanide fishing, coral mining) vs. **Opportunities for Sustainable Reef-Based Mariculture** (for example, sustainable production *in situ*, community-based production) and **Low-Impact Extraction** (alternative fishing methods/ product substitution)

2. **Illegal and Unsustainable Trade in Reef Products** (for example, in the live food fish, aquarium, and ornamentals trade) vs. **Certified Trade and Sustainable Bioprospecting**

3. **Marine Protected Areas** (especially when under-represented and inadequately managed) vs. **Self-Financed Marine Management Areas** (for example, through sustainable marine ecotourism, fisheries stock enhancement, and options for income-generating activities)

4. **Marine Information Management and Environmental Education** (for example, the Global Coral Reef Monitoring Network (GCRMN), Reef Check, and electronic databases such as ReefBase, FishBase, CoralBase; role of the civil society in information dissemination and public awareness)

5. **Economic Valuation of Coral Reefs** (This session will provide an overview of analytical tools for strategic decisionmaking, for example, presentation of recent application of cost-benefit analysis and valuation methods in the coral reef context).

CONFERENCE ON CORAL REEFS 1997

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

and the
International Coral Reef Initiative

In Memory of Captain Jacques-Yves Cousteau

October 9–11, 1997

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW
Washington, DC

Co-sponsored by
ICLARM, The Smithsonian Institution, IUCN, and GBRMPA

PROGRAM

Thursday, October 9

OPENING SESSION

9:00 ***Welcoming Address***
Ismail Serageldin, World Bank

9:30 ***International Coral Reefs Initiative Progress to Date and Regional Initiatives***
Richard Kenchington, ICRI Secretariat

9:50 ***Overview of Current Issues and Potential Solutions***
Bernard Salvat, University of Perpignan and GCRMN Chair
Clive Wilkinson, Australian Institute of Marine Science
and GCRMN Coordinator

Thursday, October 9, 1997 *(continued)*

10:10 ***Overview of Conference Themes and Goals***
Sarwono Ksumaatmadja,* State Minister of the Environment, Indonesia

10:30 **Coffee Break**

PLENARY SESSION 1

11:00 ***Reef Destructive Practices vs. Opportunities for Sustainable Reef-Based Mariculture***
Charles Cook, The Nature Conservancy, United States
Rili Djohani, The Nature Conservancy, Indonesia
Robert Johannes, Australia
Solomon Makoloweka, Tanga Coastal Zone Programme, Tanzania
Vaughan Pratt, International Marinelife Alliance, Philippines
John Walch, Aquatic Wildlife Company, United States
Jose Zertuche, Universidad Autonoma de Baja California, Mexico

12:30 **Lunch**
Video Presentation on Sustainable Aquarium Fishing
Daniel Pelicier, Flic en Flac Company, Mauritius
Preston Auditorium

PLENARY SESSION 2

14:00 ***Partnerships for the International Coral Reefs Initiative***
Timothy Wirth, Undersecretary of State for Global Affairs, United States

14:20 ***Illegal and Unsustainable Trade in Reef Products vs. Certified Trade and Sustainable Bioprospecting***
Walter Adey, The Smithsonian Institution, United States
Patric Colin, Coral Reef Research Foundation, Palau
Andrea Gaski, World Wildlife Fund, United States
David Newman, National Cancer Institute, United States
Daniel Pelicier, Flic en Flac Company, Mauritius
Jamie Resor, World Wildlife Fund, United States
Igrev Topkov,* Convention on International Trade in Endangered Species, Switzerland

15:50 **Coffee Break**

Thursday, October 9, 1997 *(continued)*

PLENARY SESSION 3

16:20 ***Marine Protected Areas vs. Self-Financed Marine Management Areas and Sustainable Ecotourism***

Tundi Agardy, Conservation International, United States
Juan Bezaury, Amigos de Sian Ka'an, Mexico
Stephen Colwell, CORAL, United States
Peter Espeut, South Coast Conservation Foundation, Jamaica
Donald Hawkins,* Tourism Institute, The George Washington University, United States
Carolyn Hill, EcoSource, United States
Richard Kenchington, International Coral Reef Initiative, Australia
Richard Murphy, Jean-Michel Cousteau Fiji Island Resort, Fiji
Callum Roberts, University of York, United Kingdom

17:50 **Adjourn**

Friday, October 10

PLENARY SESSION 4

9:00 ***Marine Information Management and Environmental Education***

Phillip Dustan, University of Charleston, United States
Sylvia Earle, Sea Web, United States
John McManus, International Center for Living Aquatic Resources Management, Philippines
Jack Sobel, Center for Marine Conservation, United States
Clive Wilkinson, Great Coral Reef Monitoring Network, Australia

PLENARY SESSION 5

10:30 ***Economic Valuation of Coral Reefs***

Herman Cesar, World Bank, United States
Robert Costanza, University of Maryland, United States
John A. Dixon, World Bank, United States
Richard Huber, World Bank, United States

Friday, October 10, 1997 *(continued)*

12:00	***Terms of Reference for Thematic Working Groups***
12:15	**Lunch** ***Slide Presentation on Cyanide Fishing in the Indo-Pacific*** Vaughn Pratt, International Marine Alliance, Philippines *Preston Auditorium*
13:30	***Thematic Working Groups Parallel Sessions***
Preston Auditorium	1. Reef Destructive Practices vs. Opportunities for Sustainable Reef-Based Mariculture
MC-C1-108	2. Illegal and Unsustainable Trade in Reef Products vs. Certified Trade and Sustainable Bioprospecting
MC-13-121	3. Marine Protected Areas vs. Self-Financed Marine Management Areas and Sustainable Ecotourism
MC-9-414	4. Marine Information Management and Environmental Education
MC-10-414	5. Economic Valuation of Coral Reefs

PLENARY SESSION 6

15:00	***Main Conclusions and Recommendations*** Nancy Knowlton, The Smithsonian Institution/Smithsonian Tropical Research Institute
17:00	**Reception** *World Bank, Main Complex Atrium* Ismail Serageldin, World Bank, United States
19:00	**Adjourn**

Saturday, October 11

PLENARY SESSION 7

9:00	***Terms of Reference for Regional Working Groups***
9:30	***Regional Working Group Parallel Sessions***
MC-5-225	A. East Asia/South Asia/South Pacific B. Tropical Americas C. Red Sea-Gulf/Western Indian Ocean

PLENARY SESSION 8

12:00	***Reports of Regional Working Groups***
13:00	**Adjourn**

*To be confirmed.

INDICATORS FOR NATURAL RESOURCE MANAGEMENT
A WORKSHOP

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Tuesday, October 7, 1997
9:00-13:00

World Bank
H Building, Room 1-200
600 19th Street, NW
Washington, DC

DESCRIPTION

This workshop will be an opportunity for those working on and interested in the use of indicators to monitor natural resource management to meet and exchange information. The half day will be organized around two sessions, the first to present new research results and ongoing activities in indicator development, and the second to present applications in the field.

PROGRAM

9:00	***Welcome and Opening Remarks*** Robert T. Watson, Director, Environment Department, World Bank
9:15	***New Research and Ongoing Activities*** Nation-level Indicators* United Nations System* World Resources Institute*
10:45	**Coffee**
11:15	***Applications of Indicators in the Field*** International Food Policy Research Institute* International Center for Tropical Agriculture (CIAT)* World Bank* (Country applications, World Development Indicators)
12:45	***Next Steps***
13:00	**Adjourn**

*Speaker to be confirmed.

MAINSTREAMING FRESHWATER BIODIVERSITY IN DEVELOPMENT PROJECTS

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Friday, October 10, 1997
9:30 –16:00

World Bank
G Building, Room 4-220
1776 G Street, NW
Washington, DC

DESCRIPTION

Freshwater biodiversity is somewhat of a Cinderella because biodiversity initiatives have tended to focus on tropical forests and cuddly, charismatic mammals and birds of terrestrial ecosystems. Attention is at last being directed to rivers and lakes. The Fourth Conference of the Parties to the Convention on Biological Diversity will be discussing freshwater ("inland") biodiversity in May 1998 in Bratislava, and the preparatory meetings and the Global Biodiversity Forum addressed this subject in September 1997 in Montreal.

The reason for this new level of concern is the recognition that many development projects, such as those financed by the World Bank Group, impact freshwater biodiversity in major ways through flow regulation, pollution, siltation, eutrophication, and changes in vegetation cover. Yet, many of the world's poorest people depend on freshwater biodiversity for their protein needs, and healthy freshwater ecosystems provide a wide range of other benefits.

Recent reviews of environmental assessments conducted for World Bank projects have found that if and when impacts on freshwater biodiversity are investigated, the quality of the available information is sometimes below what is desired, and few effective mitigation or management provisions are incorporated into project designs. This is in part due to acute human resource shortages, the lack of importance given to the work, and the inadequate dialogue among specialists. The World Bank Group's Water Resources Management policy paper recognizes that, to assist governments in developing strategies and cost-effective mechanisms for ecologically sustainable management and the protection and restoration of water-dependent ecosystems, more rigorous attention should be given to maintaining biodiversity and protecting ecosystems in the design and implementation of water projects.

The World Bank Group has become a leader in promoting concern for the management of freshwater biodiversity. This Associated Event provides the opportunity to get an international perspective on activities leading up to the Bratislava meeting and its relevance to the Bank and other major donors. Speakers will include Delmar Blasco, Secretary General of the Ramsar Convention; representatives of major nongovernmental organizations; field practitioners; and Bank technical and operational staff.

The coordinator is Anthony J. Whitten, World Bank, tel 202/458-2253, fax 202/522-1664, email twhitten@worldbank.org

MAINSTREAMING FRESHWATER BIODIVERSITY IN DEVELOPMENT PROJECTS: THE AGENDA MATURES

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Friday, October 10, 1997
9:30-16:00

World Bank
G Building, Room 4-220
1776 G Street, NW
Washington, DC

PROGRAM

OPENING PLENARY

9:30 ***The Path to the Present***
Anthony J. Whitten, Environment and Natural Resources, Asia Technical, World Bank

KEYNOTE ADDRESSES

9:40 ***International Initiatives***
Calestous Juma,* Convention on Biological Diversity

9:55 ***New Engineering Paradigms***
Gerry Galloway, Industrial College of the Armed Forces, National Defense University

10:10 ***New Directions for Wetlands***
Delmar Blasco, Convention on Wetlands

10:25 ***Discussion***

10:45 **Coffee**

Friday, October 10, 1997 *(continued)*

BRINGING THE CONCERNS INTO POLICY

11:00 ***Towards a Strategy for Mainstream Freshwater Biodiversity***
Colin Rees, Environment Department, World Bank

11:15 ***A Regional Cut***
Maritta Koch-Weser,* Environment, Rural and Socially Sustainable Development, Latin America and the Caribbean, World Bank

11:30 ***Mainstreaming at the National Level: Capacity and Other Constraints***
Rohan Pethiyagoda, Wildlife Heritage Trust of Sri Lanka

11:45 ***Freshwater Biodiversity in Operations and International Waters***
Al Duda,* Global Environment Facility

ASSESSMENTS AND MAPPING

12:00 ***AQUARAP***
Jorgen Thompson, Conservation International

12:15 ***Assessments, Latin America and the Caribbean, and North America***
David Olson, World Wildlife Fund, and Gonzalo Castro, Environment Department, World Bank

12:30 ***Assessments***
Ian Davidson, Wetlands International

12:45 ***Discussion***

13:00 **Lunch**

Friday, October 10, 1997 *(continued)*

ASSESSMENTS AND TECHNIQUES

14:00 ***Assessment Protocols***
Marie Isabel Braga, Environment and Natural Resources, Asia Technical, World Bank

14:15 ***Project-Level Integration for Mainstreaming***
John Bizer, Consultant

14:30 ***Discussion***

14:45 ***Final Panel***
John Briscoe,* Global Water Unit, World Bank
Denis Mahar,* Environment, Latin America and the Caribbean, World Bank
David Hales, U.S. Agency for International Development

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*To be confirmed.

FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

OCTOBER 6–7, 1997
WASHINGTON, DC

BIOGRAPHIES OF PROGRAM PARTICIPANTS

MAHMOOD YOUSEF ABDULRAHEEM

Mahmood Yousef Abdulraheem is Technical and Administrative Coordinator of the Regional Organization for the Protection of the Marine Environment (ROPME) in Kuwait. His main areas of interest are environmental monitoring and impact assessment, water quality analysis, and waste management.

As a government official Dr. Abdulraheem has represented Kuwait at international and regional meetings, including the United Nation Environment Programme's (UNEP) Governing Council, the 1992 UN Conference on Environment and Development (UNCED), and the Arab League. He has also attended conferences of environmental conventions, including the Basel Convention on Hazardous Wastes, the Biological Diversity, and the Climate Change Conventions. Dr. Abdulraheem is the former Director and Secretary of the Environment Protection Council in Kuwait, a position to which he acceded after serving as Deputy Director. He was also seconded as the Director of the Shuaiba Industrial Authority Environment Protection Laboratory. He began his career as a chemist at the Kuwait Ministry of Health, Occupational Health Section.

Dr. Abdulraheem has a BA degree from the University of Miami in Ohio and a PhD from the University of Liverpool.

DELMAR ALBERTO BLASCO

Delmar Blasco is the Secretary General for the Ramsar Convention. Among his responsibilities are providing leadership in the creation of global strategies for the conservation and wise use of wetlands and water resources, as well as liaising with other environmental conventions, and governmental and nongovernmental organizations. Previously, Mr. Blasco was Executive Director of the International Council of Voluntary Agencies, an international association of more than 100 NGOs. Earlier, he headed

the Council, Membership and External Relations Division of the World Conservation Union (IUCN) and its Membership Services Unit. In earlier positions he was Executive Director of the Environment Liaison Centre International in Nairobi, Kenya.

Mr. Blasco studied Social Anthropology at the National University of Rosario, Argentina.

Eileen Claussen

Eileen Claussen, a partner in the public affairs firm of Alcalde & Fay, is the former U.S. Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs. She was responsible for developing and implementing U.S. policy on major international issues, including climate change, ozone depletion, chemicals, forests, biodiversity, oceans, fisheries and wildlife conservation, and sustainable development.

Prior to joining the Department of State, Ms. Claussen served for three years as a Special Assistant to the President and Senior Director for Global Environmental Affairs at the National Security Council. During this time she also served as Chairman of the United Nations Multilateral Montreal Protocol Fund. From 1987 to 1993 she was Director of Atmospheric Programs at the U.S. Environmental Protection Agency.

Ms. Claussen received an MA degree from the University of Virginia, and a BA from The George Washington University.

Peter Doherty

Peter Doherty is Chairman of the Department of Immunology at St. Jude Children's Research Hospital in Tennessee, United States. He received the Nobel Prize for Physiology or Medicine in 1996. Dr. Doherty's research interests include cell-mediated immunity, T cell recognition and repertoire, immunological tolerance, viral immunology, immunopathology, and immune memory.

Before his current position, he was Professor and Head, Department of Experimental Pathology, at the Australian University, Canberra. Before that he was Associate Professor/Professor at the Wistar Institute in Philadelphia, Pennsylvania, United States. He was also a Research Fellow at the Australian University, Canberra, a Senior Scientific Officer at the Moredun Research Institute in Edinburgh, and a Veterinary Officer in Brisbane, Australia. Dr. Doherty has also been involved in many consultant activities.

Dr. Doherty received BVSc and MVSc degrees from the University of Queensland, Australia, and a PhD from the University of Edinburgh, the United Kingdom. He has published more than 200 scientific articles, as well as numerous book articles and review articles.

Rudolf Dolzer

Rudolf Dolzer is Director and Professor at the Institute for International Law at the University of Bonn. His fields of interest include international economic law and politics and environmental law and politics. He has focused on issues of sustainable development, environmental conventions; the effort to stem climate change, biodiversity, international waters, ozone depletion, the role of international institutions; environment, trade and investment; and North/South cooperation.

Dr. Dolzer served as a member of the German Parliamentary Commission on Protection of the Atmosphere from 1990 to 1994 and of the Scientific and Technical Advisory Panel of the Global Environment Facility from 1991 to 1994, and as the Director General of the Office of the Federal Chancellor from 1992 to 1996.

Dr. Dolzer received a BS in sociology, political sciences and law at Tübingen University in Germany, and a Doctorate in Law at Heidelberg University. He also received a Doctorate in Law at Harvard University in the United States. He has published widely.

Mohamed T. El-Ashry

Mohamed El-Ashry is Chief Executive Officer and Chairman of the Global Environment Facility.

Previously, Dr. El-Ashry was the Chief Environmental Advisor to the President and Director of the Environment Department at the World Bank. Before joining the World Bank, he served as Senior Vice President at the World Resources Institute and as Director of Environmental Quality at the Tennessee Valley Authority. He has held teaching and research positions at Cairo University, Pan-American-U.A.R. Oil Company, Illinois Geological Survey, Wilkes University, and the Environmental Defense Fund. He served as Senior Environmental Advisor to the United Nations Development Program, and as Special Advisor to the Secretary General of the 1992 UN Conference on Environment and Development.

Dr. El-Ashry received his BS degree from Cairo University and his PhD in geology from the University of Illinois. He has published widely.

Kass Green

Kass Green is President and a cofounder of Pacific Meridian Resources, a natural resources consulting firm that operates from offices in California, Georgia, Oregon, and Utah. Ms. Green's background includes over twenty years' experience in natural resource policy, economics, Geographic Information Systems (GIS) analysis, and remote sensing. She is author of numerous articles on GIS and remote sensing and is co-authoring a book on the practical aspects of accuracy assessment.

Steven P. Hamburg

Steven Hamburg is Ittleson Associate Professor in Environmental Studies and Ecology and Evolutionary Biology at Brown University, United States. His research focuses on terrestrial ecosystems in North and Central America and in Taiwan.

Formerly, Dr. Hamburg was Senior Ecologist at the Environmental Defense Fund, where he remains a consultant. Before taking his position at Brown, he served as the Director of the Environmental Studies Program and, prior to that, as an Assistant/Associate Professor in the Environmental Studies Program and Department of Systematics and Biology at the University of Kansas. Dr. Hamburg has consulted to the Intergovernmental Panel on Climate Change, and is a contributor to the "Interlinkages" Assessment Report being cosponsored by the United Nations Environment Programme (UNEP), the U.S. National Aeronautics and Space Administration (NASA), and the World Bank.

Dr. Hamburg completed his undergraduate education at Vassar College in the United States and earned a PhD from Yale University.

Henry J. Hatch

Henry J. (Hank) Hatch serves as Chair of the World Engineering Partnership for Sustainable Development. Concurrently, Mr. Hatch is President and Chief Executive of Fluor Daniel Hanford, Inc., in Washington State, United States. In 1996 the company was awarded a $4.8 billion contract to clean up the U.S. Department of Energy's Hanford Site, where material was produced during World War II and the Cold War to support the U.S. nuclear weapons programs. Before joining Fluor Daniel, Mr. Hatch was Chairman of the Law Companies Group, an international engineering and environmental services company.

Mr. Hatch served for thirty-five years in the United States Army, retiring as a Lieutenant General in the position of Chief of Engineers and Commander of the U.S. Army Corps of Engineers. In this position he commanded over 40,000 members of the Corps, supervising programs in excess of $13 billion annually. While at the Corps, Mr. Hatch also sought a broader environmental engineering mission for the organization.

Mr. Hatch is a graduate of the West Point Military Academy. He received a MS degree in geodetic science from Ohio State University.

Torkil Jonch-Clausen

Torkil Jonch-Clausen is Chairman of the Technical Advisory Committee of the Global Water Partnership in Stockholm. He is also Director of the Institute for the Water Environment in Denmark, an independent research and development and consulting organization affiliated with the Danish Academy of Technical Sciences. There he is responsible for collaboration with the World Health Organization and the United Nations Environment Programme on water issues.

Previously, Dr. Clausen worked at the Ministry of Foreign Affairs for DANIDA, the Danish development agency. From 1987 to 1989 he worked as the Counselor for Development Cooperation at the Danish Embassy in Bangladesh. From 1984 to 1987 he served as Technical Advisor, with responsibilities for appraising and monitoring water supply and sanitation projects in Africa and Asia. Previously, at the Danish Hydraulic Institute he was responsible for water projects in Africa and Asia as well as in Denmark. Early in his career, he worked for the UN Food and Agriculture Organization in Somalia.

Dr. Clausen has a MS degree in civil engineering from the University of Denmark and a PhD from Colorado State University in the United States.

Yolanda Kakabadse

Yolanda Kakabadse is President of the World Conservation Union (IUCN) Council as well as Executive Vice President of the Fundación Futuro Latínoamericano. The purpose of the Fundación, located in Ecuador, is to establish policy dialogues among decisionmakers in Latin America to reach negotiated agreements among different sectors in conflict. The Fundación also trains facilitators and conflict managers in sustainable development.

Yolanda Kakabadse is also a member of the Board of Directors of the World Resources Institute and the Board of Directors of the Ford Foundation and serves on the advisory council to the Environmentally and Socially Sustainable Development vice presidency at the World Bank. She is a senior advisor to the United Nations Development Programme's Administrator and a Counselor to the President of the Global Environment Facility. Previously, Ms. Kakabadse was the Nongovernmental Organization (NGO) Liaison Officer for the 1992 Rio de Janeiro UNCED Conference and the Executive Director of Fundación Natura in Ecuador.

Mohamed Kassas

Mohamed Kassas is Professor Emeritus of Botany at the University of Cairo. He was President of the International Union for Conservation of Nature and Natural Resources (IUCN) from 1978 to 1984. He was awarded the UN Prize for the Environment.

His principal research interests during the last fifty years have been in plant ecology, especially in arid lands. He was among those who warned the world against the hazards of desertification and contributed to the UNESCO Arid Lands Research Programme, including the ecological maps of the Mediterranean Basin, from 1950 to 1960 and to the scientific preparation for the United Nations Conference on Desertification in 1977. Dr. Kassas was on the panel of Senior Advisors to the United Nations Environment Programme (UNEP) between 1973 and 1992 and was one of the scientific editors for the UNEP study, The World Environment 1972-82. He serves on the editorial boards of several international ecology and environmental sciences journals. He is a member of many organizations, including the Club of Rome.

Dr. Kassas earned BS and MS degrees from Cairo University. He earned a PhD from the University of Cambridge in England.

Jemal-ud-din Kassum

Mr. Jemal-ud-din Kassum is Vice President, Investment Operations, at the International Finance Corporation (IFC) of the World Bank Group. He has global responsibility for all new investments undertaken by the Regional and Specialist Investment Departments of the Corporation.

He joined the World Bank Group in the Young Professional Program in 1974 and transferred to the IFC in 1975. After six years' work in the Africa Region and two years as Special Assistant to the Executive Vice President, he was appointed to various management positions in the Asia Region including Division Manager, Department of Investments (1983) and Chief of IFC's Regional Mission in New Delhi (1987). Mr. Kassum was promoted as Director, Department of Investments, Asia II, in 1988.

Mr. Kassum, a Tanzanian national, studied at Harrow School, England, and holds an engineering with economics degree from Oxford University (1970) and an MBA from Harvard Business School (1974).

Caio K. Koch-Weser

Caio Koch-Weser is a Managing Director at the World Bank, with responsibility for with responsibility for the IBRD's operations, operational policies, and supervision of the vice presidencies for Europe and Central Asia, Middle East and North Africa, Latin America and the Caribbean, Human Development, and Environmentally and Socially Sustainable Development. Previously, he served as Vice President of the Middle East and North Africa Region in the Bank.

Mr. Koch-Weser's prior responsibilities at the World Bank included serving as Deputy Treasurer and Director of Treasury Operations in the Finance Complex, Director of the Western Africa Department, and Division Chief for China. Joining the Bank in 1973 in the Young Professionals Program, he first served as an economist with the Human Resources Division of the Development Policy Staff, then as a Health Projects Officer with the Central Projects Staff.

A German and Brazilian national, Caio Koch-Weser attended the Universities of Münster, Berlin, and Bonn in Germany, where he studied economics, sociology, and history. He obtained his Master's degree in economics and participated in the PhD program conducting his thesis research in Brazil. During that period he also represented the Friedrich-Ebert Foundation in Brazil, supporting labor unions, social research institutes, and nongovernmental organization projects. He was a trainee at Siemens, Inc., in Munich, São Paulo, and New York.

Sarwono Kusumaatmadja*

Huguette Labelle

Huguette Labelle is President of the Canadian International Development Agency (CIDA) and Chancellor of the University of Ottawa. She is a member of the Board of Directors of the Public Policy Forum, the International Development Research Centre, the Export Development Corporation, the International Centre for Human Rights and Democratic Development, the International Institute for Sustainable Development, and the World Health Organization's Working Group on Health and Development Policies.

Previously, Dr. Labelle served in Canada as Deputy Minister of Transport, Chairman of the Public Service Commission, Under-Secretary of State, Associate Secretary to the Cabinet, and Deputy Clerk of the Privy

Council. She held senior management positions in Indian and Northern Affairs, and Health and Welfare Canada. She has served as President and also Chairman of the Canadian Red Cross Society.

Dr. Labelle has a PhD in Education from the University of Ottawa.

Johannes F. Linn

Johannes F. Linn is Regional Vice President for Eastern Europe and Central Asia at the World Bank. Formerly, he was Vice President for Financial Policy and Resource Mobilization, in charge of overall financial policies and prudential management of the World Bank (IBRD and IDA) and in charge of mobilizing capital resources for IBRD and donor resources for IDA and the Global Environment Facility (GEF). He has worked with the Bank since 1973 as Country Economist and Economic Advisor for the East Asia Regional Staff, and as Senior Economic Advisor of the Development Economics Staff. He has served as Director in two departments: International Economics and Country Economics. He was Staff Director of the World Development Report 1988, which dealt principally with issues of public finance in development. Dr. Linn spent six months as a visiting researcher at the University of Münster in Germany.

Dr. Linn studied law at the Free University, Berlin. He received his training as an economist at Oxford University and holds a PhD from Cornell University.

Callisto Madavo

Callisto Madavo is Co-Vice President of the World Bank's Africa Region, directing Bank operations in twenty-five of Sub-Saharan Africa's forty-eight countries. He is also the Bank's ranking representative in such Africa-wide initiatives as the Special Program for Africa, which mobilizes targeted funding for countries in particular need, and the UN/World Bank-sponsored Initiative for Africa, which coordinates external assistance to the continent. He also works closely with key development institutions such as the UN Economic Commission for Africa, the African Development Bank, and the Organization for African Unity.

Previously, Dr. Madavo served as Director of the East Asia and Pacific Country Department in the World Bank. Before that he served as Director of the Eastern Africa Department, Assistant Director of the East and Southern Africa Projects Department, Division Chief for the Pakistan Programs Division of the South Asia Country Programs Department, and Division Chief for the Urban Projects Department for both East and West Africa. Callisto Madavo, who joined the World Bank in 1969 in the Young Professionals Program, began his tenure as an economist with the Bank's Urbanization and Regional Projects Division, from which he was promoted to Senior Economist.

He received his early education in Zimbabwe. He received his BA, MA, and PhD in economics from Notre Dame University.

Nicolás Mateo

Nicolas Mateo is General Coordinator, Biodiversity Prospecting Division, at the National Biodiversity Institute (INBio) in Costa Rica. Previously, he served as Director of the International Network for the Improvement of Banana and Plantain (INIBAP) in France, and as Associate Director at the International Development Research Centre (IDRC) in India and Singapore. In 1987 and 1988 Dr. Mateo was a visiting scientist at the International Rice Research Institute (IRRI) in the Philippines. Prior to that, he served as a senior program officer at the IDRC in Colombia, and as an agronomist for the Centro Agricultura Tropical de Investigación y Enseñanza (CATIE) in Honduras and in his native Costa Rica. He began his professional career in the Ministry of Agriculture in Costa Rica.

Dr. Mateo received his undergraduate education at the University of Costa Rica, where he also earned a MSc in crops and cropping systems. He received his PhD in agronomy and soils from the University of Florida, Gainesville, in the United States.

George A. Olah

George Olah is the Director of the Loker Hydrocarbon Research Institute at the University of Southern California, United States. He was awarded the Nobel Prize in Chemistry in 1994.

In previous positions at USC he was the Loker Distinguished Professor of Organic Chemistry and the Scientific Director of the Hydrocarbon Research Institute. Earlier, he was the CF Mabery Distinguished Professor of Research in Chemistry at Case-Western Reserve University and Professor and Chairman of the Department of Chemistry at Western Reserve University, both in the United States. Preceding that, he was Senior Research Scientist for Dow Chemical.

Born in Hungary, Dr. Olah received his undergraduate education and PhD at the Technical University of Budapest, where he subsequently taught for seven years, becoming head of the Organic Chemistry Department and Associate Director of the Central Research Institute of the Hungarian Academy of Sciences.

Dr. Olah has published more than 1,000 scientific papers and several university texts. He has also obtained 100 patents. Dr. Olah has received awards from many international academies, societies, and foundations, as well as many honorary degrees.

Reuben Olembo

Reuben Olembo is an Assistant Secretary General of the United Nations and Deputy Executive Director of the United Nations Environment Programme in Nairobi, Kenya, where he has been since 1975. He was Founder Director and Coordinator of the Division of Environmental Management from 1981 to 1987. He became Assistant Director for Programmes in 1987, heading all processes for the Convention for Biological Diversity and contributions for the 1992 UNCED process.

Prior to coming to the United Nations, Dr. Olembo taught at Makerere and Nairobi University, where he was the first Kenyan Professor and Head of the Department of Botany. Nationally, he served as Chairman of the Boards of Kenya National Parks, the Kenya Wildlife Fund Trustees, Kenya Marine and Research Institute, and Scientific Advisor to the Ministry of Natural Resources. He was also a Trustee of the International Institute of Tropical Agriculture (Ibadan, Nigeria), the International Board of Plant Genetic Resources (Rome, Italy), and the World Conservation Monitoring Centre (Cambridge, United Kingdom).

Dr. Olembo obtained the BSc, MSc, and PhD degrees from Purdue University, Indiana, United States. In 1994 the university conferred on him the Distinguished Agricultural Alumnus status. Professor Olembo's publications are in the disciplines of genetics, ecology, and environmental policy.

Alassane D. Ouattara

Alassane Ouattara assumed office as Deputy Managing Director of the International Monetary Fund in 1994. Mr. Ouattara was Prime Minister of the Republic of Côte d'Ivoire from November 1990 to December 1993.

Following his appointment as an economist at the IMF from 1968 to 1973, he served as Chargé de Mission at the Central Bank of West African States (BCEAO) in Paris from 1973 to 1975, when he became Special Advisor to the Governor and Director of Research. He was appointed Vice Governor of the BCEAO in 1983. He returned to the IMF as Director of the African Department in 1984 and simultaneously, from 1987, as Counsellor to the Managing Director. In 1988 Mr. Ouattara was named Governor of the BCEAO. Beginning

in 1990, he served concurrently as Chairman of the Interministerial Committee for Coordination of the Stabilization and Economic Recovery Programme of Côte d'Ivoire in Abidjan.

Mr. Ouattara earned his BSc degree in business administration from Drexel Institute of Technology in Philadelphia and his MA and PhD degrees in economics from the University of Pennsylvania. He has published widely in the political, economic, and social fields.

Mr. Ouattara was awarded the Commander of the Ordre du Lion from Sénégal, Commander of the Ordre du Mono from Togo; Grand Officier of the National Order of Côte d'Ivoire, and Honorary Governor, BCEAO.

Rajendra K. Pachauri

Rajendra Pachauri is Director of the Tata Research Institute in New Dehli, a position he has held since 1981. He is also President of the Asian Energy Institute and an Advisor to the Administrator of the UN Development Programme on Energy and Sustainable Management of Natural Resources. His fields of interest include energy, development, environment, and climate change.

Dr. Pachauri sits on the Climate Institute Advisory Board as well as on the Board of the International Solar Energy Society. In 1988 he was President of the International Association for Energy Economics and served as Chairman of that organization in 1989 and 1990. In India he serves on a number of committees in the areas of power and energy, and petroleum and natural gas.

Rajendra Pachauri earned a PhD in industrial engineering, as well as a PhD in economics, from North Carolina State University. He is a graduate of the Institution of Mechanical Engineers and the Institution of Production Engineers in London. He has written or edited twenty books and published numerous papers and articles. He writes regularly for a number of newspapers in India and is affiliated with many professional journals.

Charles Perrings

Charles Perrings is the Head of the Department of Environmental Economics and Environmental Management at the University of York in the United Kingdom. Previously, he was Director of the Biodiversity Programme at the Beijer Institute in Stockholm, Sweden; Professor of Economics at the University of California at Riverside in the United States; Head of the Economics Department at the University of Botswana; Lecturer and Professor at the University of Auckland in New Zealand; and Lecturer at the National University of Lesotho. He has also consulted with many international government and nongovernmental organizations.

Dr. Perrings earned his undergraduate degree and his PhD from the University of London. He has written a number of studies ranging from the economics of ecological resources to sustainable development, poverty alleviation, biological diversity, biodiversity conservation, and the interdependence of economics and the environment.

Peter H. Raven

Peter Raven is Director of the Missouri Botanical Garden and Engelmann Professor of Botany at Washington University in St. Louis, Missouri. His professional emphases are sustainable agriculture and forestry in the tropics and the preservation of plants and animals throughout the world.

In the United States Dr. Raven is Home Secretary of the National Academy of Sciences, Chairman of the Report Review Committee of the National Research Council, and a member of the President's Committee of Advisors on Science and Technology. He is a member of the Committee on Research and Exploration of the National Geographic Society, Co-chair of the Editorial Committee of the Flora of China Project, and Chairman of the U.S. Civilian Research and Development Foundation for the Independent States of the Former Soviet Union.

Before coming to St. Louis in 1971, Dr. Raven was a member of the Department of Biological Sciences at Stanford University. He is past president or past chairman of a number of scientific groups or institutes.

Dr. Raven received his PhD at the University of California at Los Angeles. He did his undergraduate work at the University of California at Berkeley. He is the author of more than 450 scientific papers and eighteen books, including textbooks in biology and botany. He is also the recipient of many international awards.

Manuel Rodriguez-Becerra

Manuel Rodriguez-Becerra is Professor of Environmental Policy at the Andes University in Bogotá and a private consultant on environmental affairs to both national and international organizations.

Mr. Rodriguez-Becerra served as an advisor to the Colombian Ministry of the Environment (1995-97) for the Intergovernmental Panel on Forests. He also contributed to the Sustainable Forests Management Action Plan for the Risaralda West Region, a 90,000-hectare forest inhabited by indigenous and mestizo peoples. He was Co-chair of the Intergovernmental Panel on Forests of the United Nations Commission on Sustainable Development, and he is a contributor to the "Interlinkages" Assessment Report being cosponsored by the United Nations Environment Programme (UNEP), the U.S. National Aeronautics and Space Administration (NASA), and the World Bank.

Mr. Rodriguez-Becerra received his undergraduate training in industrial engineering at Andes University and a Master of Philosophy degree in management from Oxford. He is the author of numerous articles and books on environmental management.

David Malin Roodman

David Roodman is Senior Researcher at the Worldwatch Institute. He specializes in economics and the political economy of environmental problems, in particular, energy policy, the human and ecological impact of construction, and the effects that taxes and subsidy policies have on the environment. He writes regularly for Worldwatch and for selected newspapers.

Before joining the Worldwatch Institute, Mr. Roodman worked at the Institute for Human Development in Philadelphia and the Energy Study Institute in Washington, D.C. Mr. Roodman received a BA in pure mathematics from Harvard University. He also studied at the University of Cambridge, where his interests shifted to the relationship between the economy and the environment.

Sven Sandström

Sven Sandström is Managing Director for Corporate Planning and Resource Management at the World Bank. In this position he is also responsible for resource mobilization for the International Development Association (IDA) and the Bank's participation in the debt initiative for the highly indebted poor countries (HIPC). Sven Sanström is also a member of the Executive Committee, which guides the Bank Group's strategic direction. Before his current appointment Sven Sandström served as Director of the Office of the President. Earlier, he was Director of the Bank's Southern Africa Department and had held a series of management positions with increasing responsibility, particularly in Africa and Asia. He began his career in the Bank in the early 1970s as a project analyst in the transport, water, and sanitation, and urban development sectors.

Dr. Sandström graduated from the Royal Institute of Technology in Stockholm (DrSc in civil engineering), the Stockholm School of Economics (MBA) and University of Stockholm (BA). He worked as a consultant in Sweden from 1966 to 1968 and as a research associate at the Massachusetts Institute of Technology and Harvard Business School in the United States from 1969 to 1972, when he joined the World Bank.

Jean-Louis Sarbib

Jean-Louis Sarbib has been Co-Vice President for the Africa Region of the World Bank since April 1996. Previously, he served as Director for the Western Africa Department, Division Chief for Country Operations in the Sahelian Department, and Deputy Division Chief in the Industry Department's Mining and Non-Ferrous Metals Division. Before that, he served as Senior Loan Officer in the East and South Africa Country programs Department II. Earlier, he was Senior Planning Advisory Officer. Mr. Sarbib began his career at the Bank in 1980 as a Planning Advisory Officer assigned to the East Africa Region.

Prior to joining the Bank, Mr. Sarbib worked in the French government and taught at the University of Pennsylvania and at the University of North Carolina at Chapel Hill.

Mr. Sarbib holds an Engineering degree from the Ecole Nationale Supérieure des Mines de Paris in France. He did his post-graduate studies in city and regional planning at the University of Pennsylvania.

K. Madhava Sarma

K. Madhava Sarma is Executive Secretary of the Secretariat for the Vienna Convention and the Montreal Protocol, a position he has held in the United Nations Environment Programme for six years.

Madhava Sarma is also a member of the Indian Administrative Service. He has held senior positions at the state level as a general administrator with responsibilities for water supply, irrigation, and power. He served in the national government for five years in the Ministry of Environment and Forests. As an Additional Secretary at the Ministry of the Environment and Forests, he participated in international meetings on global environmental issues and helped clarify the role of developing countries in the preservation of the global environment.

Peter Schei

Peter Schei is the Special Advisor to the Minister of Environment in Norway. He has extensive experience in nature conservation and the sustainable use of biodiversity, as well as in the integration of biodiversity into national and sector plans. Mr. Schei also has extensive experience in the negotiation of environmental treaties and their implementation, both on a national and international level.

Most recently, Mr. Schei served as the Chairman of the Subsidiary Body on Scientific, Technical, and Technological Advice for the Convention on Biological Diversity. In 1993 he was the Co-Chair of UNEP Panel 1 on the scientific and technical basis for implementing the Convention. In Norway for many years he has been the head of the national delegation to the Convention on International Trade in Endangered Species. More recently, he has held the same position with respect to the Convention on Biological Diversity.

Mr. Schei's areas of interest include the study of terrestrial ecosystems, bird ecology, and protected areas. He has gained field experience in many regions of the world including Africa, Central and South America, parts of South and South East Asia, Eastern Australia, and Western and Eastern Europe.

Mr. Schei earned a MSc in zoology at the University of Oslo. He has received many national awards for his work in biological conservation.

Ismail Serageldin

Ismail Serageldin is Vice President for Environmentally and Socially Sustainable Development (ESSD) at the World Bank, Chairman of the Consultative Group on International Agricultural Research (CGIAR), Chairman of the Consultative Group to Assist the Poorest (CGAP), and Chairman of the Global Water Partnership (GWP). He has published widely on economic development, human resource issues, and the environment. He has been awarded three honorary doctorates: from the University of Bucharest in sociology, and from the University of

Christopher G. Weeramantry

Christopher Weeramantry is Vice President of the International Court of Justice in The Hague. He has been a member of the Court since 1991.

Prior to joining the Court, Judge Weeramantry participated in a number of international initiatives concerning human rights. He was the editor of a two-volume United Nations study on science, technology and human rights. He was a Panelist on the Scientists Committee on Problems of the Environment/Environmental Consequences of Nuclear War. He also served as Vice Chairman of the United Nations Centre against Apartheid. Judge Weeramantry began his career in Sri Lanka, where he served as Justice of the Supreme Court. Before that, he was Commissioner of Assize, Supreme Court, and before that Advocate, Supreme Court.

Judge Weeramantry has taught at numerous universities throughout the world, including Monash University, Melbourne, Australia; University of Hong Kong; University of Tokyo; University of Papua New Guinea; and University of Florida.

Judge Weeramantry received his undergraduate and legal graduate training at the University of London. He has published widely, including a long report on environmental damage to the island state of Nauru.

James D. Wolfensohn

James Wolfensohn is the ninth President of the World Bank Group. In addition to his career as an investment banker he has a long record of parallel involvement in development issues and the global environment. Since he assumed the Bank presidency, he has traveled widely to Africa, the Caribbean, Central Asia, East Asia, Eastern Europe, Latin America, and the Middle East. He has taken the initiative to form new strategic partnerships between the Bank Group and the governments it serves, the private sector, civil society, regional development banks, and the United Nations. To improve the Bank's effectiveness in fighting poverty and to meet the needs of a rapidly changing global economy Mr. Wolfensohn has launched a major reform program in the Bank, the Strategic Compact. Among the many other initiatives he has pursued at the Bank are efforts to mainstream environmental issues in all aspects of Bank activity.

Before joining the Bank, Mr. Wolfensohn was President and Chief Executive Officer of James Wolfensohn, Inc. (in which he relinquished all interests). Prior to that, he was head of the investment banking department for Salomon Brothers. He was also Chairman of the Board of Trustees of the John F. Kennedy Center for the Performing Arts, Chairman of Carnegie Hall, President of the International Federation of Multiple Sclerosis Societies, Director of the Business Council for Sustainable Development, both Chairman and board member of the Finance Committee of the Rockefeller Foundation, and a member of the Middle East Economic Strategy Group.

Mr. Wolfensohn holds a BA and LLB from the University of Sydney and an MBA from the Harvard Graduate School of Business. He has received numerous awards and honors, including Honorary Knighthood by Queen Elizabeth II for his contribution to the arts, and in particular for artistic exchange between the United States and Great Britain.

Mr. Wolfensohn is Chairman of the Institute for Advanced Study at Princeton University, an Honorary Trustee of the Brookings Institution, and a member of the Council on Foreign Relations. He is also a Fellow of the American Academy of Arts and Sciences and a Fellow of the American Philosophical Society.

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*Biography not available at time of printing.

José I. Vargas

José Israel Vargas is Minister of Science and Technology in Brazil. His fields of specialization include the chemical consequences of nuclear transformation, solid state chemistry and hyperfine interactions in solids as well as high temperature superconductors, and modeling techniques of science and technology diffusion.

Among the many international organizations for which Dr. Vargas has worked are the International Atomic Energy Agency (IAEA), UNESCO, and the UN Committee on Science and Technology for Development. He also worked for the Commissariat a l'Energie Atomique in France. In Brazil he has worked for the National Research Council and the Presidential National Energy Commission. He has also been State Secretary for Science and Technology, Minas Gerais, and the Secretary for Industrial Technology, Ministry of Industry and Trade. Dr. Vargas has been a professor at several universities and institutes.

He obtained his undergraduate degree in chemistry from the University of Minas Gerais in Brazil and his PhD from Cambridge University in England.

Bernd von Droste zu Hülshoff

Bernd von Droste is the Director of the UNESCO World Heritage Centre and Secretary of the World Heritage Convention. Previously at UNESCO, he was Director of the Division of Ecological Sciences, Executive Secretary of the Man and the Biosphere Programme, and Publishing Director of the quarterly journal, Nature and Resources. Dr. von Droste began his career at UNESCO as a Programme Specialist in various fields of ecology. Before working for UNESCO, Dr. Droste had been a forester, subsequently returning to school to earn a PhD in forest ecology studies from the University of Munich, where was appointed Associate Professor. Dr. von Droste is the author of over 170 scientific papers and several books, primarily in the fields of heritage conservation, ecology, forestry, hydrology, and cultural landscapes.

Robert T. Watson

Robert Watson is Director of the Environment Department and Head of the Environment Sector Board at the World Bank. He joined the Bank in 1996 as the institution's Senior Scientific Advisor, sitting in the Environment Department. Previously, he served as Associate Director for Environment in the Office of Science and Technology Policy in the Executive Office of the U.S. President. Prior to joining the Clinton White House, Dr. Watson was Director of the Science Division and Chief Scientist for the Office of Mission to Planet Earth at the National Aeronautics and Space Administration (NASA).

Dr. Watson has played a key role in the negotiation of global environment conventions and the evolution of the Global Environment Facility (GEF). From 1991 to 1994 he served as Chairman of the GEF's Scientific and Technical Advisory Panel. He is Chair or Co-Chair of a number of international scientific assessments, including Working Group II of the Intergovernmental Panel on Climate Change (IPCC), the United Nations Environment Programme/World Meteorological Organization (UNEP-WMO), International Scientific Assessment of Ozone, and UNEP's Global Biodiversity Assessment. He was recently elected the next Chair of the IPCC.

Dr. Watson received his PhD in chemistry from London University in 1973. He has received numerous awards and prizes.

Maurice Strong's global leadership on environment and social policy has been acknowledged by the award of many personal and professional honors. He is a member of the Queen's Privy Council of Canada and has received honorary doctorates from forty universities.

Mostafa K. Tolba

Mostafa Tolba is a former Under Secretary General to the United Nations, where he was Executive Director of the United Nations Environment Programme (UNEP) from 1973 to 1992, elected to four terms.

Currently, Dr. Tolba is President of the International Center for Environment and Development and of the Environmental, Engineering and Geological Consulting Office at Cairo University. Before becoming Director of UNEP, Dr. Tolba served for two years as Deputy Director. Previously, he was Alternate Member of the Executive Board for UNESCO. In Egypt Dr. Tolba was Minister of Youth for the Egyptian Academy of Scientific Research and Technology and served in the Egyptian Government as Under Secretary of State in the Ministry of Education. He also served as Cultural Counselor and Director at the Egyptian Education Bureau in the Egyptian Embassy in the United States. Before that he was Assistant Secretary and Secretary General at the Supreme Science Council. Dr. Tolba began his career as a professor at Cairo University. He also taught at Baghdad University.

Dr. Tolba received his undergraduate education in botany from the University of Cairo. He earned his PhD in microbiology from Imperial College in London. He has published nearly 100 scientific papers, and hundreds of articles as well as seven books on international environmental issues. He is the recipient of numerous awards and honors.

Tamarii Tutangata

Tamarii Tutangata is Director of the South Pacific Regional Environment Program. Previously, he served for ten years in a variety of positions with the Government of the Cook Islands, including senior consultant to the Prime Minister and the Ministry of Planning and Economic Development, Chief Executive Officer to the Prime Minister, and Secretary of the Prime Minister's Department. He also served as Secretary to the Ministry of Cultural Development and Chairman of the National Conservation Advisory Council.

Previous to these positions, he worked at the South Pacific Commission in New Caledonia, where he was promoted to Director of Programmes.

Tamarii Tutangata received his college and university education in New Zealand.

Ola Ullsten

Ola Ullsten is Co-Chair of the World Commission on Forests and Sustainable Development. Since 1983 he has been a member of the InterAction Council of former Heads of State and Government (IAC).

Ola Ullsten is a former Prime Minister of Sweden. Other positions he has held in Swedish government and politics include Deputy Prime Minister, Minister of Foreign Affairs, Ambassador to Italy, Ambassador to Canada, Leader of the Liberal Party, Minister for International Development Cooperation, and Member of Parliament.

In the international arena Ola Ullsten is a past member of the "Eminent Advisor Group" to the Secretary General of UNCED, Chairman of the UN Food and Agriculture Organization Independent Review Team of Tropical Forestry Action Plan, Co-Chair of the European Forum for Forest Protection, and Chairman of the IAC High Level Group of Experts on Transfer of Resources to Developing Countries (1984) and on "Global Deforestation Trends."

Melbourne and the Indian agricultural research Institute in Agricultural Science. His most recent books are *Sustainability and the Wealth of Nations: First Steps in an Ongoing Journey (1996) and Nurturing Development: Aid and Cooperation in Today's Changing World* (1995).

Ismail Serageldin earned his BSc degree at Cairo University and his Master's and PhD degrees at Harvard University.

Jean-Michel Severino

Jean-Michel Severino is Vice President of the East Asia and Pacific Region at the World Bank. He joined the Bank in 1996 as Director of Country Department II in the Europe and Central Asia Region, responsible for Bosnia.

Before joining the Bank, Mr. Severino served as Director of Development in the French Ministry of Cooperation and Development, reporting directly to the Minister. Career posts included Economic and Financial Advisor to the Cabinet, Chief of Finance Studies and Foreign Relations at the Ministry of Development and Cooperation, and Financial Auditor at the Ministry of Economy and Finance.

Born in Abidjan, Côte d'Ivoire, Mr. Severino graduated from the Ecole Supérieure de Commerce and Institut d'études politiques in Paris. He completed his Master's degrees in law and economics at the University of Paris and graduated from the National School of Administration (ENA).

Joseph E. Stiglitz

Joseph Stiglitz is Senior Vice President, Development Economics, and the Chief Economist at the World Bank. Previously, he was Expert Economist at the U.S. Council of Economic Advisors, which advises the President on economic issues. Preceding that, he was Professor of Economics at Stanford University and Senior Fellow at the Hoover Institution at Stanford. Joseph Stiglitz has taught at Princeton University; Oxford University; Yale University; University College, Nairobi, Kenya; the University of Canterbury, Christchurch, New Zealand; and the Massachusetts Institute of Technology (MIT).

Dr. Stiglitz has consulted to many organizations, including the Ford Foundation (Energy Policy Study), the U.S. Department of the Interior (Offshore Oil Leasing Programs), the Federal Energy Administration (Intertemporal Biases in Market Allocations of Natural Resources), the Electrical Power Research Institute, and the Inter-American Development Bank.

He completed his undergraduate training at Amherst College in Massachusetts and his PhD at MIT.

Maurice F. Strong

Maurice Strong, P.C., is Under Secretary General and Executive Coordinator for United Nations Reform at the UN and Senior Advisor to the President of the World Bank. He holds numerous other positions in both the private and public sectors, including Chairman and founder of the Earth Council, Chairman of the World Resources Institute, and Co-Chair with Mikhail Gorbachev of the Earth Charter Commission.

In 1992 Mr. Strong served as the Secretary General of the United Nations Conference on Environment and Development (UNCED, or the Rio Earth Summit), and was Under Secretary General of the United Nations for two years previously. Earlier, he served as Executive Coordinator of the United Nations Office for Emergency Operations in Africa, as the first Executive Director of the United Nations Environment Programme (UNEP) in Nairobi, and as Secretary of the United Nations Conference on the Human Environment. Mr. Strong has held numerous prominent positions in Canada, including Chairman and Chief Executive Officer of Ontario Hydro; and President, Chairman, and CEO of Petro Canada. He was the first President of the Canadian International Development Agency (CIDA).

Participants in International Forest Initiatives

International Tropical Timber Agreement

Producers
- Bolivia
- Brazil
- Cameroon
- Colombia
- Congo, Dem. Rep. of
- Congo, Rep. of
- Costa Rica
- Côte d'Ivoire
- Dominican Rep.
- Ecuador
- El Salvador
- Equatorial Guinea
- Gabon
- Ghana
- Guyana
- Honduras
- India
- Indonesia
- Liberia
- Malaysia
- Mexico
- Myanmar
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Tanzania
- Thailand
- Togo
- Trinidad and Tobago
- Venezuela

Consumers
- Afghanistan
- Algeria
- Australia
- Austria
- Bahrain
- Belgium
- Bulgaria
- Canada
- Chile
- China
- Denmark
- Egypt, Arab Rep. of
- European Community
- Finland
- France
- Germany
- Greece
- Ireland
- Italy
- Japan
- Korea, Rep. of
- Luxembourg
- Nepal
- Netherlands
- New Zealand
- Norway
- Portugal
- Russian Federation
- Slovakia
- Spain
- Sweden
- Switzerland
- United Kingdom
- United States

Intergovernmental Panel on Forests

Helsinki Process
- Albania
- Austria
- Belarus
- Belgium
- Bosnia and Herzegovina
- Bulgaria
- Croatia
- Czech
- Denmark
- Estonia
- European Community
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Liechtenstein
- Lithuania
- Luxembourg
- Malta
- Moldova
- Monaco
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Russian Federation
- Slovak Rep.
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- Ukraine
- United Kingdom

Montreal Process
- Argentina
- Australia
- Canada
- Chile
- China
- Japan
- Korea, Rep. of
- Mexico
- New Zealand
- Russia
- Uruguay
- United States

Tarapoto Proposal
- Bolivia
- Brazil
- Colombia
- Ecuador
- Guyana
- Peru
- Suriname
- Venezuela

Lepaterique Process
- Belize
- Costa Rica
- El Salvador
- Guatemala
- Honduras
- Nicaragua
- Panama

Dry-Zone Africa Process (by region)

Burkina Faso
- Cape Verde
- Chad
- Gambia
- Guinea Bissau
- Mali
- Mauritania
- Niger
- Senegal

Djibouti
- Eritrea
- Ehtiopia
- Kenya
- Somalia
- Sudan
- Uganda

Angola
- Botswana
- Lesotho
- Malawi
- Mauritius
- Mozambique
- Namibia
- South Africa
- Swaziland
- Tanzania
- Zambia
- Zimbabwe

Near East Process
- Afghanistan
- Cyprus
- Egypt
- Ethiopia
- Iran, Islamic Rep. of
- Iraq
- Jordan
- Kuwait
- Lebanon
- Libya
- Pakistan
- Qatar
- Saudi Arabia
- Somalia
- Sudan
- Syria
- Tunisia
- Turkey
- United Arab Emirates
- Yemen, Rep. of

Many techniques can be used to arrive at more accurate valuation of forests. One technique looks at nontimber forest products that could be harvested if local communities were made aware of potential markets. Some studies have shown that the value of these products could be substantial. Another technique looks at the economic value of the ecological functions of forests. For example, a wooded area that stems soil erosion could be valued at the level of monetary damage that siltation would cause in an irrigation system. Because of the costs that climate change would impose, forests can also be valued as a function of how much carbon they sequester and thus keep out of the atmosphere. Another technique uses the costs that people are willing to travel to obtain a certain good. The price that people pay for ecotourism, for example, can be used to estimate the value of a particular recreation site. Opportunity costs can also be used to value forest goods, such as firewood, when extensive labor is involved in collecting the wood. Another technique to value forests might look at the relocation expenses of moving indigenous peoples displaced by encroaching pastureland. Substitute goods are another means of valuing forest products. The value of market-traded fruit, for example, can be used to measure the value of nontraded fruit.

Law

To encourage sustainable forest management, broad interest has been expressed in establishing a system of timber certification or ecolabeling. Certification is typically undertaken by third-party organizations that have no self-interest in a specific forest activity, are not stakeholders in the forests being certified, and can assure the public of professional judgment. Ecolabeling criteria can include analyses of forest inventory, management planning, silviculture, harvesting, and road construction. Other criteria can include determinations of whether the rights of workers, local communities, and indigenous peoples are protected. Currently, the best example of certification is the Forest Stewardship Council (FSC).

For further information

International Tropical Timber Organization
5/F Pacifico-Yokohama
1-1-1 Minato-Mirai, Naka-ku
Yokohama 220 Japan
Tel: 81-45-223-1110
Fax: 81-45-223-1111
Website: http://www.itto.or.jp

The World Bank
Washington, D.C. 20433
U.S.A.

ISMAIL SERAGELDIN
Vice President
Environmentally Sustainable Development

Mr. James D. Wolfensohn

October 5, 1997

Dear Jim,

As requested, I am attaching herewith:

First: A binder marked ESSD-5. This includes the materials that I had given to you in Hong Kong. The only addition there is that the VP of El Salvador will be joining the lunch (see tab. 5).

I call to your attention that the notes (just bullets) for the speech are the same as we left them with your office prior to Hong Kong. I believe that your intention, as you expressed it in Hong Kong, was to give a broad picture overview of the global environment and the Bank. As the opening address of the conference, that would be most appropriate. Caio will be speaking later in the day, giving the details of the projects that the Bank is financing, etc. So that would dovetail rather neatly.

Second: A folder marked "Climate Change". This includes material that I faxed to you in Australia. It also includes a copy of Mr. El-Ashry's note about the US and the GEF.

I understand that the White House seminar is now moved to Georgetown University. Bob Watson will be giving you more details.

Third: A note to me from Ken Newcombe. He apparently received a call from the US Treasury concerning the White House conference. Regardless of Ken's views, I thought that it should be brought to your attention for its possible congressional and other implications.

Please feel free to call me at any time (home: 703-528-5350, off: 202-473-4502) if I can be of help.

See you tomorrow. All the best.

Ismail

Mailing Address: 1818 H Street, N.W., Washington, D.C. 20433, U.S.A. • Office Location: 1750 Pennsylvania Avenue, N.W., 7th Floor
Telephone: (202) 473-4502 • Cable Address: INTBAFRAD • Fax: (202) 473-3112

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To Jane Holden | From Isabel
Co./Dept. | Co.
Phone # | Phone # 31765
Fax # 522-0365 | Fax #

Talking Points for Mr. Wolfensohn's Opening Address to The Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development

I. The Global Challenge

- **Achievement of sustained and equitable development remains the greatest challenge facing human kind. Despite substantial development efforts, poverty is not diminishing, and the gap between rich and poor is not decreasing.**
  - 1.3 billion people (23% of the world's population) still live on the equivalent of less than $1 per day, 70% of these are women;
  - 1.3 billion live without clean water, 2 billion are without adequate sanitation, and 2 billion without electricity;
  - 8 million die each year from easily preventable diseases;
  - 800 million are malnourished;
  - 130 million children are not enrolled in primary school (104 million of these are girls).
  - Less than a quarter of the world's people consume three-quarters of its raw materials;

- **Redressing these inequities is not easy, and will only become more challenging in future.**
  - Over the next generation the world's population will increase by 3 billion, and 95% of the increase will add significantly to the 4.7 billion people who currently live in the developing world.
  - Despite our best efforts, delivery of basic needs will be further challenged.
  - Over the next 35 years, agriculture production in developing countries will need to nearly double to meet the projected food needs of growing populations and the increased demands expected to arise from modest income growth.
  - Global energy use is projected to double within the next three decades, with developing countries' demand growing to be twice that of the OECD.
  - Water supply and sanitation services will need to be expanded immensely, and providing users with the services that they want and are willing to pay for will require a much greater role for communities and the private sector.

- **These challenges are even tougher when environmental issues are factored in.**
  - Productivity of natural resources, such as fisheries and grazing lands, are being undermined by overuse.

⇒ Currently all 17 of the world's major fishing regions are harvested at or beyond their sustainable yields, and half of these are already in major decline.

- Pollution continues to worsen in many cities of the world, with 1.3 billion people still affected by dangerous air pollution.
  ⇒ During the next quarter century, industrial output and the number of automobiles in the developing world will nearly triple, which would result in major increases in pollution under current trends.

- **The Bank is an institution dedicated to poverty reduction. For this reason, not despite it, the environment matters to us.**
  - Essentially, environmental management implies the empowerment of two disenfranchised groups: the poor of today, and the generations of tomorrow.
  - We recognize the undeniable synergies between poverty reduction and environmental stewardship, and have long since dismissed the false dichotomy between economic development and environment.
  - Environmental management is not a luxury for some, it is a necessity for all, particularly the poor who are disproportionately affected by pollution and environmental degradation of the resources on which their livelihoods are based.
    ⇒ Soil loss in many African countries have been estimated to cost 3-5% of GDP in terms of lost productivity.
    ⇒ Depletion and pollution of water resources has caused the real costs of providing drinking water to quadruple in many areas.

- **The environment is not just a national and local concern --it is also a global issue affecting people in developing and developed countries alike, and linking them in the need to take immediate action.**
  - Environmental problems comprise a set of interconnections that influence economic development worldwide, and are therefore an important aspect of the broader trend to globilization.
  - Individual country experiences are mirrored and magnified globally. When we speak of environmental issues in the developed world, we're talking about issues that affect the developing world as well. And, problems in the developing world are inextricably linked to the developed world.
  - Without both local and global environmental management, economic development will be undermined, and without broad-based and equitable economic development environmental efforts will fail.

- **The global environment presents a particularly difficult challenge.**
  - While local and national environmental problems certainly have not been surmounted, some progress is being made.
  - At the national level, many countries have developed environmental strategies, are building environmental capacity, are undertaking environmental

policy reforms, and are implementing programs for environmental monitoring and enforcement, pollution prevention, park protection, and integrated river basin and coastal zone management.

- At the global level we have not done so well.
  - ⇒ Around one-seventh of the world's tropical forests have been lost in the past 25 years.
  - ⇒ Species continue to be lost at a rapid rate --current trends suggest that over the next thirty years between 2 and 25% of all tropical plants and birds could reach extinction: a rate 1,000 to 10,000 times the natural extinction rate.
  - ⇒ Carbon emissions have risen by 60 percent over the past 25 years, and under present trends carbon emissions will rise another 60-70% in the coming 25 years.

II. The Need for Partnerships

- **We face the challenges of sustainable development together, and we must work in partnership to make headway.**
  - Sustainable development --development that lasts-- implies a different kind of growth than in the past, which more fully integrates environmental, social and economic considerations.
  - Sustainable development is a difficult business --it is constrained by knowledge, institutions, resources, and people;
  - The challenges we face are not amenable to solutions from any one group;
  - This gathering is particularly important because of who is here -- representatives of national and local governments; NGOs; the private sector; financial institutions; scientists, educators and practitioners in the disciplines of the physical, natural and social sciences, economics, and law; and civil society;
  - We urgently need partnerships between the kinds of groups that are represented at this meeting;
  - These partnerships will provide a social framework within which representatives of each of these groups can act together to accomplish objectives which could not be achieved through individual actions.

III. What can we do together

- **We need to acquire and share knowledge.**
  - Knowledge -- about problems and solutions --is a major input to the development process.

- A major challenge for the community of development practitioners is to systematize the existing knowledge base, stimulate continued learning, and share widely what has already been learnt.
- Lessons of past and current efforts need to be analyzed and used to influence both the design and implementation of future programs, hence there is a continued need for policy analysis and documentation of good practices.
- Plummeting costs of modern information systems (on average 20% per year) open new opportunities for information exchange.

- **We not only need to do the "right things", we need to make sure we "do things right".**
  - We all need to adopt a more "precautionary" approach, rather than the usual deterministic and marginalist approach.
  - Nonetheless, trade-offs need to be faced by all of us, and tough decisions need to be made cooperatively.
    - For example, how are we to provide electricity to the 2 billion who lack it without degrading the air, land and water, or displacing people?
    - ⇒ All major forms of energy --hydro, fossil fuels, nuclear, renewables-- have advantages and disadvantages.
    - ⇒ Large dams offer an enormous potential source of energy for developing countries, if the major social and environmental problems --such as involuntary resettlement and inundation of natural habitats-- associated with large dams can be addressed satisfactorily,
    - ⇒ Coal is a viable alternative if associated environmental degradation can be reduced in each step of the coal production-consumption chain (mining, transport, generation, and transmission).
    - ⇒ Renewables, while environmentally benign, are currently more expensive than other options for developing countries.
    - Another important question facing us all is how to double world food production over the next three decades without destroying natural habitats?
    - ⇒ Agriculture already affects 37% of the world's land and consumes about 70% of the world's available water supplies
    - ⇒ The projected two-fold expansion of agriculture (80% from intensification and 20% from extensification), more than any other single human activity, poses major threats of worsening soil degradation, natural habitat conversion and pollution.
  - All of us here have a role to play
    - ⇒ scientists: provide leadership in identifying and reducing uncertainty regarding interlinkages and thresholds.
    - ⇒ legislators and lawyers: help to provide an appropriate enabling environment.
    - ⇒ economic planners: fully factor in environmental and social concerns into their decisions.

⇒ and environmental and social actors: better understand the power of economic incentives and the important need for economic development.

IV. What is the Bank committed to do

- Continue to play a strong role in the Global Environment Facility
- Global Water Partnership
  - ⇒ Initiated together with UNDP and Swedish Sida.
  - ⇒ Objectives are to ensure that the approximately $30 million of technical assistance in the water sector is deployed more efficiently and effectively, and conforms to the global consensus on water policy which emerged as a result of UNCED.
- World Commission on Dams
  - ⇒ Initiated with IUCN
  - ⇒ Involves a wide variety of stakeholders in the large dams debate.
  - ⇒ To address two questions:
    - * when are large dams appropriate?
    - * what are standards and procedures to be followed in planning for, constructing and operating these dams?
  - ⇒ To be chaired by Professor Dader Asmal, Minister of Water and Forestry from South Africa
  - ⇒ Will deliver its report in about two and one-half years.
- Carbon Investment Fund
  - ⇒ Progress to date on climate change has clearly been inadequate. Only 3 of the OECD countries are likely to reach their non-binding commitments under the Convention for the year 2000, and this seems to be more an accident of circumstance than a result of good policy.
  - ⇒ It is essential that at the Kyoto meeting later this year industrial countries make a strong commitment to significantly reduce greenhouse gas emissions - and that these commitments be implemented. I believe that progress would be facilitated if Joint Implementation with crediting were permitted under the Convention.
  - ⇒ Global warming affects us all, but some of us more than others. Developing countries will suffer the most damage, and their poor will be hit the hardest.
  - ⇒ I see the Bank's role in climate Change as providing every opportunity to developing countries to benefit from the huge investment the OECD must make in reducing climate change. For this purpose, the World Bank would be willing to launch a Carbon Investment Fund, should Parities to the Convention find this helpful.
- WWF-Bank Alliance
  - ⇒ Objective to work with others to help arrest the loss of forests globally.

⇒ "stretch" targets for the year 2000:
⇒ a representative network of protected areas amounting to at least 10% of each of the world's forest types.
⇒ an additional 50 million hectares of forest ecosystems under strict conservation, and an additional 200 hectares of tropical, temperate and boreal forests under entirely sustainable management with independent certification, by the year 2005.

- Knowledge Bank

ESSD5 Conference

Partnerships for Global Ecosystem Management: Science, Economics and Law

October 6, 1997
Lisner Auditorium, George Washington University
Washington, DC

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JDW TIMETABLE

JDW AGENDA

TIMETABLE

THE WORLD BANK'S FIFTH
ANNUAL CONFERENCE
ON ENVIRONMENTALLY AND SOCIALLY
SUSTAINABLE DEVELOPMENT

Mr. James D. Wolfensohn Participation

October 6, 1997

I. TIMETABLE

Morning Program

09:15	Depart the World Bank to be driven to the private, back stage door of Lisner Auditorium of George Washington University. The private entrance behind stage is on G Street between 21st and 22nd Sts. NW, or front door, 730 21st Street, N.W. Please inform as to which entrance is preferred. Row B, Section 4 has been reserved for you. or you can be escorted from the VIP room behind the stage at
09:30	At 9:30 a.m. I.S. will introduce you, and you enter either from behind the curtain or up the stairs on the left to take seat behind the podium towards stage center. This will occur following the 8 minutes tribute to Jacques Yves-Cousteau. I.S. will then invite and introduce Mrs. Cousteau and she will come up the stairs on the left from your Row B and join you.
09:30	The gold framed plaque honoring Captain Cousteau, framed and UNSIGNED by you will be on top of the podium for presentation to her. (An unframed certificate is with your office awaiting signature, and we will have the signed citation inserted and reframed.
09:35	I. Serageldin will escort her back down the stairs from the stage and you begin your address on "Global Challenges for Managing Ecosystems"
10:00	Concluding your remarks you return to Row B.

Afternoon Program

12:30	You are hosting a luncheon in DINING ROOM A for all persons on the plenary program at Lisner on October 6 and 7, approximately 30 people. (See TAB)
12:45	As you may be leaving early for your trip to NYC, you may wish to address the group during the meal. Because of the parity of protocol rank among the guests, there will not be protocol seating. You are seated in the center of the center table.
14:20	The lunch ends.

THE LISNER AUDITORIUM

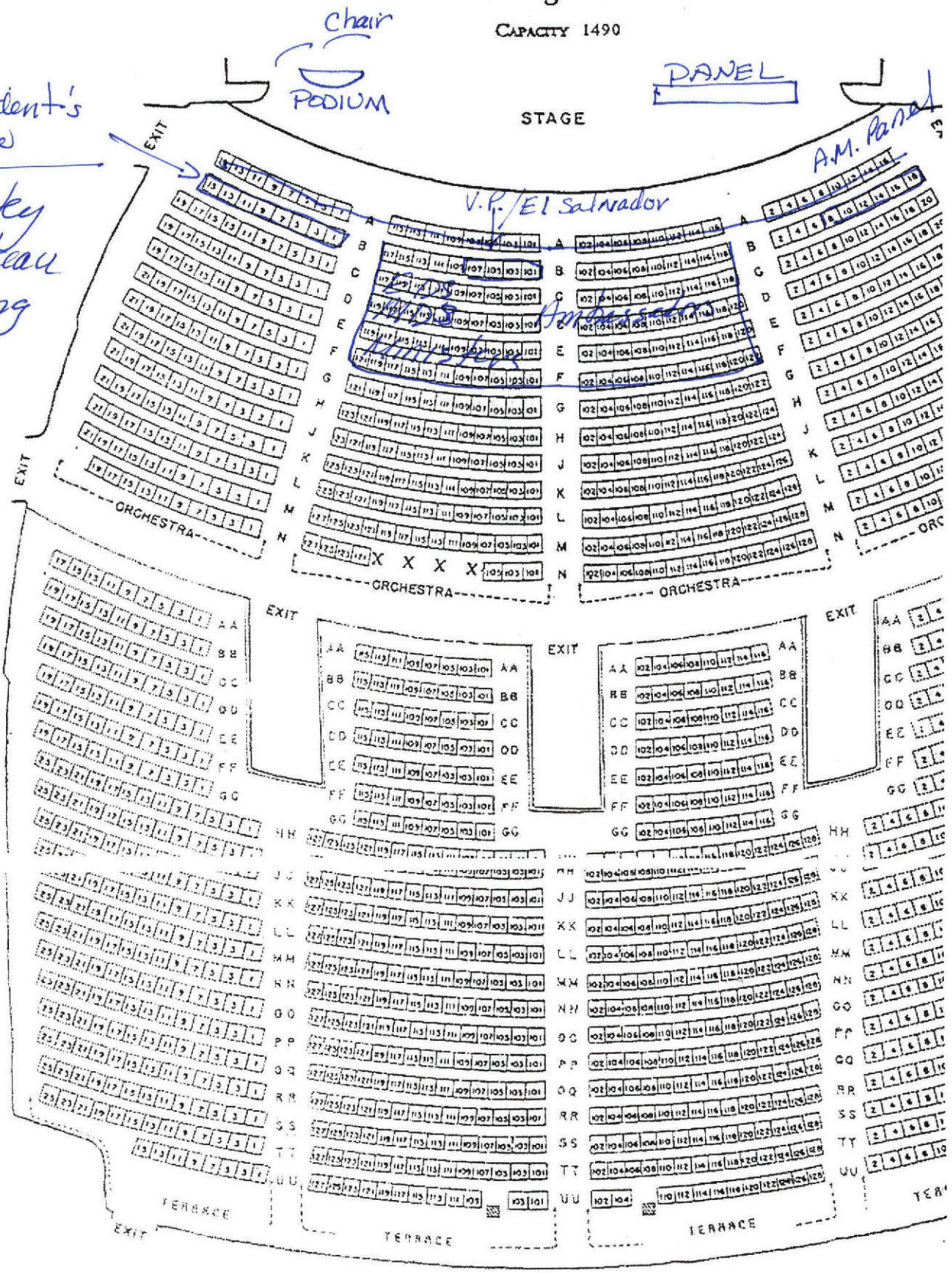
THE GEORGE WASHINGTON UNIVERSITY

TWENTY-FIRST AND H STREETS, NW.

WASHINGTON, D. C.

Seating Plan

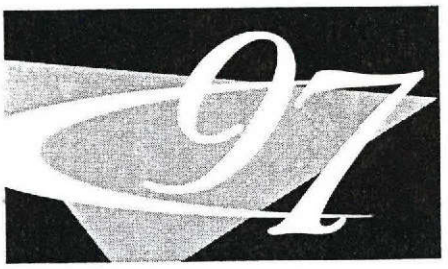
CAPACITY 1490



CAPACITY

TOTAL: 1,490 plus wheelchairs

CONFERENCE PROGRAM



FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

AND ASSOCIATED EVENTS

OCTOBER 6–11, 1997
WASHINGTON, DC

PROGRAM DESCRIPTIONS AND AGENDAS

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SCHEDULE OF EVENTS
OCTOBER 6 – 11, 1997
"ARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

REVISED

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
ESSD5 CONFERENCE						
	ALL OPEN TO THE PUBLIC					
Partnerships for Global Ecosystems Management: Science, Economics and Law Lisner Auditorium The George Washington University 730-21st Street, NW	Lisner Auditorium 9:00 – 12:30 15:00 – 17:30	Lisner Auditorium 11:00 – 13:00 14:30 – 17:30				
THEMATIC ROUNDTABLES	9:00 – 11:00					
Climate Change World Bank – 1st Floor 1818 H Street, NW	Preston Auditorium MC Building					
Biodiversity World Bank – Basement Level 600-19th Street, NW *(G Street Entrance)*	H Auditorium H-B1-201 H Building					
International Waters World Bank – JB1 Basement Level 701-18th Street, NW	J-B1-080 J Building					
Desertification and Forests IMF – 3rd Floor 700-19th Street, NW	IMF Meeting Hall A					
REGIONAL ROUNDTABLES	Coordinator					
Africa World Bank – 4th Floor 1776 G Street, NW	Jean-Roger Mercier (202) 473-5565	G-4-220 14:30 – 17:30				
Latin America and the Caribbean World Bank – 8th Floor 1850-I Street, NW	William Partridge (202) 473-8622		I-8-302 9:00 – 17:30			

SCHEDULE OF EVENTS
OCTOBER 6 – 11, 1997
"PARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
ASSOCIATED EVENTS						
ALL OPEN TO THE PUBLIC						
Washington School of Law American University 4801 Massachusetts Ave. NW	Mooers-Moreila Ceremonial Courtroom-603 20:00 – 22:00					
Ethics and Values: *A Global Perspective* World Bank 600-19th Street, NW *(G Street Entrance)*			H Auditorium H-B1-201 *All-day Session*			
Forum on Human Solidarity World Bank – 1st Floor 1818 H Street, NW			Preston Auditorium (350) 20:00 – 22:00			
Biotechnology and Biosafety World Bank – Basement Level 600-19th Street, NW *(G Street Entrance)*				H Auditorium (286) H-B1-201 *All-day Session*	H Auditorium (286) H-B1-201 *All-day Session*	
Coral Reefs in 1997 World Bank – 1st Floor 1818 H Street, NW				Preston Auditorium (350) *All-day Session*	Preston Auditorium *All-day Session* Additional Break-out Rooms: MC-13-121 MC-C1-108 MC-9-414 MC-10-414	Break-out Sessions MC-5-225 9:00 – 13:00
Indicators for Natural Resources Management: A Workshop World Bank – 1st Floor 600-19th Street, NW		H-1-200 (73) 9:00 – 13:00				
Mainstreaming Freshwater Biodiversity in Development Projects World Bank – 4th Floor 1776 G Street, NW					G-4-220 (52)	
BANK STAFF LEARNING SEMINARS						
ALL OPEN TO THE PUBLIC						
El Niño: An Impetus for Strategic Management of Droughts Sponsor: EDI			H-1-200 14:00 – 17:00			
Desertification: The Phenomenon, Contributing and Mitigating Factors Sponsor: RDV			J-1-050 9:00 – 17:00			
Geographic Information Systems for Coastal Management Sponsors: ENV/LLC			J-B1-075 14:00 – 17:00			
ALL OPEN TO THE PUBLIC						
1. GIS Workshops / 12:30 – 13:45		J-4-044 (40)	J-B1-075 (60)	J-B1-075 (60)	J-4-044 (40)	
Exhibit	MC Atrium	MC Atrium	MC Atrium	MC Atrium	MC Atrium	
ral Reefs Exhibit	MC Atrium	MC Atrium	MC Atrium	MC Atrium	MC Atrium	

SCHEDULE OF EVENTS
OCTOBER 6 – 11, 1997
ARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
CONCURRENT MEETINGS						
BY INVITATION ONLY						
Organizing Knowledge for ESSD World Bank – J Building J-B1-Basement, 11th Floor, 6th Floor and 3rd Floor 701-18th Street, NW				J Building (130) *All-day Session* J-B1-080	J Building (130) *All-day Session* Break-out Rooms: J-11-044 (43) J-6-044 (44) J-3-044 (49)	
Multinational Finance Institutions on Environmental Procedures (annual meetings) World Bank – 2nd Floor 1776 G Street, NW				G2-220 (37) *All-day Session*	G2-220 (37) *All-day Session*	
Water Diplomacy for the 21st Century …e Museum of Natural History …th Street and Constitution Ave, NW					Baird Auditorium Smithsonian *All-day Session*	
Advisory Group Meeting – Global Overlays Partnership World Bank – S Building 1750 Pennsylvania Ave., NW			S-3-060 (22) *All-day Session*			
Task Force on Higher Education and Society Consultation* World Bank – Main Complex 1818 H Street, NW MC-C1 Level 4th Floor		Dinner World Bank Dining Room K	MC-4-119 (30) *All-day Session*			
Global Ecosystems: Innovative Strategies for the 21st Century Smithsonian Castle 1000 Jefferson Drive, SW			14:00 – 16:00 Woodrow Wilson Center for Scholars			
CRLE-Earth Council "Charting the Course: Ethics and Values for a Sustainable Future" World Bank – IFC (F) Building 2121 Pennsylvania Ave., NW				IFC (F) *Plenary* 9:15 – 10:15 Break-out Rooms: 10:30 – 13:00 *To be announced at Plenary* IFC (F) *Plenary* 16:00 – 17:30		

SCHEDULE OF EVENTS
OCTOBER 6 – 11, 1997
"PARTNERSHIPS FOR GLOBAL ECOSYSTEMS MANAGEMENT: SCIENCE, ECONOMICS, AND LAW"
FIFTH ANNUAL WORLD BANK CONFERENCE ON ESSD AND CONCURRENT ACTIVITIES

EVENT TITLE	MONDAY 10/6	TUESDAY 10/7	WEDNESDAY 10/8	THURSDAY 10/9	FRIDAY 10/10	SATURDAY 10/11
BANK STAFF LEARNING SEMINARS	**BANK STAFF ONLY**					
Global Treaties and Bank Policy and Operating Directives Sponsor: LEG World Bank – 1st Floor 600-19th Street, NW			H-1-200 9:00 – 13:00 *(30 Participants maximum)*			
Country Case Studies World Bank – 2nd Floor Sponsor: LLC World Bank – J-B1 Level 701-18th Street, NW 11th Floor 11th Floor 9th Floor		J-B1-075 (60) *All-day Session* Break-out Rooms (Afternoon) J-11-044 (43) J-11-160 (20) J-9-044 (22)				

FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

PARTNERSHIPS FOR GLOBAL ECOSYSTEM MANAGEMENT: SCIENCE, ECONOMICS AND LAW

October 6–7, 1997

Beginning in 1993, each autumn the World Bank Group, under the auspices of the Vice Presidency for Environmentally and Socially Sustainable Development (ESSD), convenes an international conference on a theme related to advancing environmentally and socially sustainable development. This year's conference (ESSD5) is cosponsored with two other Bank Group entities, the Learning and Leadership Center (LLC) and the Economic Development Institute (EDI).

THE THEME

The theme for the 1997 conference is the scientific, legal, and economic requirements of global ecosystem management. Although international agreements are but one element of addressing global environmental issues such as the loss of biodiversity, climate change, desertification, ozone depletion, and water degradation, they play a crucial role. It is essential that they reflect the best available scientific knowledge, that they embody the most sensible economic analysis to advance the most cost-effective means of achieving the desired results, and that legal arrangements responding to these agreements create a level playing field and opportunities for innovation in the market place.

The conditions of our global ecosystems reflect the aggregate of local practices and national policies. These practices and policies manifest themselves locally, nationally, and regionally in many ways, including urban air pollution, the degradation of water, and the loss of agricultural productivity. Therefore, the bulk of the work required to respond to international environmental agreements must be done at the subregional, country, and local levels. In this context ethical questions of equity across societies and responsibilities between the rich and the poor nations must also be addressed.

THE CONFERENCE OBJECTIVES

1. To engage external experts with Bank managers and country staff
2. To provide a unique opportunity for major professional groups to interact on the requirements to link scientific, economic, and legal solutions for global ecosystem management at the country level
3. To promote understanding as to how best practice and innovations can be used for shared ecosystem management in sustainable development planning

THE CONFERENCE RESULTS

The results of the conference presentations and workshops and group and individual dialogues should be a better understanding of the roles and relationships among global systems regarding national sustainable development plans, national legislation, and macroeconomics; access to examples of best practice and innovative processes; contributions to the content of country development strategies; and assistance to development practitioners in better assessing the "global" connections of their work.

THE VENUE

The conference will be held October 6–7, 1997 inWashington, DC. It will open Monday, October 6, at 9 am in the Lisner Auditorium, the George Washington University, 730 21st Street, NW. Subsequent conference sessions will be held alternately at the World Bank and at Lisner Auditorium over October 6–7.

FIFTH ANNUAL
WORLD BANK CONFERENCE
ON ENVIRONMENTALLY AND SOCIALLY
SUSTAINABLE DEVELOPMENT

PARTNERSHIPS FOR GLOBAL ECOSYSTEM MANAGEMENT:
SCIENCE, ECONOMICS AND LAW

October 6–7, 1997

Cosponsored by the
Environmentally and Socially Sustainable Development Network,
the Learning and Leadership Center, and the Economic Development Institute
of the World Bank Group

PROGRAM

Monday, October 6

The George Washington University
Lisner Auditorium
730 21st Street, NW
Washington, DC

OPENING PLENARY

9:15 ***Welcoming Remarks***
Stephen J. Trachtenberg, President, The George Washington University
Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank

9:20 ***Memorial Dedication to Jacques-Yves Cousteau***

9:35 ***Global Challenges for Managing Ecosystems***
James D. Wolfensohn, President, World Bank

10:00 ***The Sovereignty and Systems of Nature and Nations: Challenges and Opportunities***

Chair
Maurice F. Strong, Under Secretary General and Executive Coordinator for United Nations Reform, and Senior Advisor to the President, World Bank

Monday, October 6, 1997 (continued)

Presenters
Peter Doherty, Nobel Laureate, Immunology
Joseph E. Stiglitz, Chief Economist, World Bank
Christopher G. Weeramantry, Vice President, International Court of Justice, The Hague

11:15 **Break**

11:30 ***The Requirements of Leadership for National Solutions***

Linking the Sciences
Robert T. Watson, Director, Environment Department, World Bank

12:30 **Lunch**

14:30 ***The Big Picture: Linking Global Environmental Issues and Human Needs***
Caio K. Koch-Weser, Managing Director, World Bank

15:00 ***The Global Treaties: Making Connections for Efficiencies, Effectiveness, and Equity***

Chair
Mostafa K. Tolba, President, International Center for Environment and Development, Cairo University

Panelists:
Yolanda Kakabadse, President, World Conservation Union Council
Huguette Labelle, President, Canadian International Development Agency
José I. Vargas, Minister of Science and Technology, Brazil
Sarwono Kusumaatmadja,* Minister, Kantor Menteri Negara Lingkungan Hidup, State Ministry of the Environment, Indonesia

16:00 ***Reflections for the Future***

Mohamed T. El-Ashry, Chief Executive Officer and Chairman, Global Environment Facility

17:00 ***Summing Up***

17:15 **Adjourn**

19:30 ***The Role of Law in the Promotion of Sustainable Development***
Reception and Panel hosted by the Washington College of Law, American University
(see following Invitation and Program)

SPECIAL EVENING SESSION

THE ROLE OF LAW IN THE PROMOTION OF SUSTAINABLE DEVELOPMENT

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Monday, October 6, 1997
19:30-21:00

Hosted by the
Washington College of Law
American University
4801 Massachusetts Avenue, NW
Washington, DC 20016

Mooers-Morella Ceremonial Courtroom (603)

(Contact: Andrea Santy 202/274-4112)

This panel will explore the contribution that law can make to the achievement of sustainable development. The panel will analyze the intertwining of the international and domestic legal systems as well as the relationships among the law of international organizations, environmental law, human rights, and economic development. The panelists will refer to the roles of government, academia, civil society in general, and the legal profession in particular.

The program will start with a reception at 19:30 at Washington College of Law in the foyer outside the Ceremonial Courtroom (603) on the sixth floor. The law school is located at 4801 Massachusetts Avenue, NW, four blocks north of the main campus of American University. Buses will be provided for participants to and from the law school. The buses will depart at 19:00 from the World Bank Main Complex, 1818 H Street, NW, and return to the same address, departing the law school at 22:15 . Please note that parking is prohibited on university area residential streets but is available in the underground parking lot after 17:00 at no charge. There are two Metro stops close to the law school: Friendship Heights and Tenleytown/AU. The law school is a short taxi ride from either stop. Or guests can take any N bus from the Friendship Heights Metro stop, or any H2 or H4 bus from the Tenleytown/AU Metro stop.

THEMATIC ROUNDTABLES

GROUND-TRUTHING GLOBAL ECOSYSTEM MANAGEMENT IN NATIONAL SUSTAINABLE DEVELOPMENT

The Challenges and Opportunities: Science, Economics and Law

PROGRAM

Tuesday, October 7

9:00

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW

CLIMATE CHANGE

Chair
Johannes F. Linn, Regional Vice President, Eastern Europe and Central Asia, World Bank

Robert T. Watson, Director, Environment Department, World Bank,
Rajendra K. Pachauri, Director, Tata Research Institute
Rudolf Dolzer, Director and Professor, Institute for International Law, Bonn University; Senior Adviser to the President of Germany
David Malin Roodman, Senior Researcher, Worldwatch Institute
Eileen Claussen, Partner, Alcalde & Fay Public Affairs
Rapporteurs: Christian Dugneau and Helmut Schreiber

World Bank
H Auditorium
Room B1-201
600 19th Street, NW

BIODIVERSITY

Chair
Jean-Michel Severino, Regional Vice President, East Asia and Pacific Region, World Bank

Delmar Alberto Blasco; Secretary General, Ramsar Convention
Peter Schei; Special Advisor to the Minister of Environment, Norway
Nicolás Mateo, General Coordinator, Biodiversity Prospecting Division, National Biodiversity Institute (INBio)
Peter H. Raven, Director, Missouri Botanical Garden
Charles Perrings, Head of the Department, Environmental Economics and Environmental Management, University of York
Bernd von Droste zu Hülshoff, Director, World Heritage Centre, UNESCO
Rapporteur: Anthony J. Whitten

Tuesday, October 7, 1997 *(continued)*

9:00

International Monetary Fund
700 19th Street, NW
Third Floor, Room A

DESERTIFICATION AND FORESTS

Chair
Jean-Louis Sarbib, Regional Vice President, Africa, World Bank

Mohamed Kassas, Professor Emeritus of Botany, University of Cairo
Reuben Olembo, Assistant Under Secretary General, United Nations, and Deputy Executive Director, United Nations Environment Programme
Ola Ullsten, Former Prime Minister, Sweden
Manuel Rodriguez-Becerra, Professor, Environmental Policy, Andes University
Steven P. Hamburg, Professor, Environmental Studies and Ecology, Brown University
Rapporteur: Jean-Roger Mercier

9:00

World Bank
J Building, B1-080
701 18th Street, NW

INTERNATIONAL WATER REGIMES

Chair
Callisto Madavo, Regional Vice President, Africa, World Bank

Mahmood Yousef Abdulraheem, Coordinator, Regional Organization for the Protection of the Marine Environment
Torkil Jonch-Clausen, Chair, Technical Advisory Committee, Global Water Partnership
Tamarii Tutangata, Director, South Pacific Environment Programme
Rapporteur: David R. Grey

11:30

All participants reconvene at Lisner Auditorium, The George Washington University, 730 21st Street, NW, for coffee break and remaining plenary sessions.

PLENARY

12:00

Presentations on Concurrent Thematic Roundtables

13:00

Lunch

Tuesday, October 7, 1997 *(continued)*

The George Washington University
Lisner Auditorium
730 21st Street, NW

CLOSING PLENARY

GLOBAL ECOSYSTEM MANAGEMENT: INNOVATIONS AND OPPORTUNITIES IN PUBLIC/PRIVATE PARTNERSHIPS

14:30	Alassane D. Ouattara, Deputy Managing Director, International Monetary Fund
14:50	George A. Olah, Nobel Laureate, Director, Loker Hydrocarbon Research Institute, University of Southern California
15:20	**Break**
15:40	***Public/Private Partnerships: Applications and Best Practice***
	Moderator Sven Sandstrom, Managing Director, World Bank
	Henry J. Hatch, President, World Engineering Council for Sustainable Development K. Madhava Sarma, Executive Secretary, Secretariat for the Vienna Convention and the Montreal Protocol Jemal-ud-din Kassum, Vice President, International Finance Corporation
16:40	***Aggregating Knowledge for Policy: Global Information Systems*** Kass Green, President, Pacific Meridian Resources
17:15	***Closing Commentary*** Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank
17:30	**Adjourn**

*To be confirmed.

REGIONAL ROUNDTABLE

PROGRAM

AFRICA

Tuesday, October 7

14:00

World Bank
4th Floor
1776 G Street, NW

Coordinator
Jean-Roger Mercier, Senior Environmental Specialist, Africa Technical, World Bank

Panel:
Reuben Olembo, Assistant Under Secretary General, United Nations, and Deputy Executive Director, United Nations Environment Programme
Mohamed Kassas, Professor Emeritus of Botany, University of Cairo
Cyril Enweze, Vice President, Operations, African Development Bank

13:00 **Regional Lunch**

14:00 ***Program***
10 minutes per panelist

Towards ESSD in SSA: Regional and Sub-Regional Approaches
Lessons Learned in Managing Resources in SSA: Connecting Local and Global Impacts

15:30 **Coffee Break**

16:00 ***Final Sessions***

17:30 **Adjourn**

REGIONAL ROUNDTABLE

PROGRAM

LATIN AMERICA AND THE CARIBBEAN

The Mesoamerican Biological Corridor

Wednesday, October 8
World Bank
I Building, Room 8-302
1850-I Street, NW

9:00 **Coordinator**

William Partridge, Lead Specialist, Environmentally and Socially Sustainable Development, Latin America and the Caribbean, World Bank

The Mesoamerican Biological Corridor

Luis Constantino or Augusta Molnar, World Bank
Jorge Cabrera, Central American Commission on Environment and Development

9:30 ***Science's Input to Conservation Development: Too Much or Too Little?***

Panel Discussion

Moderator:*

Alejandro Grajal, Wildlife Conservation Society
Gonzalo Castro, Biodiversity Specialist, World Bank
Mark Rose, Fauna & Flora International, England
Juan Bezaury, Amigos de Sian Ka'an

10:30 **Break**

11:00 ***Poverty and Social Development***

Panel Discussion

Moderator:*

Ricardo Arias, Minister of Agriculture, Honduras
Mario de Franco, Minister of Agriculture, Nicaragua
David Kaimowitz, Natural Resource Economist, Center for International Forestry Research, Indonesia

Wednesday, October 8, 1997 *(continued)*

12:30 **Lunch**

14:00 ***Indigenous Peoples, Land, and Biodiversity***

Panel Discussion

Moderator:*

Amstrong Wiggings, Indian Law Resource Center
Osvaldo Munguia, MOPAWI, Honduras
Indigenous Representative,* OSICAN, Nicaragua
Indigenous Representative,* Guatemala
Indigenous Representative,*Panama

15:30 **Break**

16:00 ***Partnerships with the Private Sector***

Panel Discussion

Moderator:*

Miguel Araujo, Ministry of the Environment, El Salvador
Cristina Figueres, First Lady of Costa Rica
Representative of Medowlake Tribal Council,* Canada

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*To be confirmed.

GEOGRAPHIC INFORMATION SYSTEMS AND REMOTE SENSING FOR SUSTAINABLE DEVELOPMENT

Exhibition, Seminar, and Workshops
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

DESCRIPTION

A series of related events highlighting Environmental Information Systems (EIS) and related Geographic Information Systems (GIS) and Remote Sensing Technologies will take place during the week of October 6-10, 1997, as part of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development. These events include an exhibition, a formal training seminar on "GIS for Coastal Management," and lunchtime workshops.

1. GIS AND REMOTE SENSING EXHIBITION

The ESSD5 Conference will host a GIS and Remote Sensing Exhibition in the main atrium of the World Bank's Main Complex (MC) Building, 1818 H Street, NW, Washington, DC. The exhibits will be open each day, Monday through Friday, and all conference participants and World Bank staff are invited to visit the displays and presentations.

As the theme of the ESSD5 Conference is "Partnerships for Global Ecosystem Management," the exhibition will involve a number of different groups and agencies representing the private sector, non-governmental organizations (NGOs), and multilateral organizations. About ten such groups will demonstrate how GIS and Remote Sensing can be applied to solve environmental management problems and support sustainable development initiatives.

The exhibitors include:

Conservation International (CI)
Environmental Systems Research Institute (ESRI)
Intergraph
Space Imaging Corporation
SPOT Image
United Nations Environment Programme (UNEP)
United Nations High Commission for Refugees (UNHCR)
World Resources Institute (WRI)
World Wildlife Fund (WWF)
The World Bank

2. GIS FOR COASTAL MANAGEMENT TRAINING SEMINAR

Participants and World Bank staff are invited to attend a formal training seminar on "Geographic Information Systems for Coastal Management." This seminar will be conducted Wednesday afternoon, October 8, 14:30–16:30 in the World Bank's J Building, 701 18th Street, NW, Room 3-044. The program will include presentations, case studies, and discussions by a panel of experts.

The panel includes:

F. A. Cross, U.S. National Oceanic and Atmospheric Administration/NMFS, Southeast Fisheries Science Center
Kass Green, Pacific Meridian Resources
Peter Mumby, Center for Tropical Coastal Management Studies, University of New Castle
Vic Klemas, Graduate College of Marine Studies, University of Delaware

Participants will learn about appropriate and low-cost information management technologies that can be applied to support environmentally sustainable development in coastal areas. World Bank staff will obtain career development credit through the Learning and Leadership Center for registering and attending this seminar.

3. WORKSHOPS

Associated with the GIS and Remote Sensing exhibition will be a series of lunchtime workshops, practical demonstrations, and thematic discussions designed to help participants understand how these technologies can be applied effectively. These sessions will focus heavily on actual examples, case studies, and the experiences of experts in the field. Participants are encouraged to interact and ask questions.

The lunch time sessions will be held in the World Bank's J Building, 701 18th Street, NW, Room 4-044 from 12:30-13:45.

The schedule includes:

Tuesday	October 7	GIS and Ecosystem Management
Wednesday	October 8	GIS in the Social Sectors
Thursday	October 9	GIS at the World Bank–Examples from Africa and Asia
Friday	October 10	GIS and the Urban Environment

EL NIÑO: AN IMPETUS FOR STRATEGIC MANAGEMENT OF DROUGHTS

A World Bank Group Learning Seminar
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
14:30 – 17:30

World Bank
H Building Room 1- 200
600 19th St. NW
Washington,DC

DESCRIPTION

Strong signals indicating the onset of an unusually forceful El Niño-induced weather pattern have already appeared in the equatorial central and eastern Pacific Ocean. If the current trends continue, the consequences are likely to be the most intense ever observed. Recent media attention has begun to focus on the impacts of this potential "climate crisis of the century."

El Niño is associated with significant variations in the global climate system, inducing heavy rainfall and flooding in some parts of the world, and extreme drought in other regions. While the full impact of the current El Niño cannot yet be accurately predicted, the threat that it poses offers an opportunity to promote the preparation of long-term water management strategies, especially in drought-prone areas.

This seminar will provide an opportunity for policymakers, World Bank staff, and influential members of society to learn how long-term planning can reduce the impact of droughts. It is sponsored by the World Bank Group Economic Development Institute's Water Policy Reform Program in collaboration with the Environment Department and the International START Secretariat.

PROGRAM

14:30 ***Introduction***

Chairman

François-Marie Patorni, Principal Specialist, Water Resources, and Coordinator, Water Policy Reform Program, Economic Development Institute, World Bank

14:40 ***Keynote Address***

Robert T. Watson, Director, Environment Department, World Bank

Wednesday, October 8, 1997 *(continued)*

15:00 ***Computer Animation and Video of El Niño Event and Consequences***
J. Michael Hall,* U.S. National Oceanic and Atmospheric Administration

15:20 ***Panel Discussion with Senior Policymakers and Experts***

- Overview of the potential socioeconomic impacts brought on by droughts, focusing on El Niño-related impacts
  Michael Glantz,* U.S. National Center for Atmospheric Research
- Implementation of long-term water management strategies at a national level*
- Case studies of the successes and failures of past and current water management strategies*
- World Bank strategy to help develop national water policies
  David Grey, Lead Specialist, Water Resources, Africa Region, World Bank

17:00 ***Plenary Discussion***

17:30 **Adjourn**

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*Speaker to be confirmed.

DESERTIFICATION: THE PHENOMENON. CONTRIBUTING AND MITIGATING FACTORS

A World Bank Group Learning Seminar
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
9:00 – 17:00

World Bank
J Building Room 1-080
701 18th Street, NW
Washington, DC

COURSE OBJECTIVE

Participants will (1) examine of the extent of desertification worldwide; (2) develop concepts linking natural and human-made factors that contribute to this phenomenon; and (3) be introduced to mitigating approaches in the areas of soils, animal husbandry, and forestry that can limit the expansion of deserts. Case studies will show what is being done to address the issues associated with desertification. The range of international programs designed to combat this phenomenon also will be discussed.

PROGRAM

9:00	***Introduction*** Alex McCalla, Director, Rural Development Department, World Bank
9:15	***Desertification: The Phenomenon*** Mohamed Kassas, Professor Emeritus of Botany, University of Cairo
10:30	**Coffee Break**
10:45	***Contributing and Mitigating Factors: Soils*** Christian Pieri, Senior Ecologist, Rural Development Department, World Bank
11:30	***Case Presentation: The Middle East*** Jitendra Srivastava, Principal Agriculturist, Rural Development Department, World Bank
12:15	**Lunch**

Wednesday, October 8, 1997 *(continued)*

13:30 ***Contributing/Mitigating Factors: Animal Management***
Harvey Blackburn, Research Scientist, U.S. Department of Agriculture

14:15 ***Case Presentation: The Loess Plateau***
Paul O'Connell, Natural Resource Economist, Rural Development Department, World Bank

15:00 **Coffee Break**

15:15 ***Contributing/Mitigating Factors: Forestry***
James Douglas, Acting Forestry Adviser, Rural Development Department, World Bank

15:45 ***International Programs to Combat Desertification***
Mohamed Kassas

16:30 ***Summation and Closing Remarks***
Alex McCalla, Presenters

17:00 **Adjourn**

ETHICS AND VALUES: A GLOBAL PERSPECTIVE

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
9:00 – 17:45

World Bank
H Auditorium, Room B1-201
600 19th Street, NW
Washington, DC

DESCRIPTION

Although one of the opening keynote presentations of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development (ESSD5) will address the moral imperatives of global ecosystem management, this Ethics and Values Associated Event more fully explores the ethical aspects of ESSD5.

Participants will explore a number of areas of inquiry. For instance, in confronting global ecosystem management, is there one common value shared by all life, implicitly and explicitly, such as the right to survive? Is this a commonly held value among all peoples? Do shared values and ethics underpin and/or compel global ecosystem management? In the first instance, in determining the capacity of a life form to survive, does the type of ecosystem serve as the shadow template for the development and assertions of social values and ethical systems? Based on the historic influence of values and ethics in the development of societies, how are nations responding to the assertion of global values and ethics in global ecosystem management? How is science influencing the development of global environmental ethics and social values? Are global ecosystem issues influencing the relationships among science, economics, foreign relations, and religions? How do present attempts to create global ecosystem management frameworks link values and ethics to national governance and to the laws of Nature?

The program is divided into four themes to explore these and other relevant questions:

Theme One	A Global Ethic: Reflections on the 21st Century
Theme Two	Cultural Values, the Global Commons, and Development
Theme Three	Global Survival: A Convergence of Faith and Science?
Theme Four	Equity and Ecosystems: Local Justice—Global Systems

ETHICS AND VALUES: A GLOBAL PERSPECTIVE

An Associated Event
of the Fifth Annual World Bank Conference
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Wednesday, October 8, 1997
9:00 – 17:45

PROGRAM

Wednesday, October 8
World Bank
H Auditorium, Room B1-201
600 19th Street, NW
Washington, DC

9:00 ***Opening Remarks***
Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank

9:15 ***"A Global Ethic: Reflections on the 21st Century"***
Benjamin Ladner, President, American University

9:40 ***"Cultural Values, the Global Commons, and Development"***
Anwar Ibrahim,* Deputy Prime Minister and Minister of Finance, Malaysia

10:00 **Break**

10:30 ***"Global Survival: A Convergence of Faith and Science?"***
Njongonkulu Winston Hugh Ndungame, Anglican Archbishop of Cape Town

George Alleyne, Director, Pan American Health Organization

Norman Myers, Consultant in environment and development, United Kingdom

11:45 ***"Equity and Ecosystems: Global Patrimony and Local Justice"***

Panel Moderator
Yolanda Kakabadse, President, The World Conservation Union Council

Wednesday, October 8 *(continued)*

Joel H. Meyers, Executive Vice President, The Rabbinical Assembly
Ashok Khosla, President, Development Alternatives
William F. Vendley, Secretary General, World Conference on Religion and Peace

13:00 **Lunch**

14:30 ***"Ethics and Biotechnology: Realities and Uncertainties"***

Panel Moderator:
Ismail Serageldin

Miguel A. Altieri , Chair, SANE General Coordinator, College of Natural Resources, University of California at Berkeley
Klaus M. Leisinger, Executive Director, Ciba-Geigy Foundation for Cooperation with Developing Countries

15:15 ***"Global Values: Requirements for a Humane Future"***

Panel Moderator
Herman Daly, Senior Resident Scholar, University of Maryland at College Park

John Hoyt, President Emeritus, The Humane Society of the United States
Azim A. Nanji, Professor and Chair, Department of Religion, University of Florida
Afaf Mahfouz, First Vice President, Conference of Non-Governmental Organizations in Consultative Status with the United Nations Economic and Social Council

16:15 **Break**

16:30 ***Audience Commentaries***

17:00 ***Reflections on the Day's Discourse***

Respondent Panel:
Bertrand Charrier, Director, Green Cross International
Bernd von Droste zu Hülshoff, Director, World Heritage Centre, UNESCO

17:30 ***Closing***
Ismail Serageldin

17:45 **Adjourn**

*To be confirmed.

YOU ARE CORDIALLY INVITED TO ATTEND
A SPECIAL ASSOCIATED EVENT:

FORUM ON HUMAN SETTLEMENTS, HUMAN SOLIDARITY, AND GLOBAL ECOSYSTEMS

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Wednesday, October 8, 1997
20:00 – 22:00

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW
Washington, DC

Sponsored by
the Human Solidarity Foundation

A CONVERSATION

Please join us for an evening discussion among a distinguished and diverse panel concerned about the issues that link the requirements of human settlements, viable communities, and healthy and diverse ecosystems.

For the first hour a panel that includes Mamphela Ramphele, Ashok Khosla, William F. Vendley, Yolanda Kakabadse, Azim Nanji, Njongonkulu Winston Hugh Ndungame, and Joel H. Meyers, moderated by Ismail Serageldin, Vice President for Environmentally and Socially Sustainable Development at the World Bank, will join in discussion.

For the second hour the discussion will engage everyone attending the Forum.

This Forum is an Associated Event of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development. Hosted by the World Bank Group, the event is sponsored by the Human Solidarity Foundation with a grant from Jane and George Russell of the Frank Russell Company, Tacoma, Washington. The coordinator is Peter Oberlander, a trustee of the Human Solidarity Foundation.

Special Evening Session

FORUM ON HUMAN SETTLEMENTS, HUMAN SOLIDARITY, AND GLOBAL ECOSYSTEMS

An Associated Event
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Wednesday, October 8, 1997
20:00 – 22:00

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW
Washington, DC

A special forum sponsored by
the Human Solidarity Foundation

PROGRAM

20:00 **Panel Moderator**
Ismail Serageldin, Vice President, Environmentally and Socially Sustainable Development, World Bank

Panelists:
Mamphela Ramphele, Vice Chancellor, University of Cape Town
Ashok Khosla , President, Development Alternatives
William F. Vendley , Secretary General, World Conference on Religion and Peace
Yolanda Kakabadse, President, The World Conservation Union Council
Azim A. Nanji, Professor and Chair, Department of Religion, University of Florida
Njongonkulu Winston Hugh Ndungame, Anglican Archbishop of Cape Town
Joel H. Meyers, Executive Vice President, The Rabbinical Assembly

21:00 ***Plenary Conversation***

21:50 ***Closing Comments***
Ismail Serageldin

22:00 **Adjourn**

BIOTECHNOLOGY AND BIOSAFETY

An Associated Event
of the Fifth World Bank Conference on
Environmentally and Socially Sustainable Development

October 9–10, 1997

World Bank
H Auditorium
H Building, Room B1-201
600-19th Street, NW
Washington, DC

Co-sponsored by
American Association for the Advancement of Science (AAAS)
Consultative Group on International Agricultural Research (CGIAR)
The Conservation Fund
Food and Agriculture Organisation of the United Nations (FAO)
International Council of Scientific Unions (ICSU)
The Smithsonian Institution
Third World Academy of Sciences (TWAS)
Union of Concerned Scientists (UCS)
United Nations Development Programme (UNDP)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Environment Programme (UNEP)
United Nations Industrial Development Organization (UNIDO)
U.S. National Academy of Sciences (NAS)
The World Bank

DESCRIPTION

Biotechnology—the technique of using living organisms, or parts of such organisms, to make or modify products, to improve plants or animals, or to develop microorganisms for specific use—and its safe use in agriculture, human health, medicine, and the environment is a topic of contemporary significance.

Biotechnology issues have been front and center of contentious debate. Opinions about biotechnology and biosafety vary on a continuum between opposites, with much discussion about advantages and disadvantages. Public concerns are manifesting themselves locally, nationally, and internationally.

This Associated Event seeks to engage a wide cross-section of stakeholders—academic, scientific, international, and national research organizations, private sector, civil society, from developed and developing countries—to discuss the issues. The event is expected to be a milestone in generating consensus that is grounded in scientific evidence and knowledgeable scientific opinion. It is especially important that the debate focus on how the promise of biotechnology can be realized for the benefit of the world's poor, the environment, and the safe management of the products and processes of biotechnology.

BIOTECHNOLOGY AND BIOSAFETY

An Associated Event
of the Fifth World Bank Conference on
Environmentally and Socially Sustainable Development

October 9–10, 1997

World Bank
H Auditorium
H Building, Room B1-201
600-19th Street, NW
Washington, DC

PROGRAM

Thursday, October 9

SESSION I: SETTING THE STAGE

Chair
Thomas E. Lovejoy, The Smithsonian Institution

9:30 ***Introductory Remarks and Stating the Problem***
Ismail Serageldin, World Bank

10:00 ***The Scientific Scene***
Werner Arber, International Council of Scientific Unions

10:30 ***The Special Case of Agricultural and Food Biotechnology***
Henry Kendall, Union of Concerned Scientists

11:00 **Coffee**

11:15 ***Discussion***

13:00 **Lunch** (on your own)

Thursday, October 9, 1997 *(continued)*

SESSION II: THE PROMISE AND THE PERILS

Chair
Roger Beachy, Scripps Research Institute

14:30 ***Overview***
Christopher Somerville, Carnegie Institution of Washington

14:45 ***The Opportunities and the Risks***
Robert Horsch, Monsanto
Simon Bright,* Zeneca
Miguel Altieri, University of California at Berkeley

15:45 **Coffee**

16:00 ***Regulatory Framework Issues***

Chair
Hamdallah Zedan, United Nations Environment Programme

Desmond Mahon, Convention of Biological Diversity
(biosafety regulations and processes)
Timothy Roberts, United Kingdom (Intellectual Property Rights,
the private sector, and the public good)

16:30 ***Discussion***

19:00 ***Reception*** World Bank, H Building Cafeteria, first floor

Friday, October 10

SESSION III: REVIEWING THE EVIDENCE

Chair
Robert T. Watson, World Bank

9:00 ***Panel 1: Are the opportunities of genetically modified organisms (GMOs) being fully exploited?***
George Tzotzos, UNIDO

Discussants
Gabrielle Persley, AusBiotech Alliance
Carlienne Brenner, Organisation for Economic Co-operation and Development

9:30 ***Panel 2: Are the risks of developing and releasing GMOs being adequately evaluated and assessed?***
Rita Colwell, Biotechnology Institute, University of Maryland

Discussants:
Val Giddings, Biotechnology Industry Organization
Po Tien, Chinese Academy of Sciences

10:00 **Discussion**

10:30 **Coffee**

SESSION IV: ROLE OF INTERNATIONAL AGRICULTURAL RESEARCH

Chair
Louise Fresco, FAO

10:45 ***The Consultative Group on International Agricultural Research***
Timothy Reeves, CIMMYT

11:00 ***The Global Forum***
Fernando Chapparo, COLCIENCIAS

11:15 ***Perspectives from National Agricultural Research Systems***
Marcio de Miranda Santos, EMBRAPA, Brazil
Magdy Madkour, AGERI, Egypt

Friday, October 10, 1997 *(continued)*

11:45 ***Discussion***

12:45 **Lunch** (on your own)

SESSION V: THE ROLE OF PUBLIC POLICY

Chair
José I. Vargas,* Minister for Science and Technology, Brazil

14:00 Vernon W. Ruttan, University of Minnesota

14:15 Michel Dron, CIRAD

14:30 George Lloyd, Zambian Grain Growers and Marketing Association

14:45 ***Discussion***

15:30 **Coffee**

SESSION VI: RECOMMENDATIONS FOR ACTION

Chair
Alex McCalla, World Bank

16:00 ***Synopsis of Sessions***
Wanda Collins, World Bank

16:15 ***Discussion***

16:45 ***Wrap-up and Next Steps***
Ismail Serageldin, World Bank

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*To be confirmed.

CONFERENCE ON CORAL REEFS 1997

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

and the
International Coral Reef Initiative

In Memory of Captain Jacques-Yves Cousteau

October 9–11, 1997

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW
Washington, DC

Co-sponsored by
ICLARM, The Smithsonian Institution, IUCN, and GBRMPA

DESCRIPTION

In cooperation with International Center for Living Aquatic Resources Management (ICLARM), the International Coral Reef Initiative (ICRI), The Smithsonian Institution, the World Conservation Union (IUCN), and the Great Barrier Reef Marine Park Authority (GBRMPA), the World Bank Group has organized the Conference on Coral Reefs as an Associated Event of the Fifth Annual World Bank Conference on Environmentally and Socially Sustainable Development, and the 1997 International Year of the Reef. The Conference and accompanying Coral Reef Exhibit are dedicated to the memory of Captain Jacques-Yves Cousteau.

The World Bank will publish the Coral Reef Conference papers, conclusions, and recommendations in a final proceedings. The exhibit is located in the Main Complex (MC) Atrium. It includes videos and interactive computer models, reef artifacts, photographs exemplifying sustainable and nonsustainable use of coral reef ecosystems, and possibly a live coral reef aquarium display.

The goal of the conference is to apprise Bank staff, other development professionals, environmental journalists, and the general public of the key issues associated with an often-overlooked part of our global ecosystem: coral reefs—their degradation, sustainable use options, and conservation. The conference will (1) provide a framework for discussion for follow-up actions in sustainable marine enterprise, consumer education and marketing, and policy and regulatory frameworks; and (2) examine regional and local strategies to combat coral reef degradation. The conference will also provide a forum to help set the agenda for the International Tropical Marine Ecosystems Management Symposium (ITMEMS), a quadrennial event to be launched in Australia in 1998.

The Coral Reef Conference will be structured around selected key coral reef issues and policy- and market-oriented solutions relevant to the work of the World Bank Group and other stakeholders. Management tools such as economic valuation, marine protected areas, coral reef monitoring, marine environmental education, and information management will also be addressed in the context of solutions to the problems identified. Keynote speakers and panelists will lead the discussion of selected topics to encompass the following:

1. Identification of the issue and the key stakeholders involved, as in reef destructive fishing/extraction, unregulated trade and tourism
2. Underlying root causes, such as policy and market failures, uneducated consumers, and inadequate enforcement
3. Available tools and mechanisms to ensure sustainable development, such as economic valuation techniques and incentives, limited entry and community-based management, certification and consumer education, and monitoring and evaluation
4. Future recommendations and actions (for Bank staff, policymakers, private entrepreneurs, non governmental organizations, reef managers, scientists, and educators).

The conference is structured around plenary and working group sessions. In the plenaries recognized scientists and practitioners from the field will introduce five major themes described below. The working groups will focus on the themes discussed in the plenary sessions and on the regional priorities identified in earlier ICRI Regional Workshops. Speakers, panelists, and invitees come from a wide range of interest groups to ensure as broad a coverage of the issues as possible. Discussion will examine the relationships between the issues/problems and their solutions paired in the following themes:

1. **Reef-Destructive Practices** (for example, dynamite and cyanide fishing, coral mining) vs. **Opportunities for Sustainable Reef-Based Mariculture** (for example, sustainable production *in situ*, community-based production) and **Low-Impact Extraction** (alternative fishing methods/product substitution)

2. **Illegal and Unsustainable Trade in Reef Products** (for example, in the live food fish, aquarium, and ornamentals trade) vs. **Certified Trade and Sustainable Bioprospecting**

3. **Marine Protected Areas** (especially when under-represented and inadequately managed) vs. **Self-Financed Marine Management Areas** (for example, through sustainable marine ecotourism, fisheries stock enhancement, and options for income-generating activities)

4. **Marine Information Management and Environmental Education** (for example, the Global Coral Reef Monitoring Network (GCRMN), Reef Check, and electronic databases such as ReefBase, FishBase, CoralBase; role of the civil society in information dissemination and public awareness)

5. **Economic Valuation of Coral Reefs** (This session will provide an overview of analytical tools for strategic decisionmaking, for example, presentation of recent application of cost-benefit analysis and valuation methods in the coral reef context).

CONFERENCE ON CORAL REEFS 1997

An Associated Event
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on Environmentally and Socially Sustainable Development

and the
International Coral Reef Initiative

In Memory of Captain Jacques-Yves Cousteau

October 9–11, 1997

World Bank
Main Complex
Preston Auditorium
1818 H Street, NW
Washington, DC

Co-sponsored by
ICLARM, The Smithsonian Institution, IUCN, and GBRMPA

PROGRAM

Thursday, October 9

OPENING SESSION

9:00 ***Welcoming Address***
Ismail Serageldin, World Bank

9:30 ***International Coral Reefs Initiative Progress to Date and Regional Initiatives***
Richard Kenchington, ICRI Secretariat

9:50 ***Overview of Current Issues and Potential Solutions***
Bernard Salvat, University of Perpignan and GCRMN Chair
Clive Wilkinson, Australian Institute of Marine Science
and GCRMN Coordinator

Thursday, October 9, 1997 *(continued)*

10:10 ***Overview of Conference Themes and Goals***
Sarwono Ksumaatmadja,* State Minister of the Environment, Indonesia

10:30 **Coffee Break**

PLENARY SESSION 1

11:00 ***Reef Destructive Practices vs. Opportunities for Sustainable Reef-Based Mariculture***
Charles Cook, The Nature Conservancy, United States
Rili Djohani, The Nature Conservancy, Indonesia
Robert Johannes, Australia
Solomon Makoloweka, Tanga Coastal Zone Programme, Tanzania
Vaughan Pratt, International Marinelife Alliance, Philippines
John Walch, Aquatic Wildlife Company, United States
Jose Zertuche, Universidad Autonoma de Baja California, Mexico

12:30 **Lunch**
Video Presentation on Sustainable Aquarium Fishing
Daniel Pelicier, Flic en Flac Company, Mauritius
Preston Auditorium

PLENARY SESSION 2

14:00 ***Partnerships for the International Coral Reefs Initiative***
Timothy Wirth, Undersecretary of State for Global Affairs, United States

14:20 ***Illegal and Unsustainable Trade in Reef Products vs. Certified Trade and Sustainable Bioprospecting***
Walter Adey, The Smithsonian Institution, United States
Patric Colin, Coral Reef Research Foundation, Palau
Andrea Gaski, World Wildlife Fund, United States
David Newman, National Cancer Institute, United States
Daniel Pelicier, Flic en Flac Company, Mauritius
Jamie Resor, World Wildlife Fund, United States
Igrev Topkov,* Convention on International Trade in Endangered Species, Switzerland

15:50 **Coffee Break**

Thursday, October 9, 1997 *(continued)*

PLENARY SESSION 3

16:20 ***Marine Protected Areas vs. Self-Financed Marine Management Areas and Sustainable Ecotourism***

Tundi Agardy, Conservation International, United States
Juan Bezaury, Amigos de Sian Ka'an, Mexico
Stephen Colwell, CORAL, United States
Peter Espeut, South Coast Conservation Foundation, Jamaica
Donald Hawkins,* Tourism Institute, The George Washington University, United States
Carolyn Hill, EcoSource, United States
Richard Kenchington, International Coral Reef Initiative, Australia
Richard Murphy, Jean-Michel Cousteau Fiji Island Resort, Fiji
Callum Roberts, University of York, United Kingdom

17:50 **Adjourn**

Friday, October 10

PLENARY SESSION 4

9:00 ***Marine Information Management and Environmental Education***

Phillip Dustan, University of Charleston, United States
Sylvia Earle, Sea Web, United States
John McManus, International Center for Living Aquatic Resources Management, Philippines
Jack Sobel, Center for Marine Conservation, United States
Clive Wilkinson, Great Coral Reef Monitoring Network, Australia

PLENARY SESSION 5

10:30 ***Economic Valuation of Coral Reefs***

Herman Cesar, World Bank, United States
Robert Costanza, University of Maryland, United States
John A. Dixon, World Bank, United States
Richard Huber, World Bank, United States

Friday, October 10, 1997 *(continued)*

12:00 — ***Terms of Reference for Thematic Working Groups***

12:15 — **Lunch**
Slide Presentation on Cyanide Fishing in the Indo-Pacific
Vaughn Pratt, International Marine Alliance, Philippines
Preston Auditorium

13:30 — ***Thematic Working Groups Parallel Sessions***

Preston Auditorium	1. Reef Destructive Practices vs. Opportunities for Sustainable Reef-Based Mariculture
MC-C1-108	2. Illegal and Unsustainable Trade in Reef Products vs. Certified Trade and Sustainable Bioprospecting
MC-13-121	3. Marine Protected Areas vs. Self-Financed Marine Management Areas and Sustainable Ecotourism
MC-9-414	4. Marine Information Management and Environmental Education
MC-10-414	5. Economic Valuation of Coral Reefs

PLENARY SESSION 6

15:00 — ***Main Conclusions and Recommendations***
Nancy Knowlton, The Smithsonian Institution/Smithsonian Tropical Research Institute

17:00 — **Reception** *World Bank, Main Complex Atrium*
Ismail Serageldin, World Bank, United States

19:00 — **Adjourn**

Saturday, October 11

PLENARY SESSION 7

9:00	*Terms of Reference for Regional Working Groups*
9:30	*Regional Working Group Parallel Sessions*
MC-5-225	A. East Asia/South Asia/South Pacific * B. Tropical Americas C. Red Sea-Gulf/Western Indian Ocean

PLENARY SESSION 8

12:00	*Reports of Regional Working Groups*
13:00	**Adjourn**

*To be confirmed.

INDICATORS FOR NATURAL RESOURCE MANAGEMENT
A WORKSHOP

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Tuesday, October 7, 1997
9:00-13:00

World Bank
H Building, Room 1-200
600 19th Street, NW
Washington, DC

DESCRIPTION

This workshop will be an opportunity for those working on and interested in the use of indicators to monitor natural resource management to meet and exchange information. The half day will be organized around two sessions, the first to present new research results and ongoing activities in indicator development, and the second to present applications in the field.

PROGRAM

9:00	***Welcome and Opening Remarks*** Robert T. Watson, Director, Environment Department, World Bank
9:15	***New Research and Ongoing Activities*** Nation-level Indicators* United Nations System* World Resources Institute*
10:45	**Coffee**
11:15	***Applications of Indicators in the Field*** International Food Policy Research Institute* International Center for Tropical Agriculture (CIAT)* World Bank* (Country applications, World Development Indicators)
12:45	***Next Steps***
13:00	**Adjourn**

*Speaker to be confirmed.

MAINSTREAMING FRESHWATER BIODIVERSITY IN DEVELOPMENT PROJECTS

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Friday, October 10, 1997
9:30 –16:00

World Bank
G Building, Room 4-220
1776 G Street, NW
Washington, DC

DESCRIPTION

Freshwater biodiversity is somewhat of a Cinderella because biodiversity initiatives have tended to focus on tropical forests and cuddly, charismatic mammals and birds of terrestrial ecosystems. Attention is at last being directed to rivers and lakes. The Fourth Conference of the Parties to the Convention on Biological Diversity will be discussing freshwater ("inland") biodiversity in May 1998 in Bratislava, and the preparatory meetings and the Global Biodiversity Forum addressed this subject in September 1997 in Montreal.

The reason for this new level of concern is the recognition that many development projects, such as those financed by the World Bank Group, impact freshwater biodiversity in major ways through flow regulation, pollution, siltation, eutrophication, and changes in vegetation cover. Yet, many of the world's poorest people depend on freshwater biodiversity for their protein needs, and healthy freshwater ecosystems provide a wide range of other benefits.

Recent reviews of environmental assessments conducted for World Bank projects have found that if and when impacts on freshwater biodiversity are investigated, the quality of the available information is sometimes below what is desired, and few effective mitigation or management provisions are incorporated into project designs. This is in part due to acute human resource shortages, the lack of importance given to the work, and the inadequate dialogue among specialists. The World Bank Group's Water Resources Management policy paper recognizes that, to assist governments in developing strategies and cost-effective mechanisms for ecologically sustainable management and the protection and restoration of water-dependent ecosystems, more rigorous attention should be given to maintaining biodiversity and protecting ecosystems in the design and implementation of water projects.

The World Bank Group has become a leader in promoting concern for the management of freshwater biodiversity. This Associated Event provides the opportunity to get an international perspective on activities leading up to the Bratislava meeting and its relevance to the Bank and other major donors. Speakers will include Delmar Blasco, Secretary General of the Ramsar Convention; representatives of major nongovernmental organizations; field practitioners; and Bank technical and operational staff.

The coordinator is Anthony J. Whitten, World Bank, tel 202/458-2253, fax 202/522-1664, email twhitten@worldbank.org

MAINSTREAMING FRESHWATER BIODIVERSITY IN DEVELOPMENT PROJECTS: THE AGENDA MATURES

An Associated Event
of the Fifth Annual World Bank Conference
on Environmentally and Socially Sustainable Development

Friday, October 10, 1997
9:30-16:00

World Bank
G Building, Room 4-220
1776 G Street, NW
Washington, DC

PROGRAM

OPENING PLENARY

9:30 ***The Path to the Present***
Anthony J. Whitten, Environment and Natural Resources, Asia Technical, World Bank

KEYNOTE ADDRESSES

9:40 ***International Initiatives***
Calestous Juma,* Convention on Biological Diversity

9:55 ***New Engineering Paradigms***
Gerry Galloway, Industrial College of the Armed Forces, National Defense University

10:10 ***New Directions for Wetlands***
Delmar Blasco, Convention on Wetlands

10:25 ***Discussion***

10:45 **Coffee**

Friday, October 10, 1997 *(continued)*

BRINGING THE CONCERNS INTO POLICY

11:00 — ***Towards a Strategy for Mainstream Freshwater Biodiversity***
Colin Rees, Environment Department, World Bank

11:15 — ***A Regional Cut***
Maritta Koch-Weser,* Environment, Rural and Socially Sustainable Development, Latin America and the Caribbean, World Bank

11:30 — ***Mainstreaming at the National Level: Capacity and Other Constraints***
Rohan Pethiyagoda, Wildlife Heritage Trust of Sri Lanka

11:45 — ***Freshwater Biodiversity in Operations and International Waters***
Al Duda,* Global Environment Facility

ASSESSMENTS AND MAPPING

12:00 — ***AQUARAP***
Jorgen Thompson, Conservation International

12:15 — ***Assessments, Latin America and the Caribbean, and North America***
David Olson, World Wildlife Fund, and Gonzalo Castro, Environment Department, World Bank

12:30 — ***Assessments***
Ian Davidson, Wetlands International

12:45 — ***Discussion***

13:00 — **Lunch**

Friday, October 10, 1997 *(continued)*

ASSESSMENTS AND TECHNIQUES

14:00 ***Assessment Protocols***
Marie Isabel Braga, Environment and Natural Resources, Asia Technical, World Bank

14:15 ***Project-Level Integration for Mainstreaming***
John Bizer, Consultant

14:30 ***Discussion***

14:45 ***Final Panel***
John Briscoe,* Global Water Unit, World Bank
Denis Mahar,* Environment, Latin America and the Caribbean, World Bank
David Hales, U.S. Agency for International Development

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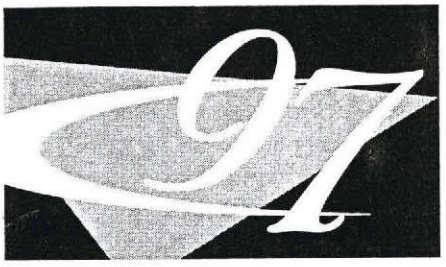
*To be confirmed.



FIFTH ANNUAL WORLD BANK CONFERENCE ON ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

OCTOBER 6–7, 1997
WASHINGTON, DC

BIOGRAPHIES OF PROGRAM PARTICIPANTS

MAHMOOD YOUSEF ABDULRAHEEM

Mahmood Yousef Abdulraheem is Technical and Administrative Coordinator of the Regional Organization for the Protection of the Marine Environment (ROPME) in Kuwait. His main areas of interest are environmental monitoring and impact assessment, water quality analysis, and waste management.

As a government official Dr. Abdulraheem has represented Kuwait at international and regional meetings, including the United Nation Environment Programme's (UNEP) Governing Council, the 1992 UN Conference on Environment and Development (UNCED), and the Arab League. He has also attended conferences of environmental conventions, including the Basel Convention on Hazardous Wastes, the Biological Diversity, and the Climate Change Conventions. Dr. Abdulraheem is the former Director and Secretary of the Environment Protection Council in Kuwait, a position to which he acceded after serving as Deputy Director. He was also seconded as the Director of the Shuaiba Industrial Authority Environment Protection Laboratory. He began his career as a chemist at the Kuwait Ministry of Health, Occupational Health Section.

Dr. Abdulraheem has a BA degree from the University of Miami in Ohio and a PhD from the University of Liverpool.

DELMAR ALBERTO BLASCO

Delmar Blasco is the Secretary General for the Ramsar Convention. Among his responsibilities are providing leadership in the creation of global strategies for the conservation and wise use of wetlands and water resources, as well as liaising with other environmental conventions, and governmental and nongovernmental organizations. Previously, Mr. Blasco was Executive Director of the International Council of Voluntary Agencies, an international association of more than 100 NGOs. Earlier, he headed

the Council, Membership and External Relations Division of the World Conservation Union (IUCN) and its Membership Services Unit. In earlier positions he was Executive Director of the Environment Liaison Centre International in Nairobi, Kenya.

Mr. Blasco studied Social Anthropology at the National University of Rosario, Argentina.

Eileen Claussen

Eileen Claussen, a partner in the public affairs firm of Alcalde & Fay, is the former U.S. Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs. She was responsible for developing and implementing U.S. policy on major international issues, including climate change, ozone depletion, chemicals, forests, biodiversity, oceans, fisheries and wildlife conservation, and sustainable development.

Prior to joining the Department of State, Ms. Claussen served for three years as a Special Assistant to the President and Senior Director for Global Environmental Affairs at the National Security Council. During this time she also served as Chairman of the United Nations Multilateral Montreal Protocol Fund. From 1987 to 1993 she was Director of Atmospheric Programs at the U.S. Environmental Protection Agency.

Ms. Claussen received an MA degree from the University of Virginia, and a BA from The George Washington University.

Peter Doherty

Peter Doherty is Chairman of the Department of Immunology at St. Jude Children's Research Hospital in Tennessee, United States. He received the Nobel Prize for Physiology or Medicine in 1996. Dr. Doherty's research interests include cell-mediated immunity, T cell recognition and repertoire, immunological tolerance, viral immunology, immunopathology, and immune memory.

Before his current position, he was Professor and Head, Department of Experimental Pathology, at the Australian University, Canberra. Before that he was Associate Professor/Professor at the Wistar Institute in Philadelphia, Pennsylvania, United States. He was also a Research Fellow at the Australian University, Canberra, a Senior Scientific Officer at the Moredun Research Institute in Edinburgh, and a Veterinary Officer in Brisbane, Australia. Dr. Doherty has also been involved in many consultant activities.

Dr. Doherty received BVSc and MVSc degrees from the University of Queensland, Australia, and a PhD from the University of Edinburgh, the United Kingdom. He has published more than 200 scientific articles, as well as numerous book articles and review articles.

Rudolf Dolzer

Rudolf Dolzer is Director and Professor at the Institute for International Law at the University of Bonn. His fields of interest include international economic law and politics and environmental law and politics. He has focused on issues of sustainable development, environmental conventions; the effort to stem climate change, biodiversity, international waters, ozone depletion, the role of international institutions; environment, trade and investment; and North/South cooperation.

Dr. Dolzer served as a member of the German Parliamentary Commission on Protection of the Atmosphere from 1990 to 1994 and of the Scientific and Technical Advisory Panel of the Global Environment Facility from 1991 to 1994, and as the Director General of the Office of the Federal Chancellor from 1992 to 1996.

Dr. Dolzer received a BS in sociology, political sciences and law at Tübingen University in Germany, and a Doctorate in Law at Heidelberg University. He also received a Doctorate in Law at Harvard University in the United States. He has published widely.

Mohamed T. El-Ashry

Mohamed El-Ashry is Chief Executive Officer and Chairman of the Global Environment Facility.

Previously, Dr. El-Ashry was the Chief Environmental Advisor to the President and Director of the Environment Department at the World Bank. Before joining the World Bank, he served as Senior Vice President at the World Resources Institute and as Director of Environmental Quality at the Tennessee Valley Authority. He has held teaching and research positions at Cairo University, Pan-American-U.A.R. Oil Company, Illinois Geological Survey, Wilkes University, and the Environmental Defense Fund. He served as Senior Environmental Advisor to the United Nations Development Program, and as Special Advisor to the Secretary General of the 1992 UN Conference on Environment and Development.

Dr. El-Ashry received his BS degree from Cairo University and his PhD in geology from the University of Illinois. He has published widely.

Kass Green

Kass Green is President and a cofounder of Pacific Meridian Resources, a natural resources consulting firm that operates from offices in California, Georgia, Oregon, and Utah. Ms. Green's background includes over twenty years' experience in natural resource policy, economics, Geographic Information Systems (GIS) analysis, and remote sensing. She is author of numerous articles on GIS and remote sensing and is co-authoring a book on the practical aspects of accuracy assessment.

Steven P. Hamburg

Steven Hamburg is Ittleson Associate Professor in Environmental Studies and Ecology and Evolutionary Biology at Brown University, United States. His research focuses on terrestrial ecosystems in North and Central America and in Taiwan.

Formerly, Dr. Hamburg was Senior Ecologist at the Environmental Defense Fund, where he remains a consultant. Before taking his position at Brown, he served as the Director of the Environmental Studies Program and, prior to that, as an Assistant/Associate Professor in the Environmental Studies Program and Department of Systematics and Biology at the University of Kansas. Dr. Hamburg has consulted to the Intergovernmental Panel on Climate Change, and is a contributor to the "Interlinkages" Assessment Report being cosponsored by the United Nations Environment Programme (UNEP), the U.S. National Aeronautics and Space Administration (NASA), and the World Bank.

Dr. Hamburg completed his undergraduate education at Vassar College in the United States and earned a PhD from Yale University.

Henry J. Hatch

Henry J. (Hank) Hatch serves as Chair of the World Engineering Partnership for Sustainable Development. Concurrently, Mr. Hatch is President and Chief Executive of Fluor Daniel Hanford, Inc., in Washington State, United States. In 1996 the company was awarded a $4.8 billion contract to clean up the U.S. Department of Energy's Hanford Site, where material was produced during World War II and the Cold War to support the U.S. nuclear weapons programs. Before joining Fluor Daniel, Mr. Hatch was Chairman of the Law Companies Group, an international engineering and environmental services company.

Mr. Hatch served for thirty-five years in the United States Army, retiring as a Lieutenant General in the position of Chief of Engineers and Commander of the U.S. Army Corps of Engineers. In this position he commanded over 40,000 members of the Corps, supervising programs in excess of $13 billion annually. While at the Corps, Mr. Hatch also sought a broader environmental engineering mission for the organization.

Mr. Hatch is a graduate of the West Point Military Academy. He received a MS degree in geodetic science from Ohio State University.

Torkil Jonch-Clausen

Torkil Jonch-Clausen is Chairman of the Technical Advisory Committee of the Global Water Partnership in Stockholm. He is also Director of the Institute for the Water Environment in Denmark, an independent research and development and consulting organization affiliated with the Danish Academy of Technical Sciences. There he is responsible for collaboration with the World Health Organization and the United Nations Environment Programme on water issues.

Previously, Dr. Clausen worked at the Ministry of Foreign Affairs for DANIDA, the Danish development agency. From 1987 to 1989 he worked as the Counselor for Development Cooperation at the Danish Embassy in Bangladesh. From 1984 to 1987 he served as Technical Advisor, with responsibilities for appraising and monitoring water supply and sanitation projects in Africa and Asia. Previously, at the Danish Hydraulic Institute he was responsible for water projects in Africa and Asia as well as in Denmark. Early in his career, he worked for the UN Food and Agriculture Organization in Somalia.

Dr. Clausen has a MS degree in civil engineering from the University of Denmark and a PhD from Colorado State University in the United States.

Yolanda Kakabadse

Yolanda Kakabadse is President of the World Conservation Union (IUCN) Council as well as Executive Vice President of the Fundación Futuro Latínoamericano. The purpose of the Fundación, located in Ecuador, is to establish policy dialogues among decisionmakers in Latin America to reach negotiated agreements among different sectors in conflict. The Fundación also trains facilitators and conflict managers in sustainable development.

Yolanda Kakabadse is also a member of the Board of Directors of the World Resources Institute and the Board of Directors of the Ford Foundation and serves on the advisory council to the Environmentally and Socially Sustainable Development vice presidency at the World Bank. She is a senior advisor to the United Nations Development Programme's Administrator and a Counselor to the President of the Global Environment Facility. Previously, Ms. Kakabadse was the Nongovernmental Organization (NGO) Liaison Officer for the 1992 Rio de Janeiro UNCED Conference and the Executive Director of Fundación Natura in Ecuador.

Mohamed Kassas

Mohamed Kassas is Professor Emeritus of Botany at the University of Cairo. He was President of the International Union for Conservation of Nature and Natural Resources (IUCN) from 1978 to 1984. He was awarded the UN Prize for the Environment.

His principal research interests during the last fifty years have been in plant ecology, especially in arid lands. He was among those who warned the world against the hazards of desertification and contributed to the UNESCO Arid Lands Research Programme, including the ecological maps of the Mediterranean Basin, from 1950 to 1960 and to the scientific preparation for the United Nations Conference on Desertification in 1977. Dr. Kassas was on the panel of Senior Advisors to the United Nations Environment Programme (UNEP) between 1973 and 1992 and was one of the scientific editors for the UNEP study, The World Environment 1972-82. He serves on the editorial boards of several international ecology and environmental sciences journals. He is a member of many organizations, including the Club of Rome.

Dr. Kassas earned BS and MS degrees from Cairo University. He earned a PhD from the University of Cambridge in England.

Jemal-ud-din Kassum

Mr. Jemal-ud-din Kassum is Vice President, Investment Operations, at the International Finance Corporation (IFC) of the World Bank Group. He has global responsibility for all new investments undertaken by the Regional and Specialist Investment Departments of the Corporation.

He joined the World Bank Group in the Young Professional Program in 1974 and transferred to the IFC in 1975. After six years' work in the Africa Region and two years as Special Assistant to the Executive Vice President, he was appointed to various management positions in the Asia Region including Division Manager, Department of Investments (1983) and Chief of IFC's Regional Mission in New Delhi (1987). Mr. Kassum was promoted as Director, Department of Investments, Asia II, in 1988.

Mr. Kassum, a Tanzanian national, studied at Harrow School, England, and holds an engineering with economics degree from Oxford University (1970) and an MBA from Harvard Business School (1974).

Caio K. Koch-Weser

Caio Koch-Weser is a Managing Director at the World Bank, with responsibility for with responsibility for the IBRD's operations, operational policies, and supervision of the vice presidencies for Europe and Central Asia, Middle East and North Africa, Latin America and the Caribbean, Human Development, and Environmentally and Socially Sustainable Development. Previously, he served as Vice President of the Middle East and North Africa Region in the Bank.

Mr. Koch-Weser's prior responsibilities at the World Bank included serving as Deputy Treasurer and Director of Treasury Operations in the Finance Complex, Director of the Western Africa Department, and Division Chief for China. Joining the Bank in 1973 in the Young Professionals Program, he first served as an economist with the Human Resources Division of the Development Policy Staff, then as a Health Projects Officer with the Central Projects Staff.

A German and Brazilian national, Caio Koch-Weser attended the Universities of Münster, Berlin, and Bonn in Germany, where he studied economics, sociology, and history. He obtained his Master's degree in economics and participated in the PhD program conducting his thesis research in Brazil. During that period he also represented the Friedrich-Ebert Foundation in Brazil, supporting labor unions, social research institutes, and nongovernmental organization projects. He was a trainee at Siemens, Inc., in Munich, São Paulo, and New York.

Sarwono Kusumaatmadja*

Huguette Labelle

Huguette Labelle is President of the Canadian International Development Agency (CIDA) and Chancellor of the University of Ottawa. She is a member of the Board of Directors of the Public Policy Forum, the International Development Research Centre, the Export Development Corporation, the International Centre for Human Rights and Democratic Development, the International Institute for Sustainable Development, and the World Health Organization's Working Group on Health and Development Policies.

Previously, Dr. Labelle served in Canada as Deputy Minister of Transport, Chairman of the Public Service Commission, Under-Secretary of State, Associate Secretary to the Cabinet, and Deputy Clerk of the Privy

Council. She held senior management positions in Indian and Northern Affairs, and Health and Welfare Canada. She has served as President and also Chairman of the Canadian Red Cross Society.

Dr. Labelle has a PhD in Education from the University of Ottawa.

Johannes F. Linn

Johannes F. Linn is Regional Vice President for Eastern Europe and Central Asia at the World Bank. Formerly, he was Vice President for Financial Policy and Resource Mobilization, in charge of overall financial policies and prudential management of the World Bank (IBRD and IDA) and in charge of mobilizing capital resources for IBRD and donor resources for IDA and the Global Environment Facility (GEF). He has worked with the Bank since 1973 as Country Economist and Economic Advisor for the East Asia Regional Staff, and as Senior Economic Advisor of the Development Economics Staff. He has served as Director in two departments: International Economics and Country Economics. He was Staff Director of the World Development Report 1988, which dealt principally with issues of public finance in development. Dr. Linn spent six months as a visiting researcher at the University of Münster in Germany.

Dr. Linn studied law at the Free University, Berlin. He received his training as an economist at Oxford University and holds a PhD from Cornell University.

Callisto Madavo

Callisto Madavo is Co-Vice President of the World Bank's Africa Region, directing Bank operations in twenty-five of Sub-Saharan Africa's forty-eight countries. He is also the Bank's ranking representative in such Africa-wide initiatives as the Special Program for Africa, which mobilizes targeted funding for countries in particular need, and the UN/World Bank-sponsored Initiative for Africa, which coordinates external assistance to the continent. He also works closely with key development institutions such as the UN Economic Commission for Africa, the African Development Bank, and the Organization for African Unity.

Previously, Dr. Madavo served as Director of the East Asia and Pacific Country Department in the World Bank. Before that he served as Director of the Eastern Africa Department, Assistant Director of the East and Southern Africa Projects Department, Division Chief for the Pakistan Programs Division of the South Asia Country Programs Department, and Division Chief for the Urban Projects Department for both East and West Africa. Callisto Madavo, who joined the World Bank in 1969 in the Young Professionals Program, began his tenure as an economist with the Bank's Urbanization and Regional Projects Division, from which he was promoted to Senior Economist.

He received his early education in Zimbabwe. He received his BA, MA, and PhD in economics from Notre Dame University.

Nicolás Mateo

Nicolas Mateo is General Coordinator, Biodiversity Prospecting Division, at the National Biodiversity Institute (INBio) in Costa Rica. Previously, he served as Director of the International Network for the Improvement of Banana and Plantain (INIBAP) in France, and as Associate Director at the International Development Research Centre (IDRC) in India and Singapore. In 1987 and 1988 Dr. Mateo was a visiting scientist at the International Rice Research Institute (IRRI) in the Philippines. Prior to that, he served as a senior program officer at the IDRC in Colombia, and as an agronomist for the Centro Agricultura Tropical de Investigación y Enseñanza (CATIE) in Honduras and in his native Costa Rica. He began his professional career in the Ministry of Agriculture in Costa Rica.

Dr. Mateo received his undergraduate education at the University of Costa Rica, where he also earned a MSc in crops and cropping systems. He received his PhD in agronomy and soils from the University of Florida, Gainesville, in the United States.

George A. Olah

George Olah is the Director of the Loker Hydrocarbon Research Institute at the University of Southern California, United States. He was awarded the Nobel Prize in Chemistry in 1994.

In previous positions at USC he was the Loker Distinguished Professor of Organic Chemistry and the Scientific Director of the Hydrocarbon Research Institute. Earlier, he was the CF Mabery Distinguished Professor of Research in Chemistry at Case-Western Reserve University and Professor and Chairman of the Department of Chemistry at Western Reserve University, both in the United States. Preceding that, he was Senior Research Scientist for Dow Chemical.

Born in Hungary, Dr. Olah received his undergraduate education and PhD at the Technical University of Budapest, where he subsequently taught for seven years, becoming head of the Organic Chemistry Department and Associate Director of the Central Research Institute of the Hungarian Academy of Sciences.

Dr. Olah has published more than 1,000 scientific papers and several university texts. He has also obtained 100 patents. Dr. Olah has received awards from many international academies, societies, and foundations, as well as many honorary degrees.

Reuben Olembo

Reuben Olembo is an Assistant Secretary General of the United Nations and Deputy Executive Director of the United Nations Environment Programme in Nairobi, Kenya, where he has been since 1975. He was Founder Director and Coordinator of the Division of Environmental Management from 1981 to 1987. He became Assistant Director for Programmes in 1987, heading all processes for the Convention for Biological Diversity and contributions for the 1992 UNCED process.

Prior to coming to the United Nations, Dr. Olembo taught at Makerere and Nairobi University, where he was the first Kenyan Professor and Head of the Department of Botany. Nationally, he served as Chairman of the Boards of Kenya National Parks, the Kenya Wildlife Fund Trustees, Kenya Marine and Research Institute, and Scientific Advisor to the Ministry of Natural Resources. He was also a Trustee of the International Institute of Tropical Agriculture (Ibadan, Nigeria), the International Board of Plant Genetic Resources (Rome, Italy), and the World Conservation Monitoring Centre (Cambridge, United Kingdom).

Dr. Olembo obtained the BSc, MSc, and PhD degrees from Purdue University, Indiana, United States. In 1994 the university conferred on him the Distinguished Agricultural Alumnus status. Professor Olembo's publications are in the disciplines of genetics, ecology, and environmental policy.

Alassane D. Ouattara

Alassane Ouattara assumed office as Deputy Managing Director of the International Monetary Fund in 1994. Mr. Ouattara was Prime Minister of the Republic of Côte d'Ivoire from November 1990 to December 1993.

Following his appointment as an economist at the IMF from 1968 to 1973, he served as Chargé de Mission at the Central Bank of West African States (BCEAO) in Paris from 1973 to 1975, when he became Special Advisor to the Governor and Director of Research. He was appointed Vice Governor of the BCEAO in 1983. He returned to the IMF as Director of the African Department in 1984 and simultaneously, from 1987, as Counsellor to the Managing Director. In 1988 Mr. Ouattara was named Governor of the BCEAO. Beginning

in 1990, he served concurrently as Chairman of the Interministerial Committee for Coordination of the Stabilization and Economic Recovery Programme of Côte d'Ivoire in Abidjan.

Mr. Ouattara earned his BSc degree in business administration from Drexel Institute of Technology in Philadelphia and his MA and PhD degrees in economics from the University of Pennsylvania. He has published widely in the political, economic, and social fields.

Mr. Ouattara was awarded the Commander of the Ordre du Lion from Sénégal, Commander of the Ordre du Mono from Togo; Grand Officier of the National Order of Côte d'Ivoire, and Honorary Governor, BCEAO.

Rajendra K. Pachauri

Rajendra Pachauri is Director of the Tata Research Institute in New Dehli, a position he has held since 1981. He is also President of the Asian Energy Institute and an Advisor to the Administrator of the UN Development Programme on Energy and Sustainable Management of Natural Resources. His fields of interest include energy, development, environment, and climate change.

Dr. Pachauri sits on the Climate Institute Advisory Board as well as on the Board of the International Solar Energy Society. In 1988 he was President of the International Association for Energy Economics and served as Chairman of that organization in 1989 and 1990. In India he serves on a number of committees in the areas of power and energy, and petroleum and natural gas.

Rajendra Pachauri earned a PhD in industrial engineering, as well as a PhD in economics, from North Carolina State University. He is a graduate of the Institution of Mechanical Engineers and the Institution of Production Engineers in London. He has written or edited twenty books and published numerous papers and articles. He writes regularly for a number of newspapers in India and is affiliated with many professional journals.

Charles Perrings

Charles Perrings is the Head of the Department of Environmental Economics and Environmental Management at the University of York in the United Kingdom. Previously, he was Director of the Biodiversity Programme at the Beijer Institute in Stockholm, Sweden; Professor of Economics at the University of California at Riverside in the United States; Head of the Economics Department at the University of Botswana; Lecturer and Professor at the University of Auckland in New Zealand; and Lecturer at the National University of Lesotho. He has also consulted with many international government and nongovernmental organizations.

Dr. Perrings earned his undergraduate degree and his PhD from the University of London. He has written a number of studies ranging from the economics of ecological resources to sustainable development, poverty alleviation, biological diversity, biodiversity conservation, and the interdependence of economics and the environment.

Peter H. Raven

Peter Raven is Director of the Missouri Botanical Garden and Engelmann Professor of Botany at Washington University in St. Louis, Missouri. His professional emphases are sustainable agriculture and forestry in the tropics and the preservation of plants and animals throughout the world.

In the United States Dr. Raven is Home Secretary of the National Academy of Sciences, Chairman of the Report Review Committee of the National Research Council, and a member of the President's Committee of Advisors on Science and Technology. He is a member of the Committee on Research and Exploration of the National Geographic Society, Co-chair of the Editorial Committee of the Flora of China Project, and Chairman of the U.S. Civilian Research and Development Foundation for the Independent States of the Former Soviet Union.

Before coming to St. Louis in 1971, Dr. Raven was a member of the Department of Biological Sciences at Stanford University. He is past president or past chairman of a number of scientific groups or institutes.

Dr. Raven received his PhD at the University of California at Los Angeles. He did his undergraduate work at the University of California at Berkeley. He is the author of more than 450 scientific papers and eighteen books, including textbooks in biology and botany. He is also the recipient of many international awards.

Manuel Rodriguez-Becerra

Manuel Rodriguez-Becerra is Professor of Environmental Policy at the Andes University in Bogotá and a private consultant on environmental affairs to both national and international organizations.

Mr. Rodriguez-Becerra served as an advisor to the Colombian Ministry of the Environment (1995-97) for the Intergovernmental Panel on Forests. He also contributed to the Sustainable Forests Management Action Plan for the Risaralda West Region, a 90,000-hectare forest inhabited by indigenous and mestizo peoples. He was Co-chair of the Intergovernmental Panel on Forests of the United Nations Commission on Sustainable Development, and he is a contributor to the "Interlinkages" Assessment Report being cosponsored by the United Nations Environment Programme (UNEP), the U.S. National Aeronautics and Space Administration (NASA), and the World Bank.

Mr. Rodriguez-Becerra received his undergraduate training in industrial engineering at Andes University and a Master of Philosophy degree in management from Oxford. He is the author of numerous articles and books on environmental management.

David Malin Roodman

David Roodman is Senior Researcher at the Worldwatch Institute. He specializes in economics and the political economy of environmental problems, in particular, energy policy, the human and ecological impact of construction, and the effects that taxes and subsidy policies have on the environment. He writes regularly for Worldwatch and for selected newspapers.

Before joining the Worldwatch Institute, Mr. Roodman worked at the Institute for Human Development in Philadelphia and the Energy Study Institute in Washington, D.C. Mr. Roodman received a BA in pure mathematics from Harvard University. He also studied at the University of Cambridge, where his interests shifted to the relationship between the economy and the environment.

Sven Sandström

Sven Sandström is Managing Director for Corporate Planning and Resource Management at the World Bank. In this position he is also responsible for resource mobilization for the International Development Association (IDA) and the Bank's participation in the debt initiative for the highly indebted poor countries (HIPC). Sven Sanström is also a member of the Executive Committee, which guides the Bank Group's strategic direction. Before his current appointment Sven Sandström served as Director of the Office of the President. Earlier, he was Director of the Bank's Southern Africa Department and had held a series of management positions with increasing responsibility, particularly in Africa and Asia. He began his career in the Bank in the early 1970s as a project analyst in the transport, water, and sanitation, and urban development sectors.

Dr. Sandström graduated from the Royal Institute of Technology in Stockholm (DrSc in civil engineering), the Stockholm School of Economics (MBA) and University of Stockholm (BA). He worked as a consultant in Sweden from 1966 to 1968 and as a research associate at the Massachusetts Institute of Technology and Harvard Business School in the United States from 1969 to 1972, when he joined the World Bank.

Jean-Louis Sarbib

Jean-Louis Sarbib has been Co-Vice President for the Africa Region of the World Bank since April 1996. Previously, he served as Director for the Western Africa Department, Division Chief for Country Operations in the Sahelian Department, and Deputy Division Chief in the Industry Department's Mining and Non-Ferrous Metals Division. Before that, he served as Senior Loan Officer in the East and South Africa Country programs Department II. Earlier, he was Senior Planning Advisory Officer. Mr. Sarbib began his career at the Bank in 1980 as a Planning Advisory Officer assigned to the East Africa Region.

Prior to joining the Bank, Mr. Sarbib worked in the French government and taught at the University of Pennsylvania and at the University of North Carolina at Chapel Hill.

Mr. Sarbib holds an Engineering degree from the Ecole Nationale Supérieure des Mines de Paris in France. He did his post-graduate studies in city and regional planning at the University of Pennsylvania.

K. Madhava Sarma

K. Madhava Sarma is Executive Secretary of the Secretariat for the Vienna Convention and the Montreal Protocol, a position he has held in the United Nations Environment Programme for six years.

Madhava Sarma is also a member of the Indian Administrative Service. He has held senior positions at the state level as a general administrator with responsibilities for water supply, irrigation, and power. He served in the national government for five years in the Ministry of Environment and Forests. As an Additional Secretary at the Ministry of the Environment and Forests, he participated in international meetings on global environmental issues and helped clarify the role of developing countries in the preservation of the global environment.

Peter Schei

Peter Schei is the Special Advisor to the Minister of Environment in Norway. He has extensive experience in nature conservation and the sustainable use of biodiversity, as well as in the integration of biodiversity into national and sector plans. Mr. Schei also has extensive experience in the negotiation of environmental treaties and their implementation, both on a national and international level.

Most recently, Mr. Schei served as the Chairman of the Subsidiary Body on Scientific, Technical, and Technological Advice for the Convention on Biological Diversity. In 1993 he was the Co-Chair of UNEP Panel 1 on the scientific and technical basis for implementing the Convention. In Norway for many years he has been the head of the national delegation to the Convention on International Trade in Endangered Species. More recently, he has held the same position with respect to the Convention on Biological Diversity.

Mr. Schei's areas of interest include the study of terrestrial ecosystems, bird ecology, and protected areas. He has gained field experience in many regions of the world including Africa, Central and South America, parts of South and South East Asia, Eastern Australia, and Western and Eastern Europe.

Mr. Schei earned a MSc in zoology at the University of Oslo. He has received many national awards for his work in biological conservation.

Ismail Serageldin

Ismail Serageldin is Vice President for Environmentally and Socially Sustainable Development (ESSD) at the World Bank, Chairman of the Consultative Group on International Agricultural Research (CGIAR), Chairman of the Consultative Group to Assist the Poorest (CGAP), and Chairman of the Global Water Partnership (GWP). He has published widely on economic development, human resource issues, and the environment. He has been awarded three honorary doctorates: from the University of Bucharest in sociology, and from the University of

Melbourne and the Indian agricultural research Institute in Agricultural Science. His most recent books are *Sustainability and the Wealth of Nations: First Steps in an Ongoing Journey (1996) and Nurturing Development: Aid and Cooperation in Today's Changing World* (1995).

Ismail Serageldin earned his BSc degree at Cairo University and his Master's and PhD degrees at Harvard University.

Jean-Michel Severino

Jean-Michel Severino is Vice President of the East Asia and Pacific Region at the World Bank. He joined the Bank in 1996 as Director of Country Department II in the Europe and Central Asia Region, responsible for Bosnia.

Before joining the Bank, Mr. Severino served as Director of Development in the French Ministry of Cooperation and Development, reporting directly to the Minister. Career posts included Economic and Financial Advisor to the Cabinet, Chief of Finance Studies and Foreign Relations at the Ministry of Development and Cooperation, and Financial Auditor at the Ministry of Economy and Finance.

Born in Abidjan, Côte d'Ivoire, Mr. Severino graduated from the Ecole Supérieure de Commerce and Institut d'études politiques in Paris. He completed his Master's degrees in law and economics at the University of Paris and graduated from the National School of Administration (ENA).

Joseph E. Stiglitz

Joseph Stiglitz is Senior Vice President, Development Economics, and the Chief Economist at the World Bank. Previously, he was Expert Economist at the U.S. Council of Economic Advisors, which advises the President on economic issues. Preceding that, he was Professor of Economics at Stanford University and Senior Fellow at the Hoover Institution at Stanford. Joseph Stiglitz has taught at Princeton University; Oxford University; Yale University; University College, Nairobi, Kenya; the University of Canterbury, Christchurch, New Zealand; and the Massachusetts Institute of Technology (MIT).

Dr. Stiglitz has consulted to many organizations, including the Ford Foundation (Energy Policy Study), the U.S. Department of the Interior (Offshore Oil Leasing Programs), the Federal Energy Administration (Intertemporal Biases in Market Allocations of Natural Resources), the Electrical Power Research Institute, and the Inter-American Development Bank.

He completed his undergraduate training at Amherst College in Massachusetts and his PhD at MIT.

Maurice F. Strong

Maurice Strong, P.C., is Under Secretary General and Executive Coordinator for United Nations Reform at the UN and Senior Advisor to the President of the World Bank. He holds numerous other positions in both the private and public sectors, including Chairman and founder of the Earth Council, Chairman of the World Resources Institute, and Co-Chair with Mikhail Gorbachev of the Earth Charter Commission.

In 1992 Mr. Strong served as the Secretary General of the United Nations Conference on Environment and Development (UNCED, or the Rio Earth Summit), and was Under Secretary General of the United Nations for two years previously. Earlier, he served as Executive Coordinator of the United Nations Office for Emergency Operations in Africa, as the first Executive Director of the United Nations Environment Programme (UNEP) in Nairobi, and as Secretary of the United Nations Conference on the Human Environment. Mr. Strong has held numerous prominent positions in Canada, including Chairman and Chief Executive Officer of Ontario Hydro; and President, Chairman, and CEO of Petro Canada. He was the first President of the Canadian International Development Agency (CIDA).

Maurice Strong's global leadership on environment and social policy has been acknowledged by the award of many personal and professional honors. He is a member of the Queen's Privy Council of Canada and has received honorary doctorates from forty universities.

Mostafa K. Tolba

Mostafa Tolba is a former Under Secretary General to the United Nations, where he was Executive Director of the United Nations Environment Programme (UNEP) from 1973 to 1992, elected to four terms.

Currently, Dr. Tolba is President of the International Center for Environment and Development and of the Environmental, Engineering and Geological Consulting Office at Cairo University. Before becoming Director of UNEP, Dr. Tolba served for two years as Deputy Director. Previously, he was Alternate Member of the Executive Board for UNESCO. In Egypt Dr. Tolba was Minister of Youth for the Egyptian Academy of Scientific Research and Technology and served in the Egyptian Government as Under Secretary of State in the Ministry of Education. He also served as Cultural Counselor and Director at the Egyptian Education Bureau in the Egyptian Embassy in the United States. Before that he was Assistant Secretary and Secretary General at the Supreme Science Council. Dr. Tolba began his career as a professor at Cairo University. He also taught at Baghdad University.

Dr. Tolba received his undergraduate education in botany from the University of Cairo. He earned his PhD in microbiology from Imperial College in London. He has published nearly 100 scientific papers, and hundreds of articles as well as seven books on international environmental issues. He is the recipient of numerous awards and honors.

Tamarii Tutangata

Tamarii Tutangata is Director of the South Pacific Regional Environment Program. Previously, he served for ten years in a variety of positions with the Government of the Cook Islands, including senior consultant to the Prime Minister and the Ministry of Planning and Economic Development, Chief Executive Officer to the Prime Minister, and Secretary of the Prime Minister's Department. He also served as Secretary to the Ministry of Cultural Development and Chairman of the National Conservation Advisory Council.

Previous to these positions, he worked at the South Pacific Commission in New Caledonia, where he was promoted to Director of Programmes.

Tamarii Tutangata received his college and university education in New Zealand.

Ola Ullsten

Ola Ullsten is Co-Chair of the World Commission on Forests and Sustainable Development. Since 1983 he has been a member of the InterAction Council of former Heads of State and Government (IAC).

Ola Ullsten is a former Prime Minister of Sweden. Other positions he has held in Swedish government and politics include Deputy Prime Minister, Minister of Foreign Affairs, Ambassador to Italy, Ambassador to Canada, Leader of the Liberal Party, Minister for International Development Cooperation, and Member of Parliament.

In the international arena Ola Ullsten is a past member of the "Eminent Advisor Group" to the Secretary General of UNCED, Chairman of the UN Food and Agriculture Organization Independent Review Team of Tropical Forestry Action Plan, Co-Chair of the European Forum for Forest Protection, and Chairman of the IAC High Level Group of Experts on Transfer of Resources to Developing Countries (1984) and on "Global Deforestation Trends."

José I. Vargas

José Israel Vargas is Minister of Science and Technology in Brazil. His fields of specialization include the chemical consequences of nuclear transformation, solid state chemistry and hyperfine interactions in solids as well as high temperature superconductors, and modeling techniques of science and technology diffusion.

Among the many international organizations for which Dr. Vargas has worked are the International Atomic Energy Agency (IAEA), UNESCO, and the UN Committee on Science and Technology for Development. He also worked for the Commissariat a l'Energie Atomique in France. In Brazil he has worked for the National Research Council and the Presidential National Energy Commission. He has also been State Secretary for Science and Technology, Minas Gerais, and the Secretary for Industrial Technology, Ministry of Industry and Trade. Dr. Vargas has been a professor at several universities and institutes.

He obtained his undergraduate degree in chemistry from the University of Minas Gerais in Brazil and his PhD from Cambridge University in England.

Bernd von Droste zu Hülshoff

Bernd von Droste is the Director of the UNESCO World Heritage Centre and Secretary of the World Heritage Convention. Previously at UNESCO, he was Director of the Division of Ecological Sciences, Executive Secretary of the Man and the Biosphere Programme, and Publishing Director of the quarterly journal, Nature and Resources. Dr. von Droste began his career at UNESCO as a Programme Specialist in various fields of ecology. Before working for UNESCO, Dr. Droste had been a forester, subsequently returning to school to earn a PhD in forest ecology studies from the University of Munich, where was appointed Associate Professor. Dr. von Droste is the author of over 170 scientific papers and several books, primarily in the fields of heritage conservation, ecology, forestry, hydrology, and cultural landscapes.

Robert T. Watson

Robert Watson is Director of the Environment Department and Head of the Environment Sector Board at the World Bank. He joined the Bank in 1996 as the institution's Senior Scientific Advisor, sitting in the Environment Department. Previously, he served as Associate Director for Environment in the Office of Science and Technology Policy in the Executive Office of the U.S. President. Prior to joining the Clinton White House, Dr. Watson was Director of the Science Division and Chief Scientist for the Office of Mission to Planet Earth at the National Aeronautics and Space Administration (NASA).

Dr. Watson has played a key role in the negotiation of global environment conventions and the evolution of the Global Environment Facility (GEF). From 1991 to 1994 he served as Chairman of the GEF's Scientific and Technical Advisory Panel. He is Chair or Co-Chair of a number of international scientific assessments, including Working Group II of the Intergovernmental Panel on Climate Change (IPCC), the United Nations Environment Programme/World Meteorological Organization (UNEP-WMO), International Scientific Assessment of Ozone, and UNEP's Global Biodiversity Assessment. He was recently elected the next Chair of the IPCC.

Dr. Watson received his PhD in chemistry from London University in 1973. He has received numerous awards and prizes.

Christopher G. Weeramantry

Christopher Weeramantry is Vice President of the International Court of Justice in The Hague. He has been a member of the Court since 1991.

Prior to joining the Court, Judge Weeramantry participated in a number of international initiatives concerning human rights. He was the editor of a two-volume United Nations study on science, technology and human rights. He was a Panelist on the Scientists Committee on Problems of the Environment/Environmental Consequences of Nuclear War. He also served as Vice Chairman of the United Nations Centre against Apartheid. Judge Weeramantry began his career in Sri Lanka, where he served as Justice of the Supreme Court. Before that, he was Commissioner of Assize, Supreme Court, and before that Advocate, Supreme Court.

Judge Weeramantry has taught at numerous universities throughout the world, including Monash University, Melbourne, Australia; University of Hong Kong; University of Tokyo; University of Papua New Guinea; and University of Florida.

Judge Weeramantry received his undergraduate and legal graduate training at the University of London. He has published widely, including a long report on environmental damage to the island state of Nauru.

James D. Wolfensohn

James Wolfensohn is the ninth President of the World Bank Group. In addition to his career as an investment banker he has a long record of parallel involvement in development issues and the global environment. Since he assumed the Bank presidency, he has traveled widely to Africa, the Caribbean, Central Asia, East Asia, Eastern Europe, Latin America, and the Middle East. He has taken the initiative to form new strategic partnerships between the Bank Group and the governments it serves, the private sector, civil society, regional development banks, and the United Nations. To improve the Bank's effectiveness in fighting poverty and to meet the needs of a rapidly changing global economy Mr. Wolfensohn has launched a major reform program in the Bank, the Strategic Compact. Among the many other initiatives he has pursued at the Bank are efforts to mainstream environmental issues in all aspects of Bank activity.

Before joining the Bank, Mr. Wolfensohn was President and Chief Executive Officer of James Wolfensohn, Inc. (in which he relinquished all interests). Prior to that, he was head of the investment banking department for Salomon Brothers. He was also Chairman of the Board of Trustees of the John F. Kennedy Center for the Performing Arts, Chairman of Carnegie Hall, President of the International Federation of Multiple Sclerosis Societies, Director of the Business Council for Sustainable Development, both Chairman and board member of the Finance Committee of the Rockefeller Foundation, and a member of the Middle East Economic Strategy Group.

Mr. Wolfensohn holds a BA and LLB from the University of Sydney and an MBA from the Harvard Graduate School of Business. He has received numerous awards and honors, including Honorary Knighthood by Queen Elizabeth II for his contribution to the arts, and in particular for artistic exchange between the United States and Great Britain.

Mr. Wolfensohn is Chairman of the Institute for Advanced Study at Princeton University, an Honorary Trustee of the Brookings Institution, and a member of the Council on Foreign Relations. He is also a Fellow of the American Academy of Arts and Sciences and a Fellow of the American Philosophical Society.

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*Biography not available at time of printing.

PRESENTATION TO
MRS. FRANCINE COUSTEAU

PRESENTATION TO MRS. FRANCINE COUSTEAU
BY
ON THE OCCASION OF
HONORING JACQUES-YVES COUSTEAU
AT THE
FIFTH ANNUAL WORLD BANK CONFERENCE ON
ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT
October 6, 1997

The legacy of Jacques-Yves Cousteau is powerful and unique. He was the world's tutor, dedicated to engaging us, so that we might rejoice in the diversity of life and better understand the requirements of our planet to support life.

He took us with him under the seas, that we might better know their wonder, and see for ourselves how we have abused their bounty and shorelines.

He challenged us to look beyond ourselves, to the sky and the universe, so that, struck with awe, we would consider our obligations to one another, to other species and to our Earth's fragile atmosphere.

He helped us meet our brothers and sisters in remote forests, and on the shores of threatened lakes and rivers. He said that to ignore the wisdom of these ancient people is to deny hope for a humane future. He encouraged us to rejoice in our cultural diversity as much as to value our planets biodiversity.

He counted our ever-growing numbers. Deeply concerned, he spoke of our potential of overwhelming our own sustainability, and that of other species.

He challenged us to assume our resposibilities to the rights of future generations. To declare our commitment to protect their interests.

He was optimistic. His hope was in the power of the new generation, children and young people; that they will serve as fresh eyes and uncompromising voices for our obligations to one another, and this planet's future.

There is much we can do to honor this noble heart. His poetry and graceful images remain with us. We must honor his work in our work, and we in the World Bank, who have benfited from his wise counsel in these last five years, will work with the Cousteau Society and so many others to pursue his dream of bettter tomorrows.

James D. Wolfensohn
President
The World Bank

SPEECH

SPEECH
BACKGROUND NOTES TO CAROLINE ANSTEY

Talking Points for
Mr. Wolfensohn's Opening Address to
The Fifth Annual World Bank Conference on
Environmentally and Socially Sustainable Development

I. The Global Challenge

- **Achievement of sustained and equitable development remains the greatest challenge facing human kind. Despite substantial development efforts, poverty is not diminishing, and the gap between rich and poor is not decreasing.**
  - 1.3 billion people (23% of the world's population) still live on the equivalent of less than $1 per day, 70% of these are women;
  - 1.3 billion live without clean water, 2 billion are without adequate sanitation, and 2 billion without electricity;
  - 8 million die each year from easily preventable diseases;
  - 800 million are malnourished;
  - 130 million children are not enrolled in primary school (104 million of these are girls).
  - Less than a quarter of the world's people consume three-quarters of its raw materials;

- **Redressing these inequities is not easy, and will only become more challenging in future.**
  - Over the next generation the world's population will increase by 3 billion, and 95% of the increase will add significantly to the 4.7 billion people who currently live in the developing world.
  - Despite our best efforts, delivery of basic needs will be further challenged.
  - Over the next 35 years, agriculture production in developing countries will need to nearly double to meet the projected food needs of growing populations and the increased demands expected to arise from modest income growth.
  - Global energy use is projected to double within the next three decades, with developing countries' demand growing to be twice that of the OECD.
  - Water supply and sanitation services will need to be expanded immensely, and providing users with the services that they want and are willing to pay for will require a much greater role for communities and the private sector.

- **These challenges are even tougher when environmental issues are factored in.**
  - Productivity of natural resources, such as fisheries and grazing lands, are being undermined by overuse.
    - ⇒ Currently all 17 of the world's major fishing regions are harvested at or beyond their sustainable yields, and half of these are already in major decline.

- Pollution continues to worsen in many cities of the world, with 1.3 billion people still affected by dangerous air pollution.
  - ⇒ During the next quarter century, industrial output and the number of automobiles in the developing world will nearly triple, which would result in major increases in pollution under current trends.

- **The Bank is an institution dedicated to poverty reduction. For this reason, <u>not despite it</u>, the environment matters to us.**
  - Essentially, environmental management implies the empowerment of two disenfranchised groups: the poor of today, and the generations of tomorrow.
  - We recognize the undeniable synergies between poverty reduction and environmental stewardship, and have long since dismissed the false dichotomy between economic development and environment.
  - Environmental management is not a luxury for some, it is a necessity for all, particularly the poor who are disproportionately affected by pollution and environmental degradation of the resources on which their livelihoods are based.
    - ⇒ Soil loss in many African countries have been estimated to cost 3-5% of GDP in terms of lost productivity.
    - ⇒ Depletion and pollution of water resources has caused the real costs of providing drinking water to quadruple in many areas.

- **The environment is not just a <u>national</u> and <u>local</u> concern --it is also a <u>global</u> issue affecting people in developing and developed countries alike, and linking them in the need to take immediate action.**
  - Environmental problems comprise a set of interconnections that influence economic development worldwide, and are therefore an important aspect of the broader trend to globilization.
  - Individual country experiences are mirrored and magnified globally. When we speak of environmental issues in the developed world, we're talking about issues that affect the developing world as well. And, problems in the developing world are inextricably linked to the developed world.
  - Without both local and global environmental management, economic development will be undermined, and without broad-based and equitable economic development environmental efforts will fail.

- **The global environment presents a particularly difficult challenge.**
  - While local and national environmental problems certainly have not been surmounted, some progress is being made.
  - At the national level, many countries have developed environmental strategies, are building environmental capacity, are undertaking environmental policy reforms, and are implementing programs for environmental monitoring and enforcement, pollution prevention, park protection, and integrated river basin and coastal zone management.

- At the global level we have not done so well.
  - ⇒ Around one-seventh of the world's tropical forests have been lost in the past 25 years.
  - ⇒ Species continue to be lost at a rapid rate --current trends suggest that over the next thirty years between 2 and 25% of all tropical plants and birds could reach extinction: a rate 1,000 to 10,000 times the natural extinction rate.
  - ⇒ Carbon emissions have risen by 60 percent over the past 25 years, and under present trends carbon emissions will rise another 60-70% in the coming 25 years.

II. The Need for Partnerships

- **We face the challenges of sustainable development together, and we must work in partnership to make headway.**
  - Sustainable development --development that lasts-- implies a different kind of growth than in the past. which more fully integrates environmental, social and economic considerations.
  - Sustainable development is a difficult business --it is constrained by knowledge, institutions, resources, and people;
  - The challenges we face are not amenable to solutions from any one group;
  - This gathering is particularly important because of who is here -- representatives of national and local governments; NGOs; the private sector; financial institutions; scientists, educators and practitioners in the disciplines of the physical, natural and social sciences, economics, and law; and civil society;
  - We urgently need partnerships between the kinds of groups that are represented at this meeting;
  - These partnerships will provide a social framework within which representatives of each of these groups can act together to accomplish objectives which could not be achieved through individual actions.

III. What can we do together

- **We need to acquire and share knowledge.**
  - Knowledge -- about problems and solutions --is a major input to the development process.
  - A major challenge for the community of development practitioners is to systematize the existing knowledge base, stimulate continued learning, and share widely what has already been learnt.
  - Lessons of past and current efforts need to be analyzed and used to influence both the design and implementation of future programs, hence there is a continued need for policy analysis and documentation of good practices.

- Plummeting costs of modern information systems (on average 20% per year) open new opportunities for information exchange.

- **We not only need to do the "right things", we need to make sure we "do things right".**
  - We all need to adopt a more "precautionary" approach, rather than the usual deterministic and marginalist approach.
  - Nonetheless, trade-offs need to be faced by all of us, and tough decisions need to be made cooperatively.
    - For example, how are we to provide electricity to the 2 billion who lack it without degrading the air, land and water, or displacing people?
    - ⇒ All major forms of energy --hydro, fossil fuels, nuclear, renewables-- have advantages and disadvantages.
    - ⇒ Large dams offer an enormous potential source of energy for developing countries, if the major social and environmental problems --such as involuntary resettlement and inundation of natural habitats-- associated with large dams can be addressed satisfactorily.
    - ⇒ Coal is a viable alternative if associated environmental degradation can be reduced in each step of the coal production-consumption chain (mining, transport, generation, and transmission).
    - ⇒ Renewables, while environmentally benign, are currently more expensive than other options for developing countries.
    - Another important question facing us all is how to double world food production over the next three decades without destroying natural habitats?
    - ⇒ Agriculture already affects 37% of the world's land and consumes about 70% of the world's available water supplies
    - ⇒ The projected two-fold expansion of agriculture (80% from intensification and 20% from extensification), more than any other single human activity, poses major threats of worsening soil degradation, natural habitat conversion and pollution.
  - All of us here have a role to play
    - ⇒ scientists: provide leadership in identifying and reducing uncertainty regarding interlinkages and thresholds.
    - ⇒ legislators and lawyers: help to provide an appropriate enabling environment.
    - ⇒ economic planners: fully factor in environmental and social concerns into their decisions.
    - ⇒ and environmental and social actors: better understand the power of economic incentives and the important need for economic development.

IV. What is the Bank committed to do

- Continue to play a strong role in the Global Environment Facility
- Global Water Partnership
  - ⇒ Initiated together with UNDP and Swedish Sida.
  - ⇒ Objectives are to ensure that the approximately $30 million of technical assistance in the water sector is deployed more efficiently and effectively, and conforms to the global consensus on water policy which emerged as a result of UNCED.
- World Commission on Dams
  - ⇒ Initiated with IUCN
  - ⇒ Involves a wide variety of stakeholders in the large dams debate.
  - ⇒ To address two questions:
    - * when are large dams appropriate?
    - * what are standards and procedures to be followed in planning for, constructing and operating these dams?
  - ⇒ To be chaired by Professor Dader Asmal, Minister of Water and Forestry from South Africa
  - ⇒ Will deliver its report in about two and one-half years.
- Carbon Investment Fund
  - ⇒ Progress to date on climate change has clearly been inadequate. Only 3 of the OECD countries are likely to reach their non-binding commitments under the Convention for the year 2000, and this seems to be more an accident of circumstance than a result of good policy.
  - ⇒ It is essential that at the Kyoto meeting later this year industrial countries make a strong commitment to significantly reduce greenhouse gas emissions - and that these commitments be implemented. I believe that progress would be facilitated if Joint Implementation with crediting were permitted under the Convention.
  - ⇒ Global warming affects us all, but some of us more than others. Developing countries will suffer the most damage, and their poor will be hit the hardest.
  - ⇒ I see the Bank's role in climate Change as providing every opportunity to developing countries to benefit from the huge investment the OECD must make in reducing climate change. For this purpose, the World Bank would be willing to launch a Carbon Investment Fund, should Parities to the Convention find this helpful.
- WWF-Bank Alliance
  - ⇒ Objective to work with others to help arrest the loss of forests globally.
  - ⇒ "stretch" targets for the year 2000:
  - ⇒ a representative network of protected areas amounting to at least 10% of each of the world's forest types.
  - ⇒ an additional 50 million hectares of forest ecosystems under strict conservation, and an additional 200 hectares of tropical, temperate and boreal forests under entirely sustainable management with independent certification, by the year 2005.

- Knowledge Bank

The President's Luncheon

on the occasion of the Fifth World Bank Conference

on

Environmentally and Socially Sustainable Development

October 6, 1997 at 12:30 p.m.
in the
MC- C1 Level, K Dining Room

The World Bank
1818 H Street, NW
Washington DC, 20433

Lunch
12:30 to 14:00

You are hosting a luncheon in DINING ROOM K (this is the A La Carte restaurant) for all persons on the plenary program at Lisner on October 6 and 7, approximately 30 people.

Please note that the Vice President of El Salvador, Dr. Enrique Borgo Bustamante,(bio attached) the Minister of Environment and Natural Resources, and Ambassador Rene A. Leon will be joining you for lunch. This is new. It came after the Hong Kong briefing. The V.P. may decide to address the ESSD5 afternoon October 6 plenary at 3 p.m. We have arranged for him and his delegation to be met at the MC entrance by a representative from LAC.

As you may be leaving early, you may wish to address the group during the meal. Some suggested talking points are attached.

The only protocol requirement among the guests will be to seat Vice President Bustamante on your right and H.E. Judge Christopher Weeramantry on your left. He is the Vice President of the International Court of Justice at the Hague. Your seat is in the center of the table. All others are free seating.

The guests will know that you have to leave before the end of the lunch. The bus that brings your guests from Lisner Auditorium at 12:20 p.m., will return them at 2:20 p.m.or thereabouts to the auditorium.

LUNCHEON REMARKS
12:30
ROOM K , C1 MC
OCTOBER 6, 1997

- This annual event brings Bank colleagues together with people from all over the world to consider the challenges and opportunities in advancing environmentally and socially sustainable development.

- In the past five years this event has grown is status and size. THE REASON IS THAT PEOPLE SUCH AS YOURSELVES ARE WILLING TO COME FROM GREAT DISTANCES TO SHARE YOUR REKNOWN EXPERTISE IN THIS FORUM.

- This lunch is in your honor. It is a very inadequate way of expressing my personal gratitude to you for sharing your very limited time so that we might learn from you.

- Already you have already made a difference for us as during the past months, knowing of this week's program and your participation, many Bank staff have become more aware of the global ecosystem debates and their relevance to our work. Consequently several new Bank training initiatives to address global ecosystem issues are being launch this week.

- Each of you represents great hope for solutions to the challenges we face. Your guidance, and your commitment to excellence in your professions, is welcomed in your engagement with us. We are committed to making a difference to the poor in the world and for the world's ecological heritage.

- Thank you very, very much for joining with me today and this week.

VICE PRESIDENT OF EL SALVADOR

Dr. Enrique Borgo Bustamante graduated as a lawyer from the Universidad Nacional de El Salvador in San Salvador. He obtained a Masters Degree in Government Finances and Civil and Commercial Law from the University of Rome, Italy.

Dr. Borgo has been legal advisor to the Central Bank, private enterprises, as well as professor and founder of Dr. Jose Matias Delgado University. Since 1990 he has been Advisor Member of El Salvador's Mission to the United Nations.

In the international field, he has represented the country at the FAO in Rome, in the Legal Committee of the Central American Monetary Unit, as a Delegate in the Peace Negotiating Committee with Honduras in December 1973, and as President of the Latin American Air Transportation International Association, amongst others.

Dr. Borgo Bustamante has been decorated with the medal "Plata de San Gregorio Magno en Clase Civil" on behalf of Pope John Paul II, "Lawyer of the Year for 1996" given by the Lawyers Association of El Salvador, and "Orden Bernardo O'Higgins en el Grado de Gran Cruz" given by the government of Chile.

He was elected Vice-President of El Salvador on June 1st, 1994 and also serves as President of the National Council for Sustainable Development.

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