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DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. fax cover sheet	re: Biodiversity IWG [partial] (1 page)	07/22/1993	P3/b(3)
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COLLECTION:

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Council on Environmental Quality
Kathleen "Katie" McGinty
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Biodiversity Meeting July 30, 1993/Strategy

2012-0769-F

rs2960

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

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RR. Document will be reviewed upon request.

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- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

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BIODIVERSITY IWG*

AGENCY	NAME	PHONE	FAX
FROM:			
DOS	Peter Thomas	736-7113	736-7351
TO:			
CIA	(b)(3)		
DOC/NOAA	Donna Wieting	482-5181	482-1156
/NOAA	Arthur Paterson	482-6196	482-4307
/ITA	Eileen Hill	482-3227	482-5939
/PTO	Jeff Kushan	703-305-9300	703-305-8885
EPA	Robert Ward	260-3548	260-3828
FDA	Lois Ann Beaver	301-443-4480	301-443-0235
AID	Maria Beebe	703-875-4255	703-875-4639
	John Wilson	703-875-4539	
DOJ	Chuck Sheehan	514-4361	514-0557
	Annie Petsonk	514-7892	
USTR	Catherine Field	395-3432	395-3911
	Gordona Earp	395-6864	
CEA	Jonathan Wiener	395-5012	395-6947
CEQ	Dinah Baer/		
	Horst Greczmiel	395-5754	395-5744
NSF	Mary Clutter	357-9854	357-7059
	James Edwards(alt.)	357-7332	357-1191
	James Gosz (alt.)	357-7332	
Treasury	Michael Kaplan	622-0443	622-1228
DOD	Peter Boice	703-695-3716	703-697-7548
USCG	Bruce Russell	267-0421	267-4085
OSTP	Robert Watson	456-6202	395-1571
	Mark Schaefer		
DOI	Douglas Buffington	208-6393	208-4674
OMB	Scott Cameron	395-6822	395-6899
OEP/NSC	David Doniger	395-6938	395-1590
USDA/FS	Robert Szaro	205-1075	205-1530
	Greg Ruark	205-1524	
/ARS	Henry Shands	301-504-5059	301-504-5467
/APHIS	Val Giddings	301-436-7601	301-436-8724
Smiths.	Tom Lovejoy	786-2263	786-2304
	Robin O'Malley	208-3700	208-1873
NCI/NIH	Gordon Cragg	301-846-5387	301-846-6178
FIC/NIH	Francesca Grifo	301-496-2516	301-402-2056
DOE	Tom Laverty	586-2061	586-2062

PLEASE SEE ATTACHED ONE PAGE MESSAGE Please call with corrections and updates to this list.

(B3787)

Amy - call us both in. David

PHOTOCOPY PRESERVATION

Notice

Biodiversity Inter-Agency Working Group Meeting

Date: July 30, 1993

Time: 1:00 p.m.

Place: State Department, Room 7835 (OES Conference Room)

Call 647-3367 to confirm attendance. If you attended the last meeting your DOB and SS# for pre-clearance at C-Street should be on file. If in doubt please leave them again.

Agenda

7/12/91 123-36-7007

I. Ratification of the Convention on Biological Diversity

-- Discussion of ^{*Do they need*} implementing legislation *to carry out the Convention?*

All agencies should have responded by today or early next week on this question.

-- *Strategy for impl. legis (mixed results + they may)*
Development of International Biodiversity Strategy

Please check + see what agencies have said
-- Participants should be prepared to discuss their reactions to the straw person initiatives presented at our last meeting and ready to share possible initiatives. *When was that? June 30th*

III. Preparation for first Intergovernmental Committee Meeting (October 11-15).

-- We will report on UNEP's preparations for this meeting.

-- *1st* Interim mtg. of the convention.

Change in NEPA needed?

* Straw person initiatives - will send today

updates on ratification stuff too.

(copy of ratification)

Donda

my fax - 456-2710



United States Department of State

Bureau of Oceans and International
Environmental and Scientific Affairs

Washington, D.C. 20520

RAPIDFAX

CANON FAX-620
!!!URGENT!!!

Date:

9/15/93

Time:

1221

Arnee Christensen

TO:

Tel. No:

Office:

Fax No:

456-2716

Pages to follow:

3

FROM: Peter O. Thomas, Ph.D.

TEL. No: 202 736-7113

Office Symbol/Number: OES/EHC

Fax No: 736-7351

SEEHCB #2767

MESSAGE

As promised

Draft Outline of Primary International Goals/Objectives
Submitted by Inter-Agency Working Group

Objective I. Save What Remains: Conserve areas/ecosystems, species, and genetic resources in need of protection. Promote sustainable resource management of such areas within and outside conservation zones.

Possible Activities:

- A. Identify target areas, hotspots in need of protection
- B. Promote creation of parks and protected areas
- C. Promote international networks for protected areas management
Man and the Biosphere.
- D. Promote in-country management and legislative capabilities

Measures of Success:

- A. Increase in areas under protection
- B. Increase in management effectiveness

Objective II: Ameliorate Threats: Integrate socio-economic and environmental decision making to reduce threats and mitigate negative impacts to biodiversity.

Possible Activities:

- A. Focus on sustainable use of biological resources in important biodiversity areas.
- B. Strengthen and support efforts to recognize and evaluate economic costs and benefits.
- C. Encourage development and implementation of incentives and conditions for effective conservation and sustainable use of biodiversity.
- D. Encourage steps to relieve stressors on ecosystems, eg. pollution prevention (including land-based sources), sustainable agriculture, alien species.

Measures of Success:

- A. Reduction of pollution, socio-economic impacts on biodiversity.
- B. Reduction of human impacts on biodiversity rich areas.
- C. Increase in local level actions to protect and maintain biodiversity

Objective V: International Cooperation: Effective programs for conservation and sustainable use of biodiversity will be increasingly addressed through the Convention on Biological Diversity as well as through cooperation between a variety of country partners. The U.S. should forge links with other developed countries and developing countries in implementing the objectives outlined above.

Possible Activities:

- A. Identify potential partnerships for biodiversity activities.
- B. Undertake regional biodiversity planning with Mexico and Canada.

Measures of Success:

- A. Stronger regional and global cooperation on biodiversity issues.
- B. Greater understanding between developing and developed country partners.

Rough List of Means to consider to Achieve Objectives

Direct Agency action

Inter-Agency Cooperation

NGO/Private Sector Cooperation

Bilateral Approaches

Multilateral Approaches (Convention on Biodiversity and other fora)

Collaborative design and implementation of programs/policies with developing and developed countries

National and International Policy development

Examine all policy actions for impact on biodiversity

Create incentives and conditions

Support regional and sub-regional partnerships

Support and expand on existing international infrastructures

Objective III: Infrastructure Development: Develop policy, material and human infrastructure to address biodiversity conservation. Capacity building in the areas of biodiversity research, management, economics, etc.

Possible Activities:

- A. Training technical and management personnel at both U.S. and in-country locations.
- B. Support of the development of country studies and action plans for biodiversity.
- C. Conduct workshops for government officials on policy reform, compliance mechanisms, etc.
- D. Promote private industry participation in training, human resource development.

Measures of Success

- A. Increase in successful implementation of biodiversity action plans.
- B. Increase in numbers of scientists and resource managers and corresponding institutions.
- C. Increase in number of enforcement actions.

Objective IV: Development of Knowledge and Sharing of Information: Basic research is essential to improve our understanding of biodiversity but as important is research geared toward improving management and sustainable use. Information sharing is crucial to enhance scientific and technical cooperation, including repatriation of data.

Possible Activities:

- A. Provide training in research methods for biodiversity surveys, monitoring, etc.
- B. Initiate and support studies with regard to fundamental biodiversity management questions.
- C. Support the development of data networks at global, regional and local scales for sharing of information and repatriation of data.
- D. Support development of research capabilities within national biodiversity action plans.
- E. Create national biodiversity data center with global link.
- F. Establish agreed protocols for standardization of data collection and dissemination procedures.



*David
Can you find out
status of this?*

United States Department of State

Bureau of Oceans and International
Environmental and Scientific Affairs

Washington, D.C. 20520

*Copy for Ellen
not David*

TO: OES/E - Rafe Pomerance
FROM: OES/ETC - Paul Blackburn *HB*
SUBJECT: Ratification Strategy: Convention on Biological
Diversity (CBD)

Our goal is to submit the ratification package to the Senate for Advice and Consent by September 15, 1993. Ideally ratification would occur before the October 12-15 Intergovernmental Committee Meeting (IGC) in Geneva. To accomplish this task, we need to:

- o Maximize international and domestic support for our interpretive statements as the basis for building support for ratification of the Convention by the Senate.
- o Prepare the transmittal package for the President's signature.
- o Create an environment among signers of the Convention, particularly those in the LDCs, that welcomes United States participation in the upcoming October IGC and recognizes the seriousness with which we undertake our participation.

A chronology of actions is attached. The following describes the steps taken to date to achieve our goal and outlines what remains to be done.

Interpretive Statements

We need to obtain international support (or at least, acquiescence) for our interpretive statements to (1) fulfill a Presidential directive, (2) blunt potential Senate opposition to the Convention based on adverse domestic or foreign reaction to the U.S. statements, and (3) build foreign support for U.S. participation in the Convention's proceedings.

Worrell we
In his announcement of the U.S. intent to sign the CBD, the President directed the Department to develop interpretive language addressing problematic portions of the CBD with other countries. This effort has been underway since early April. There also have been numerous briefings of domestic industry representatives, NGOs and Senate staffers regarding the U.S. interpretive statement. L expects a final draft interpretative statement on IPR and finance to be ready for interagency clearance by August 6. On a strictly domestic front we will ~~also finalize decisions~~ regarding the need for unilateral statements concerning sovereign immunity, UNCLOS, and Article 3 by this time.

A. Developed Countries

The EC has decided to adopt a general ratification statement on intellectual property rights. While we favor more specific language, the EC action supports the U.S. approach and indicates similar concerns with the Convention. With regard to finance, the Europeans generally see the declarations already issued as sufficient statements of their concerns. The UK may choose to repeat its signing statement in its ratification package. The Europeans have agreed among themselves that they will work within the Conference of Parties to ensure that all decisions on the financial mechanism are made by consensus, an approach we favor.

We also have approached several non-EC developed countries requesting support for our IPR statement. Japan, having already ratified, is unable to place a statement in its ratification package but has indicated a willingness to issue a letter or statement of support for the language we have proposed. Austria, and Switzerland are actively considering our approach. We know that these countries have followed the EC decision-making process with interest. We understand that Switzerland will soon issue an interpretive statement, but we are unaware of its content.

Canada, Australia and New Zealand have indicated they will not adopt our approach, though New Zealand will support us verbally.

B. Domestic Support

Industry/NGO support on the Hill is crucial to Senate support of the Convention. Early on, an industry/NGO task force produced its own ideas on interpretive language acceptable to both constituencies. Briefings of this group and other industry and NGO groups have been frequent during the past few months. It is important to keep these channels open and active in the weeks prior to submitting the ratification package. We need to update these groups on our ratification efforts and to share our interpretive statements in order to enlist their support to lobby the Senate to give its advice and consent to the Convention. We will release this language soon in NGO/industry briefings to receive comments prior to submittal of the Convention to the President.

We will need to stress, particularly to industry groups, that strong industry support for a quick, low-profile ratification may draw less developing country attention to our interpretive statements, than a protracted contentious ratification process. We wish to minimize the pressure developing countries feel to react with counter-statements of their own.

We briefed the Senate Foreign Relations Committee staff in May. More recently we briefed Senator Wallop's staff. We will meet soon with SFRC staff to discuss the timing of the Administration's submission of the ratification package and their expectations with regard to the package. Subsequently, we will brief a larger Senate group including representatives of the Environment and Energy and Natural Resources Committees, and also selected House aides.

The Transmittal Package

The package requires 1). an action memo to the Secretary requesting that he forward to the President, 2). the submittal letter to the President, and 3). the transmittal letter from President to Senate requesting advice and consent to ratification. Attached to the submittal letter will be 1). the Convention text, 2). U.S. interpretive statements and evidence of support from other countries, and (3) a statement of any required or desired legislative changes.

There has been question as to whether to include environmental documentation. The Department's policy has been that such a statement is not required by NEPA. Although such documents have been prepared for policy reasons, the Department's legal staff recommends that environmental documents not be submitted in light of the recent court decision on an EIA for NAFTA. Our strategy recognizes that it may be better to have one prepared than to wait for the request. We will proceed to develop such a statement.

OES/EHC and L/OES have the responsibility for overseeing the submittal process. We expect inter-agency review of legislative authority to be completed by July 30. We will begin shortly to draft the remaining papers and get interagency clearance for them. Key to this will be finalizing the interpretive statements.

Welcoming the U.S. as a Participant in Convention Activities

If we are to be effective in the IGC and the Conference of the Parties (COP), we need to take a proactive (soft landing) approach to shaping reaction to our interpretive statements. Governments, in both the developed and the developing world, need to understand that our domestic decision to adopt specific interpretive statements in no way derogates from the U.S.

commitment to be a constructive participant in Convention activities. We will express our commitment to the Technology Transfer and financial transfer objectives of the Convention and our desire that the old arguments of the negotiating sessions not be reopened.

Prior to submittal of the package to the President, we will demarche EC capitals, the Canadians, New Zealand, and the Australians to ask that while these countries have not been able to adopt similar language, that they be supportive of our interpretations. We will make a similar approach to Austria and Switzerland if they do not adopt our approach.

In the month prior to the IGC we will approach several individuals prominent in representing developing country concerns in multilateral fora to lay out our case. Chair of the CSD Razali, Nitin Desai (India, deputy to Strong at UNCED), Tommy Koh (Singapore), and Kamal Nath (Indian Environment Minister) are possibilities. We will explain the U.S. ratification process and request their advice on how to best explain that process and our commitment to the Convention to developing country governments. We will follow-up these conversations with approaches to specific capitals and with UNEP personnel, particularly Executive Director Dowdeswell, and those involved in organizing the IGC to explain our approach and our concerns. This process already has started with your call to Dowdeswell on July 20.

Chronology of Actions

JULY

L/OES is conducting a review of recent environmental treaties to produce a list of when such statements have been produced. Once complete, this will be reviewed by OES/E and L/OES to reexamine this decision.

- 7/28 Prepare scope for possible environmental declaration to accompany Convention (OES/EHC)
- 7/28 Arrange meeting with original Industry/NGO group (WWF, Genentech etc.) to share interpretive statements and solicit comments.
- 7/29 Arrange mid-August meeting with Senate Foreign Relations Committee staff to explain ratification strategy and share interpretive statements.
- 7/30 IWG meeting to discuss required legislation.
- 7/30 Meet with original NGO/Industry group.
- 7/30 Finalize interpretive language.
- 7/30 Finalize discussions with Austria and Switzerland.

AUGUST

- 8/1 Request support letter from Japan
- Request UK support on Finance statement.
- 8/5 Arrange NGO meeting with BioNet group industry representatives and other interested parties to share interpretive statements.
- Set up broader Senate briefing.
- Week of
8/16 Briefing with Senate Foreign Relations Committee
- NGO and Industry large briefings.
- 8/18 Final date for comments on interpretive language.
- Week of
8/23 Briefing with broader Senate/House group.
- 8/25 Package out for final inter-agency clearance.
- 8/25 Prepare demarche cables and talking points which lay out soft-landing points. (OES/EHC)

SEPTEMBER

- 9/1 Submit ratification package to the Secretary.
 Pomerance go to New York to meet with Razali.
- 9/6 Demarche to developed countries and to LDCs on soft
 landing points.
 EHC arrange meetings with other target LDC
 representatives as appropriate.
 Phone call or personal visit with UNEP Executive
 Director to explain U.S. strategy and concerns with
 IGC.
- 9/15 President submits ratification package to the Senate.

Drafted: OES/EHC:PThomas

SEEHCB #3944 7/23/93

Cleared: OES/EHC:PBlakeburn
OES/EHC:RBlohme
L/OES:MChandler

Position Papers for Biodi IGC

I. Bureau for the IGC meeting (STATE)

- A. Who should chair
- B. Structure of the Bureau
- C. Future meetings of IGC

II. Secretariat (STATE)

- A. Role of interim Secretariat
- B. Composition of permanent Secretariat
- C. Location of Permanent Secretariat

III. Finance: (STATE, TREASURY)

- A. Interim Arrangements
 - 1. Liaison between Convention and the GEF
 - Project Consideration
 - Institution of formal relationship
- B. Subsidiary Body on Financial Arrangements (SBFA?)
- C. Determining Permanent Mechanism
- D. Significance of GEF restructuring
- E. Importance of Rules of Procedure for COP
- F. Use of the funding mechanism
 - 1. Eligibility criteria
 - 2. Project selection
- G. Incremental Costs

IV. Request for Financial Support

- A. U.S. response

V. Rules of Procedure for IGC and COP

VI. Steering Committee (Is this the "Bureau?") (STATE)

- A. Interim role
- B. Role after entry into force of the Convention

VII. Scientific and technical cooperation

- A. Interim Scientific and Technical Committee (STATE, NSF, EPA, DOI, USDA, NOAA)
 - 1. Proposed Composition
 - 2. Terms of Reference
 - 3. Proposed Work Plan
 - 4. Development of an Agenda for Scientific and Technological Research
 - 5. U.S. Role/Contributions

B. Scientific and Technical Committee (STATE, NSF, EPA, DOI, USDA, NOAA)

- 1. Proposed Composition
- 2. Terms of Reference
- 3. Proposed Work Plan
- 4. U.S. Role/Contributions

C. Clearinghouse proposal for scientific and technical cooperation

D. Mechanisms for handling data and information needs of the Convention.

VIII. Possible Protocols

A. Biosafety, (STATE, USDA, EPA)

1. Proposed U.S. strategy to move toward more favorable consideration of biosafety issues.
2. Response to capacity building/information exchange portions of Dowdeswell scenario. Immediate actions to take.

B. Plant Genetic Resources/ International Undertaking (Shands)

IX. Benefit Sharing/Access to Genetic Resources/Technology Transfer (USAID, USTR, PTO, USDA/ARS, NIH) *Jeff*

A. U.S. position on the role of IPR in transfer of benefits and technology transfer. Appropriate next steps in CBD context.

B. U.S. position on how to support sharing of benefits

1. U.S. Gov't supported activities
- 2. Private sector supported activities
- 3. Models/Examples

C. U.S. position on model laws with regard to regulating access to genetic resources.

D. How do we put forth this position in a positive pro-active way so as to enhance U.S. standing in CBD?

- 1. What succesful tech transfer/sharing of benefits activities are we involved in? (USAID, NSF, NIH, PTO USTR, EPA)
- 2. Be prepared to describe model agreements.
- 3. U.S. Colombia Technology Transfer initiative in CSD.

• look into

X. Initiatives on Capacity Building: How can we use the Convention on Biological Diversity to meet global needs to build capacity in conservation and sustainable use of biodiversity?

- A. Infrastructure development,
- B. increasing scientific and technical capabilities,
- C. information exchange
- D. leveraging assets

XI. How to get conservation and sustainable use back on the agenda.

- A. What items would we like to see there?
- B. Studies/Discussion of such things as:
 - 1. Extractive reserves
 - 2. Buffer zone management
 - 3. Meeting human needs while preserving biodiversity
 - 4. local socio-economic factors

XII. Relationship of CBD to CITES and Ramsar Conventions. Should it become a framework over these?



United Nations Environment Programme



Distr.
GENERAL

UNEP/CBD/IC/1/1/Add.1
17 August 1993

ORIGINAL: ENGLISH

INTERGOVERNMENTAL COMMITTEE
ON THE CONVENTION ON
BIOLOGICAL DIVERSITY
First session
Geneva, 11-15 October 1993

ANNOTATIONS TO THE PROVISIONAL AGENDA AND PROPOSED WORK PROGRAMME

Item 1. *Opening of the session*

1. Pursuant to paragraph 2 of Governing Council decision 17/30 of 21 May 1993, the Executive Director of the United Nations Environment Programme (UNEP) is convening the first session of the Intergovernmental Committee on the Convention on Biological Diversity in Geneva from 11 to 15 October 1993. Registration of participants will take place at the Geneva Conference Centre from 2 p.m. to 7 p.m. on Sunday, 10 October 1993 and from 8 a.m. to 9 a.m. on Monday, 11 October 1993.

2. The session will be opened at 9.30 a.m. by the Executive Director of the United Nations Environment Programme, who will make an opening statement.

Item 2. *Organizational matters*

(a) *Election of officers*

3. The Executive Director will act as presiding officer as the Committee elects its Chairperson, who will take over as the Committee proceeds to decide on the structure and membership of the rest of the Bureau.

4. Should the Committee decide to establish two working groups, as the Executive Director is suggesting, it may wish to consider having each of them co-chaired by two vice-chairpersons. Each working group would elect its own rapporteurs.

(b) *Adoption of the agenda, procedural matters and organization of work*

5. The provisional agenda (UNEP/CBD/IC/1/1) has been prepared by the UNEP secretariat on the basis of Governing Council decision 17/30. It contains only one substantive item ("Preparation for the first meeting of the Conference of the Parties to the Convention on Biological Diversity in accordance with the resolutions of the Nairobi Final Act of the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity").

6. *Rules of procedure.* The Committee will have before it for its consideration and approval draft rules of procedure for its deliberations (UNEP/CBD/IC/1/2) prepared by the secretariat on the basis of the rules of procedure of the Intergovernmental Negotiating Committee (INC) for a Convention on Biological Diversity (UNEP/Bio.Div/WG.2/2/5, annex).

UNEP/CBD/IC/1/1/Add.1

Page 2

7. Organization of the work of the session. The Executive Director is proposing that, after the first meeting of the session, the Committee should split into two working groups, one (Working Group I) to consider those aspects of its mandate under resolution 2 of the Nairobi Final Act relating to the conservation and sustainable use of biological diversity (resolution 2, paras. 2 (a), (b) and (g)) (see paras. 13-14 below) and the other (Working Group II) to consider aspects of its mandate relating to financial resources, technology transfer and benefit-sharing (resolution 2, paras. 2 (c), (d), (e) and (f)) (see paras. 15 (a)-(f) below). Working Group II would also consider, in accordance with paragraph 2 (i) of resolution 2, principles for inclusion in the draft rules of procedure for meetings of the Conference of the Parties (see para. 17 (a) below).

8. The Working Groups would meet simultaneously in the afternoon of Monday, 11 October, and in the morning and afternoon of Tuesday, 12 October, to consider the issues allocated to them. They would report back to plenary in the morning of Wednesday, 13 October, when action would be taken on their recommendations. Having completed its consideration of the Working Group's recommendations, plenary would hear a statement by the Food and Agriculture Organization of the United Nations (FAO) in connection with resolution 3 of the Nairobi Final Act, which would be followed by statements by Governments and organizations wishing to make brief presentations to the Committee on their activities related to biological diversity pursuant to paragraphs 7 and 8 of resolution 2 of the Nairobi Final Act (see para. 16 below).

9. The Working Groups would reconvene in the afternoon of 13 October to continue their work on the issues allocated to them, bearing in mind the decisions emerging from the plenary meeting in the morning. They would each hold a further two meetings on Thursday, 14 October, and adopt their reports in the morning of Friday, 15 October. Plenary would reconvene that afternoon to consider outstanding matters under item 3 of the provisional agenda, as well as any other business that might be raised, and to adopt the report of the Committee on the work of the session (see paras. 17 (b) and (c), 18 and 19 below). The session would end by 5 p.m. on Friday, 15 October.

10. The proposed work programme for the session is set out in detail in the annex to the present annotations.

Item 3. *Preparation for the first meeting of the Conference of the Parties to the Convention on Biological Diversity in accordance with the resolutions of the Nairobi Final Act of the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity*

Documentation

11. Under item 3 of the provisional agenda, the Committee will have before it the following documentation:

(a) A note by the Executive Director on the issues before the Committee (UNEP/CBD/IC/1/3), which sets out the background for the session, traces relevant developments since the adoption of the Convention on Biological Diversity, discusses the main areas on which the Committee is expected to focus as it prepares for the first meeting of the Conference of the Parties, and presents a number of proposals for the Committee's consideration;

(b) Highlights of the reports of the expert panels, prepared by the secretariat (UNEP/CBD/IC/1/4);

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(c) A note by the secretariat on the development of legal regimes under multilateral treaties (UNEP/CBD/IC/1/5);

(d) Draft rules of procedure for meetings of the Conference of the Parties to the Convention (UNEP/CBD/IC/1/6).

Issues

12. The basis of the Committee's work under this item is resolution 2 of the Nairobi Final Act, which, as indicated above under item 2, may be conveniently divided into four broad categories: conservation and sustainable use of biological diversity (resolution 2, paragraphs 2 (a), (b) and (g), to be discussed in Working Group I); financial resources, technology transfer and benefit-sharing (paragraphs 2 (c), (d), (e) and (f), to be discussed in Working Group II); Government and agency presentations (paragraphs 7 and 8); and, other questions relating to the preparations for the first meeting of the Conference of the Parties (paragraphs 2 (h) and (i)).

13. With regard to the issues relating to the conservation and sustainable use of biological diversity (resolution 2, paras. 2 (a), (b) and (g)), the Committee may wish to focus its discussions on the following questions:

(a) What range of activities should be supported?

(b) What principles should guide decisions on who is eligible for financial assistance?

(c) What factors will determine the priority of activities for funding?

(d) What is meant, and what is not meant, by incremental costs?

(e) If an interim scientific and technical advisory committee (ISTAC) is established, what should its tasks be?

(f) What should be the membership and composition of ISTAC?

To assist the Committee in its deliberations, the secretariat will provide it with the eligibility criteria used by a variety of international organizations. In addition, in accordance with resolution 2, paragraph 8, of the Nairobi Final Act, various agencies will be given an opportunity to describe the type of projects and activities they are currently funding.

14. The background to the above-mentioned issues related to conservation and sustainable use of biological diversity is presented in detail in the Executive Director's note (UNEP/CBD/IC/1/3, paras. 13-32).

15. The issues relating to financial resources, technology transfer and benefit-sharing, which are discussed in detail in paragraphs 33-59 of the Executive Director's note, may be grouped as follows:

(a) Operation of the financial mechanism prior to entry into force of the Convention (resolution 1). Resolution 1 designates the Global Environment Facility (GEF) to operate the financial mechanism for the period between the opening of the Convention for signature and its entry into force. GEF will make a brief presentation on the structural changes being undertaken in response to the requirements stated in the Convention;

(b) Characteristics required of the institutional structure operating the financial mechanism (resolution 2, paragraph 2 (e) and (f)). In accordance with Article 21, paragraph 1, of the Convention, "the mechanism shall function under the authority and guidance of, and be

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accountable to, the Conference of the Parties ... [which shall] determine the policy, strategy, programme priorities and eligibility criteria relating the access to and the utilization of such resources ... and shall operate within a democratic and transparent system of governance". To help develop an evaluation framework for use by the Conference of the Parties in selecting the institutional structure to operate the financial mechanism, the Committee may wish to describe in more detail the kinds of structures and procedures needed to meet the requirements of the Convention [see paragraph 35 of the Executive Director's note]. As suggested by the Executive Director in her note (para. 36), the Committee may wish to consider establishing a small subsidiary body on financial arrangements to take the characteristics identified by the Committee and incorporate them into an evaluation framework for consideration by the Conference of the Parties at its first meeting;

(c) *Process to review the interim institutional structure* operating the financial mechanism upon the Convention's entry into force (resolution 2, paragraphs 2 (e) and (f)). A decision will need to be made on the operation of the financial mechanism after entry into force and prior to a decision by the Conference of the Parties. According to Article 39 of the Convention, "provided it has been fully restructured in accordance with the requirements of Article 21", GEF could continue to operate the mechanism between the entry into force of the Convention and the first meeting of the Conference of the Parties or until the Conference of the Parties decides which institutional structure will be designated in accordance with Article 21. As suggested by the Executive Director in her note (para. 39) the Committee may wish to consider delegating this decision to the Bureau or a small steering group;

(d) *Technology transfer and benefit-sharing: the clearing house mechanism* (resolution 2, paragraph 2 (d)). Article 18, paragraph 3, of the Convention states that "the Conference of the Parties, at its first meeting, shall determine how to establish a clearing-house mechanism to promote and facilitate technical and scientific cooperation". Consideration needs to be given to the characteristics required by the clearing-house mechanism for it to be a useful tool in the transfer of technology and the establishment of benefit-sharing arrangements. Possible items for discussion include the subject-matter to be covered and the location of the clearing-house. The issues involved are explored in more depth in paragraphs 50-52 of the Executive Director's note;

(e) *Benefit-sharing arrangements* (resolution 2, paragraph 2 (d)). An important feature of the Convention is the bargain implicit between Article 15, which requires countries to facilitate access to genetic resources for environmentally sound uses, and Article 16, which provides for transfer of relevant technologies, in particular to countries providing genetic resources. The question is how this bargain should be made operational. In her note, the Executive Director sets forth a forward agenda concerning these articles (paras. 40-49) and, in this connection, the Committee's deliberations might focus on the need for:

- (i) Model legislation;
- (ii) Bilateral pilot projects for cooperative arrangements;
- (iii) Information-gathering and primary research on the role and potential of intellectual property rights in benefit-sharing arrangements, looking in particular at how they fit in with other components of benefit-sharing;
- (iv) Active involvement of local communities and industry;

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(f) Biosafety (resolution 3, paragraph 2 (c)) under Article 19, paragraph 3, of the Convention, the Parties are "to consider the need for and modalities of a protocol setting out appropriate procedures, including in particular, advance informed agreement, in the field of safe transfer, handling and use of any living modified organism" resulting from biotechnology ...". In this light, the Committee's discussion on biosafety might focus on what process should be set in motion to enhance the safety of the transfer of biotechnology, in particular the transfer of genetic material. The Committee may wish to consider the two-track approach outlined in the Executive Director's note (paras. 56-59), by which track 1 would consist of immediate action through existing programmes, while track 2 could involve the establishment of an international biosafety instrument.

16. *Government and agency presentations.* By paragraph 7 of resolution 2 of the Nairobi Final Act, Governments were invited "to inform the meeting of national action taken for the conservation of biological diversity and the sustainable use of its components consistent with the provisions of the Convention and pending its entry into force". Similarly, by paragraph 8 of the resolution, international organizations were invited to provide information to the Committee on their activities. Provision has therefore been made in the proposed work programme for Governments and agencies to make brief statements on the subject in plenary. In view of the short time available to the Committee, a limit may have to be placed on the length of such statements.

17. *Other questions relating to the preparations for the first meeting of the Conference of the Parties (resolution 2, paragraphs 2 (h) and (i)),* including:

(a) *Rules of procedure of the Conference of the Parties.* In accordance with Article 23, paragraph 3, of the Convention, the Conference of the Parties at its first meeting is to adopt rules of procedure for itself and any subsidiary bodies that it might establish. At the session, ICCBD will have before it draft rules of procedure for the Conference of the Parties prepared by the secretariat on the basis of, *inter alia*, the rules of procedure used in meetings of the parties to other major environmental treaties. As suggested in the note of the Executive Director (para. 11), Governments might wish to identify principles they find missing from the draft rather than negotiating detailed language. The secretariat could then be given a task of putting the agreed additional principles into legal language for incorporation into a revised draft of the rules;

(b) *Future work of the Committee.* The Committee will have to decide on the need for a second session of the Committee and the most suitable time to convene the Conference of the Parties. The Executive Director intends to consult with delegations on the subject and report to the plenary thereon;

(c) *Resources to support the Interim Secretariat and meetings of ICCBD and its subsidiary bodies.* In accordance with resolution 2, paragraph 2 (h), the Executive Director will report on the status of resources available for the operation of the Interim Secretariat and meetings of the Intergovernmental Committee and any subsidiary bodies it may establish.

Item 4. Other matters

18. The proposed work programme provides for matters other than those directly covered by resolution 2 of the Nairobi Final Action to be raised and discussed briefly.

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Item 5. Adoption of the report

19. The Committee is expected to adopt its report at the final meeting of the session, in the afternoon of Friday, 15 October. At the same meeting, it would also take note of the reports adopted in the working groups that it may establish.

Item 6. Closure of the session

20. It is expected that the Committee will conclude its work by 5 p.m. on Friday, 15 October.

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Annex

PROPOSED WORK PROGRAMME OF THE INTERGOVERNMENTAL COMMITTEE FOR THE CONVENTION
ON BIOLOGICAL DIVERSITY

	PLenary	WORKING GROUP I	WORKING GROUP II
Monday, 11 October 1993 9.30 a.m. to 12.30 p.m.	OPENING OF THE SESSION - <u>Opening statement of the Executive Director of UNEP (40 minutes)</u> ORGANIZATIONAL MATTERS: (a) ELECTION OF OFFICERS (1 hour, 25 minutes): - <u>Election of Chairperson</u> - <u>Decision on the structure of the Bureau and election of officers required</u> (b) ADOPTION OF THE AGENDA, PROCEDURAL MATTERS AND ORGANIZATION OF WORK (35 minutes) - <u>Adoption of the agenda</u> - <u>Adoption of the rules of procedure</u> - <u>Organization of the work of the session</u>		
2.30 p.m. to 5.30 p.m.		ORGANIZATIONAL MATTERS <u>Election of rapporteurs (15 minutes)</u> PREPARATION FOR THE FIRST MEETING OF THE CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY IN ACCORDANCE WITH THE RESOLUTIONS OF THE NAIROBI FINAL ACT OF THE CONFERENCE FOR THE ADOPTION OF THE AGREED TEXT OF THE CONVENTION ON BIOLOGICAL DIVERSITY <u>Introductory statement by co-chairpersons (15 minutes)</u> <u>Conservation and sustainable use of biological diversity (pursuant to paragraphs 2 (a), (b) and (g) of resolution 2 of the Nairobi Final Act):</u> <u>Range of activities to be supported under the Convention (15 minutes)</u>	ORGANIZATIONAL MATTERS <u>Election of rapporteurs (15 minutes)</u> PREPARATION FOR THE MEETING OF THE CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY IN ACCORDANCE WITH THE RESOLUTIONS OF THE NAIROBI FINAL ACT OF THE CONFERENCE FOR THE ADOPTION OF THE AGREED TEXT OF THE CONVENTION ON BIOLOGICAL DIVERSITY <u>Introductory statement by co-chairpersons (15 minutes)</u> <u>Operation of the financial mechanism prior to entry into force of the Convention (pursuant to resolution 1 of the Nairobi Final Act): presentation by GEF on structural changes being undertaken in response to requirements stated in the Convention (20 minutes)</u> <u>Characteristics required of the institutional structure operating the financial mechanism (pursuant to paragraphs 2 (c) and (f) of resolution 2): description of kinds of structures and procedures needed to meet the requirements of the Convention (2 hours, 10 minutes)</u>

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BIODIVERSITY

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	PLENARY	WORKING GROUP I	WORKING GROUP II
<u>Monday, 11 October 1993</u> 2.30 p.m. <u>to</u> 5.30 p.m. (continued)		<u>Agency presentations</u> (pursuant to paragraph 8 of resolution 2) - Presentations by UNDP, World Bank and JNEP on biological diversity activities they are currently funding (10 minutes each) - Feedback from the Working Group on agency presentations (30 minutes)	
<u>Tuesday, 12 October 1993</u> 9.30 a.m. <u>to</u> 12.30 p.m.		<u>Conservation and sustainable use of biological diversity</u> (continued): <u>Principles to guide decisions on eligibility for financial support</u> (1 1/4 hours) <u>Factors to determine the priority of activities for funding</u> (1 1/4 hours)	<u>Characteristics required of the institutional structure operating the financial mechanism</u> (continued), including the need for and nature of a subsidiary body on financial arrangements to develop characteristics identified into an evaluation framework to assist the Conference of the Parties in selecting the institutional structure in accordance with Article 21 (3 hours)

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	PLENARY	WORKING GROUP I	WORKING GROUP II
<u>Tuesday, 12 October 1993</u> (continued) 2.30 p.m. to 5.30 p.m.		- <u>Conservation and sustainable use of biological diversity (continued):</u> - <u>What is meant and what is not meant by incremental costs</u> (1½ hours) Break (30 minutes) - Summary of discussion by co-chairpersons for presentation to plenary, and feedback from the Working Group (1 hour)	<u>Process to review the institutional structure operating the financial mechanism upon the Convention's entry into force</u> (pursuant to paras. 2 (c) and (f) of resolution 2) (1½ hours) Break (30 minutes) - Summary of discussion by co-chairpersons for presentation to plenary, and feedback from the Working Group (1 hour)
<u>Wednesday, 13 October 1993</u> 9.30 a.m. to 12.30 p.m.	PREPARATION FOR THE FIRST MEETING OF THE CONFERENCE OF THE PARTIES <u>Presentation of Working Group reports and recommendations</u> (40 minutes) <u>Consideration of Working Group recommendations</u> (50 minutes) <u>Statement by FAO</u> (pursuant to resolution 3 of the Nairobi Final Act) (10 minutes) <u>Statements by Governments and organizations</u> (pursuant to resolution 2, paras. 7 and 8, of the Nairobi Final Act) (1 hour, 20 minutes)		

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	PLENARY	WORKING GROUP I	WORKING GROUP II
<u>Wednesday, 13 October 1993</u> (continued) 2.30 p.m. <u>to</u> 5.30 p.m.		<u>Conservation and sustainable use of biological diversity</u> (continued): - Review by the Chairperson of the issues referred by the plenary to Working Group I (15 minutes) - Tasks of an interim scientific and technical advisory committee (ISTAC) if established (pursuant to para. 2 (b) of resolution 2): tasks ISTAC should undertake to facilitate the development of sound proposals for the first meeting of the Conference of the Parties (2 hours) Break (15 minutes) - Summary by Chairperson of discussion and feedback from Working Group (30 minutes)	- Review by the Chairperson of the issues referred by the plenary to Working Group II (15 minutes) <u>Rules of procedure of the Conference of the Parties</u> (pursuant to para. 2 (i) of resolution 2): principles not contained, or not adequately reflected, in the draft rules submitted by the secretariat (1 hour) <u>Technology transfer and benefit-sharing clearing-house mechanism</u> (pursuant to para. 2 (d) of resolution 2) including characteristics required of the clearing-house mechanism to be a useful tool in the transfer of technology and for the establishment of benefit-sharing arrangements (14 hours)
<u>Thursday, 14 October 1993</u> 9.30 a.m. <u>to</u> 12.30 p.m.		- <u>Membership and composition of ISTAC:</u> - Number of members (1 1/2 hours) - Fields of expertise of members (1 1/2 hours)	<u>Benefit-sharing arrangements</u> (pursuant to para. 2 (d) of resolution 2): ways to promote the fair and equitable sharing of benefits, for example: model legislation regulating access to genetic resources; bilateral pilot projects developing cooperative arrangements between developed and developing countries; case studies based on existing information on the effect of intellectual property rights on technology transfer and on the role of indigenous communities; and, the active involvement of industry and local communities (3 hours)



	PLEMARY	WORKING GROUP I	WORKING GROUP II
<u>Thursday, 14 October 1993</u> (continued) 2.30 p.m. to 5.30 p.m.		<u>Membership and composition of ISTAC</u> (continued): selection process for ISTAC members (1½ hours) Break (30 minutes) Summary by the Chair and feedback from Working Group (1 hour)	<u>Biosafety</u> (pursuant to para. 2 (c) of resolution 2): consideration of two-track approach to enhance biosafety: (1) immediate action through existing programmes; (2) possible creation of an international instrument Break (30 minutes) Summary by the Chair and feedback from the Working Group (1 hour)
<u>Friday, 15 October 1993</u> 9.30 a.m. to 12.30 p.m.		<u>Adoption of the report of the Working Group (3 hours)</u>	<u>Adoption of the report of the Working Group (3 hours)</u>
2.30 p.m. to 5 p.m.	<u>Future work of the Committee</u> (pursuant to para. 2 (i) of resolution 2): consideration of the need for a second session of the Committee and the most fruitful time to convene the first meeting of the Conference of the Parties (30 minutes) <u>Resources to support the Interim Secretariat and ICCED and its subsidiary bodies</u> (pursuant to para. 2 (h) of resolution 2): report by the Executive Director on the status of resources available for the operation of the Interim Secretariat and meetings of the Intergovernmental Committee and any subsidiary bodies it may establish (10 minutes) OTHER MATTERS Break (20 minutes) ADOPTION OF THE REPORT (1 hour) CLOSURE OF THE SESSION (30 minutes)		

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MEMO TO DAVID FROM AIMÉE
RE: BIOSAFETY MEETING AT STATE 9/09
DATE: 9/10/93

There were about eight of us at the meeting on Biosafety, which was chaired by Peter Thomas. The focus of the discussion was the International Plant Protection Convention (IPPC) and how much it will cover in relation to the Convention on Biodiversity. The IPPC attempts to prevent the spread of plant pests across borders. It is a "skeletal framework" and we need FAO's say as to its relevance and role with the convention on Biodiversity.

The convention deals with the international commerce of plants and plant products. The IPPC states that the signatories must form a plant protection organization which reports on pests in the international reporting round. A pest is defined as a bug, plant, weed or anything organic that could damage plants; in this way it could overlap to cover threats to plant biodiversity.

Developing countries in general do not have plant protection organizations with a level of proficiency to handle this convention. The FAO spends a great deal of its money helping to capacity build.

Threats to fauna biodiversity are not covered by the IPPC; look to the International Organization for Epizootics (OIE-(French)) who may cover relevant issues in their charter.

As far as biological genetic engineering is concerned: plants are far more involved than animals: between 7-800 certificates have been given for plant engineering and only 50 or so for animals.

If biotechnology is not covered by the document as it stands, there is no way to amend it quickly enough to play a role in the implementation process. As the document stands currently, there is nothing contentious or controversial. It was ratified in 1974 and amended in 1979. It did not come into effect, however, until April of 1992 because it was no one's priority.

The IPPC is administered under the FAO, which could pit UNEP against the FAO in dealing with convention implementation. We need the FAO to explain and show that the IPPC is not enough as is to handle threats to biodiversity.

Peter and others decided we need to convene more meetings to discuss how to approach this with reference to UNEP, and the timing in respect to Geneva.



United States Department of State

*Bureau of Oceans and International
Environmental and Scientific Affairs*

Washington, D.C. 20520

TO: OES/E - Rafe Pomerance

FROM: OES/ETC - Paul Blackburn *AB*

SUBJECT: Ratification Strategy: Convention on Biological
Diversity (CBD)

Our goal is to submit the ratification package to the Senate for Advice and Consent by September 15, 1993. Ideally ratification would occur before the October 12-15 Intergovernmental Committee Meeting (IGC) in Geneva. To accomplish this task, we need to:

- o Maximize international and domestic support for our interpretive statements as the basis for building support for ratification of the Convention by the Senate.
- o Prepare the transmittal package for the President's signature.
- o Create an environment among signers of the Convention, particularly those in the LDCs, that welcomes United States participation in the upcoming October IGC and recognizes the seriousness with which we undertake our participation.

A chronology of actions is attached. The following describes the steps taken to date to achieve our goal and outlines what remains to be done.

Interpretive Statements

We need to obtain international support (or at least, acquiescence) for our interpretive statements to (1) fulfill a Presidential directive, (2) blunt potential Senate opposition to the Convention based on adverse domestic or foreign reaction to the U.S. statements, and (3) build foreign support for U.S. participation in the Convention's proceedings.

In his announcement of the U.S. intent to sign the CBD, the President directed the Department to develop interpretive language addressing problematic portions of the CBD with other countries. This effort has been underway since early April. There also have been numerous briefings of domestic industry representatives, NGOs and Senate staffers regarding the U.S. interpretive statement. L expects a final draft interpretative statement on IPR and finance to be ready for interagency clearance by August 6. On a strictly domestic front we will also finalize decisions regarding the need for unilateral statements concerning sovereign immunity, UNCLOS, and Article 3 by this time.

A. Developed Countries

The EC has decided to adopt a general ratification statement on intellectual property rights. While we favor more specific language, the EC action supports the U.S. approach and indicates similar concerns with the Convention. With regard to finance, the Europeans generally see the declarations already issued as sufficient statements of their concerns. The UK may choose to repeat its signing statement in its ratification package. The Europeans have agreed among themselves that they will work within the Conference of Parties to ensure that all decisions on the financial mechanism are made by consensus, an approach we favor.

We also have approached several non-EC developed countries requesting support for our IPR statement. Japan, having already ratified, is unable to place a statement in its ratification package but has indicated a willingness to issue a letter or statement of support for the language we have proposed. Austria, and Switzerland are actively considering our approach. We know that these countries have followed the EC decision-making process with interest. We understand that Switzerland will soon issue an interpretive statement, but we are unaware of its content.

Canada, Australia and New Zealand have indicated they will not adopt our approach, though New Zealand will support us verbally.

B. Domestic Support

Industry/NGO support on the Hill is crucial to Senate support of the Convention. Early on, an industry/NGO task force produced its own ideas on interpretive language acceptable to both constituencies. Briefings of this group and other industry and NGO groups have been frequent during the past few months. It is important to keep these channels open and active in the weeks prior to submitting the ratification package. We need to update these groups on our ratification efforts and to share our interpretive statements in order to enlist their support to lobby the Senate to give its advice and consent to the Convention. We will release this language soon in NGO/industry briefings to receive comments prior to submittal of the Convention to the President.

We will need to stress, particularly to industry groups, that strong industry support for a quick, low-profile ratification may draw less developing country attention to our interpretive statements, than a protracted contentious ratification process. We wish to minimize the pressure developing countries feel to react with counter-statements of their own.

We briefed the Senate Foreign Relations Committee staff in May. More recently we briefed Senator Wallop's staff. We will meet soon with SFRC staff to discuss the timing of the Administration's submission of the ratification package and their expectations with regard to the package. Subsequently, we will brief a larger Senate group including representatives of the Environment and Energy and Natural Resources Committees, and also selected House aides.

The Transmittal Package

The package requires 1). an action memo to the Secretary requesting that he forward to the President, 2). the submittal letter to the President, and 3). the transmittal letter from President to Senate requesting advice and consent to ratification. Attached to the submittal letter will be 1). the Convention text, 2). U.S. interpretive statements and evidence of support from other countries, and (3) a statement of any required or desired legislative changes.

There has been question as to whether to include environmental documentation. The Department's policy has been that such a statement is not required by NEPA. Although such documents have been prepared for policy reasons, the Department's legal staff recommends that environmental documents not be submitted in light of the recent court decision on an EIA for NAFTA. Our strategy recognizes that it may be better to have one prepared than to wait for the request. We will proceed to develop such a statement.

OES/EHC and L/OES have the responsibility for overseeing the submittal process. We expect inter-agency review of legislative authority to be completed by July 30. We will begin shortly to draft the remaining papers and get interagency clearance for them. Key to this will be finalizing the interpretive statements.

Welcoming the U.S. as a Participant in Convention Activities

If we are to be effective in the IGC and the Conference of the Parties (COP), we need to take a proactive (soft landing) approach to shaping reaction to our interpretive statements. Governments, in both the developed and the developing world, need to understand that our domestic decision to adopt specific interpretive statements in no way derogates from the U.S.

commitment to be a constructive participant in Convention activities. We will express our commitment to the technology transfer and financial transfer objectives of the Convention and our desire that the old arguments of the negotiating sessions not be reopened.

Prior to submittal of the package to the President, we will demarche EC capitals, the Canadians, New Zealand, and the Australians to ask that while these countries have not been able to adopt similar language, that they be supportive of our interpretations. We will make a similar approach to Austria and Switzerland if they do not adopt our approach.

In the month prior to the IGC we will approach several individuals prominent in representing developing country concerns in multilateral fora to lay out our case. Chair of the CSD Razali, Nitin Desai (India, deputy to Strong at UNCED), Tommy Koh (Singapore), and Kamal Nath (Indian Environment Minister) are possibilities. We will explain the U.S. ratification process and request their advice on how to best explain that process and our commitment to the Convention to developing country governments. We will follow-up these conversations with approaches to specific capitals and with UNEP personnel, particularly Executive Director Dowdeswell, and those involved in organizing the IGC to explain our approach and our concerns. This process already has started with your call to Dowdeswell on July 20.

Chronology of ActionsJULY

L/OES is conducting a review of recent environmental treaties to produce a list of when such statements have been produced. Once complete, this will be reviewed by OES/E and L/OES to reexamine this decision.

- 7/28 Prepare scope for possible environmental declaration to accompany Convention (OES/EHC)
- 7/28 Arrange meeting with original Industry/NGO group (WWF, Genentech etc.) to share interpretive statements and solicit comments.
- 7/29 Arrange mid-August meeting with Senate Foreign Relations Committee staff to explain ratification strategy and share interpretive statements.
- 7/30 IWG meeting to discuss required legislation.
- 7/30 Meet with original NCO/Industry group.
- 7/30 Finalize interpretive language.
- 7/30 Finalize discussions with Austria and Switzerland.

AUGUST

- 8/1 Request support letter from Japan
- Request UK support on Finance statement.
- 8/5 Arrange NGO meeting with BioNet group industry representatives and other interested parties to share interpretive statements.
- Set up broader Senate briefing.
- Week of
8/16 Briefing with Senate Foreign Relations Committee
- NGO and Industry large briefings.
- 8/18 Final date for comments on interpretive language.
- Week of
8/23 Briefing with broader Senate/House group.
- 8/25 Package out for final inter-agency clearance.
- 8/25 Prepare demarche cables and talking points which lay out soft-landing points. (OES/EHC)

SEPTEMBER

- 9/1 Submit ratification package to the Secretary.
 Pomerance go to New York to meet with Razali.
- 9/6 Demarche to developed countries and to LDCs on soft
 landing points.

 EHC arrange meetings with other target LDC
 representatives as appropriate.

 Phone call or personal visit with UNEP Executive
 Director to explain U.S. strategy and concerns with
 IGC.
- 9/15 President submits ratification package to the Senate.

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OES/EHC

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Drafted: OES/EHC:PThomas

SEEHCB #3944 7/23/93

Cleared: OES/EHC:PBlakeburn
OES/EHC:RBlohm
L/OES:MChandler

File: Biodi
ratification
Strat.
Let's talk
when receive
Harwood's
written
analysis

Note to Eileen and Katie from David D. re: Biodiversity
July 2, 1993

Here is a report from David Harwood on the status of efforts regarding the biodiversity interpretive statement.

Earlier this week, the EC environment ministers adopted a statement on intellectual property that is very general but basically consistent with our position. Although Eileen, Tim Wirth, and others worked the EC representatives hard during the CSD meeting, they would not agree to adopt our statement, nor would they agree to supplement theirs with excerpts from ours.

Harwood recommends the following course of action:

- 1) That we make a virtue of necessity regarding the EC statement, which is generally supportive;
- 2) That we try to nail down a supportive statement from Japan, which was on-board 6 of our 8 points a couple of months ago and may be almost all there now;
- 3) That we make another hard run at the Swiss, who seem to regard our statement as insufficient protection and want a protocol or an amendment to the convention.
- 4) That we aim for wrapping this up by September, submitting the treaty to the Senate with our statement and what we have achieved from these countries.

Harwood will send over a written plan embodying this approach.

Harwood met with the Pharmaceutical Assn and someone from the biotech industry. He says they are not alarmed by this strategy. (Katie -- I have a call in to Richard Godown from the International Biotech Assn as you requested, but I have not spoken with him yet.)

When the Brits were in a couple of weeks ago, they emphasized the risk that a formal interpretive statement made with our instrument of ratification could inspire a counter-statement from the developing world (e.g., India). This may not be an issue; Harwood says no one made such a threat during the CSD meeting.

If this is not a problem, great, but I have a suggestion in case we should conclude otherwise. In lieu of an international interpretive statement, we could make a domestic one. That is, we could make our interpretive statement part of the Administration's submission to the Senate, as a purely domestic understanding between the President and Congress on the meaning of the treaty. This might be enough to satisfy the hometown business crowd.

Note to Katie from David Doniger and Clare Breidenich
Re: Biodiversity Convention
Date: June 11, 1993

*Further Update?
per notes*

Here's the information you requested on the status of the Biodiversity Convention in preparation of your afternoon interview. All information is from Peter Thomas at the State Department. I have attached a State Department Memo on other countries' reaction to the U.S. position.

Biodiversity Convention

- ◆ **170 Countries have signed the Convention.**
- ◆ **20 countries have ratified, including China, Canada and recently Japan.** The EC is committed to ratifying by the end of 1993.
- ◆ **The 1st Intergovernmental Committee Meeting** to discuss implementation issues will be held in **September**. (Since the Convention has not entered into force, this is not called a Conference of Parties.) Although no formal agenda has been set, **issues to be discussed** will probably include:
 - Finances and financial mechanism
 - Technology Transfer
 - Intellectual Property Rights
 - Biotechnology
 - Biosafety Protocol
- ◆ **UNEP Expert Meetings** held this past year addressed:
 - Priorities for Action on Conservation and Sustainable development
 - Economic Implications of Biodiversity Conservation and Sustainable Development
 - Technology transfer and financial issues
 - Biosafety Protocol
 - UNEP Guidelines for Country Studies of Biodiversity
 - The Expert Meetings only established issues and problem areas, no formal negotiations were held. With the exception of the Biosafety Protocol, the panels were non-controversial and consistent with U.S. objectives. The U.S. believes that the Biosafety panel did not give enough weight to the question of whether a Biosafety Protocol is actually warranted.

STATE DEPARTMENT (DRAFT)

BIODIVERSITY CONVENTION Status of Interpretive Statements

EC

Technology Transfer (EC has competence): The Environment Directorate does not appear to favor the U.S. approach and is considering only a general statement on IPR. (On a separate track, the Trade Directorate had prepared a much more detailed statement -- quite similar to our own -- but Environment Directorate is not inclined to use it as a basis for further discussion.)

Finance (Member States have competence): Little support for an interpretive statement. U.K. is pushing for a limited statement on funding.

The EC approach will be discussed and possibly solidified at an Environment Minister's meeting later this month. Time is of the essence if we wish to influence this process. Talking points for the EC and Member States are attached.

EC Member States

At EC's request, we have not dealt directly with Member States (with the exception of the U.K.). We understand, however, that:

- o U.K. does not favor a detailed interpretive statement on technology transfer; it does favor a limited statement on funding. We have exchanged papers with the U.K. and are inviting them to meet with us for further technical discussions later this month.
- o Germany is internally split on technology transfer; we are unsure of their commitment to a statement on funding.
- o France is generally sympathetic, but we are unsure of their degree of commitment to an interpretive statement.
- o Denmark is opposed to an interpretive statement.

We should immediately contact all Member States directly. We should urge their support for a more detailed statement on technology transfer (talking points are attached). Again, time is of the essence (see above).

Does
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will
lose?

Bad EC
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here, right?
- we are trying
to get something
different?
At the end of the
meeting an agreement
was made at all on this
point?

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an
interpretive
statement.
However
they are
not going
to?

Japan: Japan is prepared to issue a public statement supporting most aspects of our interpretive statement, but will not include the statement in its instrument of ratification. We are grateful for their support.

New Zealand: New Zealand has stated that it supports our efforts to develop an interpretive statement. We should continue to encourage them.

Switzerland: Switzerland, who should be our strongest supporter on technology transfer, replied that it prefers to work through UNEP and the Conference of the Parties; Switzerland initially favored an amendment or protocol to the Convention. We should press them strongly to support our interpretive statement.

Austria: Austria has informally indicated general sympathy for our concerns. We should press them strongly to support our interpretive statement.

Australia: Australia never replied to our proposed statements through diplomatic channels. We understand that they do not support the concept of an interpretive statement, although they may agree with us substantively on certain issues. We have heard reports, however, that Australia has sent our interpretive statement to NGOs and to certain EC member States and is lobbying against us. (When contacted by us concerning these reports, Australia denied leaking our statement). We should press Australia to be publicly supportive of our efforts, even if it cannot join our statement.

Canada: Canada replied that it does not support the concept of our interpretive statement nor does it agree with us substantively on all issues addressed in the statement. We should press Canada to be publicly supportive of our efforts, even if it cannot join our statement.

Biodiversity Convention: Interpretive Statements
Talking Points For EC and Member States

- We were pleased to learn that the EC intends to develop a statement with respect to intellectual property rights. This is a positive step and consistent with the importance we place on IPRs.
- However, we fear that others may attempt to interpret ambiguous provisions in the Convention in a way that undercuts are shared interests.
- We continue to believe that like-minded countries and the EC should issue interpretive statements that specifically address these provisions in our instruments of ratification.
- I would not want to see our ratification process jeopardized by what could be perceived to be a lack of international support for the interpretations of the Convention we seek to advance.
- I therefore urge you to work with us to develop an interpretive statement on the issues of technology transfer and funding and ask you to reconsider your current approach. We look forward to working with you to develop a mutually acceptable statement.

Ninee *Copy for Dan - neim 10/2/93*
NATIONAL RESEARCH COUNCIL

OFFICE OF INTERNATIONAL AFFAIRS
BOARD ON SCIENCE AND TECHNOLOGY FOR INTERNATIONAL DEVELOPMENT

DATE
file biddi

2101 CONSTITUTION AVENUE
WASHINGTON, D.C. 20418 USA
TELEPHONE: 202/334- 2692

TELEX: 353001 BOSTID WSH
Cable Address: NARECO
Fax No. 202/334-2784
202/334-2027
202/334-2660

August 13, 1993

Kathleen McGinty
Deputy Assistant to the President and
Director, Office of Environmental Policy
360 OEOB
The White House Office
Washington, DC 20501

Dear Katie:

Thanks so much for your letter to Brian Atwood. If it does the trick, and my program stays alive, I'll be spending the coming years bringing to light "tools" that you and others can employ for fixing up the global environment.

These tools are mainly to be found among the world's tens of thousands of unappreciated plants. Some we uncovered previously are already being used in constructing certain answers to deforestation, soil erosion, hunger, malnutrition, and other problems in at least 100 countries.

One of the most interesting is neem. In the 18 months since we published our book on this Indian tree, there have been developments that we barely dreamed of. One has to do with protecting women from HIV and other infections. Perhaps you saw last Saturday's *Post* article on an NIH initiative along these lines. What the *Post* didn't know is that an internationally respected Indian immunologist has found that extracts from neem seeds provide a localized immunization against bacteria, fungi, yeasts, sperm, embryos, and viruses. He indicates that HIV is among the viruses. Assuming all this works out in practice (a very big assumption at this point), women would be able to protect themselves against sexually transmitted infections, as well as pregnancy. And neem is a tree that grows well in the parts of the world hardest hit by AIDS and overpopulation.

In another angle of the burgeoning neem story, the EPA in June approved use of neem-based pesticides on American food crops. This is great news because everyone anticipated that the EPA would demand years of tests and trials, which would probably have doomed this promising new "biosafe" pesticide. It is also good news because one of the 200 pests neem can control is the whitefly that has ravaged vegetable and fruit crops in the South and Southwest. Neem products are deadly to such leaf-chewing pests, but they are benign to people, wildlife, and even beneficial insects. Moreover, they are natural products that come from trees, so their production will mean more forest cover for the world. The fact that the EPA bypassed the requirements normally demanded for synthetic pesticides, is an example of the "good" government the Vice President has been pushing for.

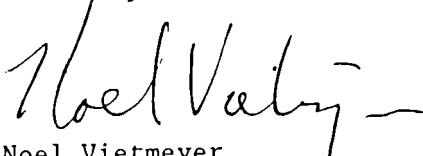
McGinty
August 13, 1993
Page 2

A copy of our neem book is attached. I could provide examples of other "tools" for solving global problems if you're interested.

So far I've not heard from Mr. Atwood, but I have put together an outline for a project that would boost my output and effectiveness. A copy is attached.

Again, thanks for your thoughtfulness and effort. I realize how much it must have interrupted your more pressing duties.

Sincerely,

A handwritten signature in dark ink, appearing to read "Noel Vietmeyer", followed by a horizontal line.

Noel Vietmeyer
Senior Program Officer

Enclosure

A small, dark, irregular ink smudge or stamp located at the bottom left of the page.

Solving Global Problems

Concept for a USAID Initiative
by Noel Vietmeyer

NATIONAL ACADEMY OF SCIENCES/NATIONAL RESEARCH COUNCIL
Office of International Affairs
Board on Science and Technology for International Development

August, 1993

Out of the 250,000 species of plants only 100 or so are intensively employed in farms and forests. Among the remainder are hundreds of remarkable species, including some that seem capable of helping overcome global problems such as deforestation, the loss of cropland, desertification, soil erosion, unsustainable land uses, and maybe even the buildup of atmospheric CO₂ and excessive population growth. These species are known to certain far-sighted scientists but not to policymakers. The result: the world is now facing the various environmental calamities without having the best tools for the job.

BOSTID, the National Research Council division dealing with development issues, proposes a new initiative to get these "tools for environmental improvement" into worldwide use. The main part of this activity will be to evaluate and publicize trees, shrubs, and herbaceous plants (as well as a few animals) that are particularly promising for solving global problems. However, an additional part of the effort will involve outreach activities with USAID missions, with developing-country decision makers, and with Washington policymakers. The result, then, will be the creation of new means for solving planetary problems as well as the follow-up that will get them into use quickly.

PROPOSED ACTIONS

The BOSTID initiative will have the following four parts.

(1) Tools for Global Recovery

In this, the most basic of the activities, BOSTID will make "technological audits" of the most promising of the plants. These assessments of a species's capabilities and constraints will start with our own voluminous documentation, built up during 23 years of studying underexploited crops. This will then be backed up by contacts with hundreds of scientists and other specialists around the world, by formal NRC panels, and by outside reviewers chosen to ensure "quality control."

The result will be a series of reliable and well-presented documents that will be lively, visionary, and presented in attractive formats. They will contain many photographs and other devices aimed to catch the eye of already overburdened administrators. The texts will be carefully crafted to make each book a catalyst for action—a motivational document that energizes the readers and provides them with sources for seed and other information with which they can put the books' messages to the test. In this way, these new tools for solving global problems will get known and exploited around the world.

(2) Outreach to USAID Missions

BOSTID will mount a campaign to help get the new trees and crops directly appreciated by USAID missions around the world. This will be done in part through organized mailings to the missions. At various times the mailings will include the latest BOSTID books, press kits (for the local media), separate information items, and perhaps appropriate planting materials. In addition, BOSTID will take small teams of specialists to countries where the mission requests help. The teams will brief local policymakers, scientists, PVOs, administrators, entrepreneurs, and others. In this way, the topics can be made a direct part of the mission initiatives.

(3) Outreach to the Third World

The vast bulk of the target audience cannot be reached through USAID missions. The unreachables include people who are in outlying regions, in countries where USAID has no presence, or in groups that are missed by the formal contacts. Accordingly, the books will be made available by mail. Some will be targeted directly to universities and libraries (including USIA libraries), some to U.S. embassies in the non-AID nations, and some to appropriate international organizations and professional societies. The vast bulk, however, will be sent out as individual copies upon request.

(4) Outreach to Washington Policymakers

In the Congress, the White House, the World Bank, and certain development-oriented groups, for example, there is usually much interest in the products of the BOSTID Innovation Program. To take advantage of this, we propose to institute a series of mailings ("BOSTIDgrams"), briefings, and luncheon seminars to keep the local power elite apprised of new discoveries and updated regarding the old ones.

RESULTS

Already, in its 23-year existence the BOSTID Innovation Program has publicized dozens of food plants, fast-growing trees, undervalued livestock species, as well as various techniques, technologies, and materials. The 40-odd books from this AID-sponsored effort have boosted or influenced resources that now contribute almost \$2 billion in annual economic benefit to the Third World. Several "BOSTID plants" are now used to help solve global problems. The two trees being most widely planted in the tropics got their international recognition via BOSTID. A grass that is proving amazingly successful at stopping soil erosion also came out of this program.

The new and expanded BOSTID Innovation Program, proposed here, will provide even greater results. The publicity given to a wealth of promising new trees, foods, soil-building crops, and sustainable livestock systems will spark worldwide initiatives aimed at planting trees, halting erosion, curing malnutrition, overcoming hunger, reducing rainforest destruction, and protecting biodiversity.

To achieve all that (and more) will be the program's unwavering goal, but along the way it will help forge links between USAID/W and its missions around the world as well as between the Agency and the Washington policymakers. Indeed, the BOSTID topics normally raise such interest and enthusiasm that this last connection will help boost AID's overall image in the Congress and executive branch. Moreover, because the topics usually engender much favorable press coverage, the program proposed here might do much to raise AID's image amongst the American public.

COST

Fully implementing this initiative, despite its impressive scale, will cost less than \$2 million a year. As with BOSTID's former innovation books, we fully anticipate the "bang-for-the-buck" to approach 1000 to 1. In other words, by 1999 or so, the initiatives of 1994 would have produced economic development approaching \$2 billion. The benefits to the environment and to humanitarian concerns would be in addition.

In order that we may plan ahead, and thereby be even more efficient, we request that the proposed activity be contracted for 5 years.

If the requested budget is deemed too high, the efforts could be scaled back, starting with the outreach efforts to the USAID missions and Washington policymakers. These are helpful to, but not vital for, getting the tools for global recovery into widespread use.

* * *

As a guide to what might be tackled, the initiatives for 1994 would include most or all of the following:

Power Flour. This cheap and easily made grain product turns boiled cereals liquid. Babies can then drink their corn, rice, wheat, cassava, potato, etc. Could be a big breakthrough in malnutrition because children too small or too weak to swallow solids could still fill their stomachs.

Restarting Rainforests. Mangium, an Australian rainforest tree, is proving that it can turn grassy wastelands into forests. In its shade the native rainforest species regenerate. This nitrogen-fixing tree legume also rejuvenates wornout acid soils so they can be used for crops again. Millions of acres could be recovered this way.

Lost Crops of Africa. While Africa starves, hundreds of its own native food plants are ignored by scientists and planners. BOSTID has begun a series to publicize the various grains, fruits, vegetables, and other food plants that could truly contribute to solving the world's worst hunger problem.

Tropical Fruits for Solving Global Problems. More than 3000 fruits can be found in the tropics. Some of them can provide much more than a tasty treat: they are outstanding for economic development, reforestation, city beautification, battling hunger and vitamin deficiencies, and even reducing rainforest destruction. Almost none is now getting research or recognition.

Sustainable Sustenance. The legume family is the third largest in the plant kingdom, and most of its 18,000 species fix nitrogen. They are nature's own soil builders. Dozens of edible legume species provide both food and fertility and deserve to be used much more widely now that the world's soils are wearing out through overuse. We will highlight the most promising.

* * *

MEMO TO DAVID FROM AIMÉE
RE: BIODIVERSITY STRATEGY FROM ROGER SCHLICKEISEN
DATE: AUGUST 6, 1993

I just spoke to Roger about biodiversity strategy, and he said that the most important thing that we can do right now is push hard for fast ratification of the Convention. He said that if we wait until next year, it will get caught up with ESA reauthorization, and go down due to mounting criticism by Foley and the wise-use people.

He said that he has been in ongoing touch with Baucus and Chaffee, and that they both will be supportive in the ratification process. The increasing uncertainty with the passage of treaties (i.e., NAFTA and the whole EIS question) makes this a priority. Regarding the question as to whether an EIS is required before ratification, no it is not: the Convention in and of itself has no impact on the current laws, and an EA will say so. He suggested we note the Climate Change Convention as a precedent, which Bush got passed with no opposition from congress.

He also suggested that-with no word out before hand-when the Senate ratifies the Convention, the President announce that he is signing an executive order calling for an interagency task force on coordination of implementation of the Convention (chaired by Babbitt). Roger and Defenders have written a draft of an executive order if we'd like to see it for ideas on where to start on a draft of our own.



CENTER FOR INTERNATIONAL ENVIRONMENTAL LAW

August 18, 1993

1621 Connecticut Avenue, NW
Suite 300
Washington, DC 20009-1076
Phone: 202-332-4840
Fax: 202-332-4865
E-Mail: ciclus@igc.org

The Honorable Rafe Pomerance
Deputy Assistant Secretary for Oceans and International
Environmental and Scientific Affairs
United States Department of State
Washington, D.C. 20520

Re: United States Interpretation and Ratification of the
Convention on Biological Diversity

Dear Mr. Pomerance:

I would like to thank you, Bob Blohm, Melinda Chandler, and Peter Thomas for arranging to meet on Friday, July 30 with me, David Beier of Genentech, Richard Mott of WWF, Gareth Porter of EESI, and Walt Reid of WRI, to discuss the United States's ratification of the Convention on Biological Diversity. I am writing to emphasize some of the points made in our meeting.

I. The United States Should Explore Alternatives to Filing the Interpretive Statement at the International Level

As I and others indicated in our meeting, there is concern in the environmental community about the State Department's proposal to file an interpretive statement with the ratified copy of the treaty when it is deposited with the United Nations. Filing the statement would have little significance as a matter of law. At the same time, it could create unnecessary political and diplomatic obstacles to international implementation of the Convention.

As a practical matter, circulating a draft interpretive statement among other OECD countries seems to have been useful for launching informal discussions on issues of concern to many industrialized countries. As a legal matter, however, filing this interpretive statement at the international level carries no weight. International law on treaty interpretation, while not a settled area of legal doctrine, establishes the principle that ambiguous treaty language is to be interpreted with reference to the context of its negotiation and adoption. In particular, Article 31 of the Vienna Convention on the Law of Treaties states that certain statements by governments can be used in interpretation, including statements made *at the time that treaty negotiators adopt a final text*. If the United States ratifies the treaty this fall, the interpretive statement would be issued as much as a year and a half after adoption of the final text. In itself, a statement issued so long after the treaty's adoption will have no legal significance.

August 19, 1993

Page 2

While achieving little, filing a statement poses significant risks for future negotiations on the Convention. The Convention's provisions on intellectual property rights (IPR) and technology transfer are ambiguous precisely because the issues were so contentious. Their general terms leave open a range of options for each country's implementation or for clarification at future conferences of the parties. The United States' statement, however, appears to state that all countries are legally obligated to select the same implementation options that the United States prefers. Such an approach risks alienating other signatories to the Convention. They might respond with their own "counter" interpretive statements establishing radically different positions, which could send negotiations back into the same kind of deadlock that led to the current text of the treaty.

In light of this, the United States should explore alternatives to the proposed interpretive statement. If it still seems necessary to file an interpretive statement, the United States might consider filing one that is cast in more general terms, which seems to be the European Community's choice.

However the administration decides to handle the interpretive statement, the United States should propose creative, flexible and positive implementation measures. By taking positive measures, the United States can demonstrate that it will carry out the Convention's obligations, allaying the fears raised by its circulation of the draft interpretive statement that it seeks to avoid its duties. The United States has the chance to lead, rather than block, a shift from confrontation to cooperation – a shift that will be necessary to implement the Convention's objectives of funding conservation, transferring technology, and sharing benefits of biodiversity.

For instance, the consortiums for "biodiversity prospecting" that will be funded by the Agency for International Development, in cooperation with other federal agencies, will develop much-needed practical experience on cooperation among the private sector, governments, scientists, and local communities to achieving the Convention's objectives. The principles for structuring those consortiums should in effect constitute specific implementation of Articles 15, 16 and 19.

II. The Administration Should Quickly Broaden Consultations on Interpretation and Implementation of the Convention

In exploring alternatives, it is very important that the United States widen the circle of organizations involved in discussions. A number of environmental groups would be interested in talking with the administration about more constructive approaches to the issues raised by the biotechnology, pharmaceutical, and agribusiness industries. Part of the concern about the interpretive statement is that few members of the environmental community have had the chance to comment on its development.

One important step will be for the State Department to hold an open meeting with BioNet members as soon as possible after Labor Day. Most members of BioNet support and applaud the administration's decision to sign the Convention, and are eager to cooperate

with the administration on speedy ratification and effective implementation. A meeting with a broad spectrum of interested environmental groups will be essential to preparation for ratification as well as for the October 11-15 inter-governmental meeting in Geneva. Like other participants in our meeting, I believe that it could also be useful to have another meeting including both environmental groups and industry representatives so that we can all communicate directly. As the interim coordinator of BioNet, I will be happy to help set up these meetings.

As we stressed at our meeting, environmental groups are very interested in reviewing drafts of documents to be transmitted to the Senate with the treaty, as well as statements that the administration proposes to file with the ratified copy of the treaty, as soon as possible. CIEL and other BioNet members look forward to offering comments, once drafts are available for review.

III. The Administration Should Articulate a Broader Policy for Conserving Biodiversity and Implementing the Convention

As we agreed in our meeting, one of the reasons the interpretive statement has received unfavorable publicity is that it is one of the administration's few pronouncements on the Convention. In such isolation, it suggests a narrow and obstructionist emphasis on corporate profits to the exclusion of the Convention's broader conservation goal. In other words, it seems all too consistent with the previous administration's world view.

Interpretation of the technology transfer provisions must, instead, be placed in context, as part of the president's comprehensive report to the Senate on the Convention. Thus, that report should include a policy statement, as well as interpretive language, that demonstrates that intellectual property is only one among many issues covered in the administration's overall policy for implementing a multifaceted agreement to conserve biodiversity.

Sincerely yours,

A handwritten signature in dark ink, appearing to be 'D. Downes', with a stylized, cursive script.

David Downes

cc: The Honorable Albert Gore, Jr., Vice-President of the United States
Ms. Katie McGinty, Director, White House Office on Environmental Policy
Timothy Wirth, Counsellor, Department of State
Melinda Chandler, Office of the Legal Advisor, Department of State
David Beier, Genentech
Richard Mott, WWF
Gareth Porter, EESI
Walt Reid, WRI
Biodiversity Action Network

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
002. fax cover sheet	re: GEF Biodiversity Framework [partial] (1 page)	08/11/1993	P3/b(3)

COLLECTION:

Clinton Presidential Records
Council on Environmental Quality
Kathleen "Katie" McGinty
OA/Box Number: 2895

FOLDER TITLE:

Biodiversity Meeting July 30, 1993/Strategy

2012-0769-F
rs2960

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P1 National Security Classified Information [(a)(1) of the PRA]
P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P3 Release would violate a Federal statute [(a)(3) of the PRA]
P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

b(1) National security classified information [(b)(1) of the FOIA]
b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]



U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
POLICY DIRECTORATE
OFFICE OF INTERNATIONAL DONOR PROGRAMS
WASHINGTON, D.C. 20523

FAX TRANSMITTAL

DATE: August 11, 1993

TO: Distribution

FROM: USAID/POL/IDP, TOM HOURIGAN, Ph.D.
Environmental Policy Analyst & GEF Coordinator

FAX #: (202) 647-5189

TELEPHONE: (202) 647-5963

NUMBER OF PAGES SENT INCLUDING THIS COVER SHEET: 6

MESSAGE: Attached are the draft comments on the GEF Biodiversity Framework prepared by the STAP and based on the meeting we had. I appologize for the time it took getting this together. Treasury would like to receive this by noon tomorrow, so I would appreciate any comments before then. Individual agency comments are attached:

Distribution:

P. Thomas	STATE	6-7351
L. Krishtalka	NSF	357-1191
	(b)(3)	
S. Tepp	DoE	586-0722
A. Christensen	OEP	456-2710
F. Grifo	NIH	(301) 402-2056
A. Paterson	NOAA	482-4307
C. Herman	EPA	260-4470
J. Koehler	EPA	260-4470
N. Katz	USED	477-2967

A handwritten signature in cursive script, appearing to read "Tom", located to the right of the distribution list.



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

MEMORANDUM

August 11, 1993

TO: Treasury, Michael Kaplan
FROM: POL/IDP, Thomas F. Hourigan

A handwritten signature in dark ink, appearing to read "T. F. Hourigan".

SUBJECT: Interagency Review of GEF *"Analytical Framework for Biodiversity"* prepared by STAP.

On August 4, 1993, the U.S. Agency for International Development (USAID) chaired an interagency meeting to discuss the draft *"Analytical Framework for Biodiversity"* prepared by the Scientific and Technical Advisory Panel (STAP) of the Global Environment Facility (GEF). Below is a compilation of general comments which were raised at this meeting or forwarded separately to me. In addition to these issues, individuals and Agencies forwarded specific comments which are attached.

In general there was agreement on the need for setting priorities and criteria which can guide the development and selection of future GEF biodiversity projects. The Pilot GEF funded an ad hoc collection of biodiversity projects, with insufficient attention to their fit into local or global conservation priorities. The STAP is to be congratulated for taking a step in this direction in the draft framework. The GEF must, however, be flexible and pragmatic in its approach. High quality or innovative interventions should be accommodated, even if they do not fit in a strategic framework. Several major concerns were raised about the current draft:

Major Points:

1) Projects vs. other forms of assistance:

The stated goal of the framework is to provide: "a framework for selecting biodiversity conservation projects funded by the GEF". Throughout, the implication is that the GEF will continue to fund primarily large projects as has been the case for the pilot phase. This may not be the best use of GEF resources in biodiversity conservation. There is a need to get away from the "project" mentality in order to support capacity building over the long haul.

Establishing Trust or Endowment Funds can provide low levels of funds to local groups for long periods of time. These should ideally be based on a country framework that can fund well-designed interventions as they are designed. The trust funds for Peru and Bhutan, as well as activities by other donors and NGOs may provide models. The funds should have a public/private board and an open and transparent decision process and adequate monitoring and financial accountability.

2) Capacity Building and Local Participation:

There should be greater recognition of the need for training/education of host country scientists, etc. -- the human resources needed to devise and implement better conservation efforts. This should be a part of any national assessments done in this area. For example, the framework cites the need for correcting economic distortions that adversely affect biodiversity, but doesn't recognize the lack of economists that can do it. And there are many other areas such as training of parataxonomists that are not mentioned.

Local participation is of overwhelming importance in biodiversity conservation. Degree of local involvement is insufficiently dealt with, as well as practical mechanisms for involving local communities. This often requires technical assistance and small amounts of money delivered over longer periods of time.

3) Emphasis on "protected areas":

There was consensus that the GEF should not concentrate exclusively on protected areas if it wishes to be effective in the long run. This is acknowledged to a certain extent in the document. Most biodiversity occurs outside of protected area, and that is where significant interventions are particularly needed.

The mere establishment of protected areas has not "secured significant gains", nor does it hold promise to achieve "maximum gain" in biodiversity conservation, given the socio-economic, institutional and political realities affecting most of the globe. Thus, it is neither realistic nor cost effective to place almost all our effort in protected areas. The GEF rationale and criteria need to explicitly recognize and incorporate any activities which reduce pressure on remaining wildlands. This might include activities supportive of extractive reserve management, sustainable timber exploitation, plantation establishment, crop intensification, alternatives to swidden etc. The framework recognizes that protected areas and other efforts to maintain habitat are often undermined by macro and sectoral policy distortions and market failures (indirect causes of biodiversity loss) which encourage encroachment, as well as non-sustainable use and habitat conversion (direct causes). The GEF must be supportive of policy interventions that may not have a direct link to biodiversity conservation but which will ultimately have a much greater impact on its success and sustainability.

4) Incremental costs:

This appeared to be the issue which caused the most concern in the document. The concept of agreed incremental costs to achieve global environmental benefits has been accepted by the Participants of the GEF, but its application to biodiversity is vague at best.

- 3 -

4) Incremental costs (cont.):

Goal: The GEF should focus on the goal of preserving biological diversity. If agreement on "incremental cost" issues can be achieved, these should be used primarily to determine the relative contribution of GEF funding (in addition to local investment or other assistance flows) to the chosen project as a whole. Attempts at the quantification of incremental costs, or separation of national vs. global benefits provide neither good selection criteria nor useful measures of project worth. Incremental costs should not drive the process.

Nature of Benefits: The discussion does a fairly good job at listing the various categories of benefits from biodiversity conservation. Global benefits are acknowledged by the Biodiversity Convention. If we take a biodiversity component of GEF as a given, we can spend less time in fruitless justification. However, biodiversity, and the habitats and ecosystems that support it, are overwhelmingly a local and national benefit. Global benefits will only be obtained when national benefits are recognized and realized. Therefore, for the purposes of project selection under the framework, the goal should be to maximize total benefits to biodiversity conservation.

Costs are a lot easier to calculate than the benefits which presumably would include the foregone externalities of habitat conversion. Despite being a low priority for many developing nations, quantitative and economic natural resource accounting methods are still undeveloped, complex, controversial and based on a slew of assumptions and moreover, extremely costly to even carry out. Furthermore, in giving host country nations the responsibility of conducting such analyses (given they had the capital, expertise and time to do so), there is a lot of leeway for political motivation and special interest to be woven into the process.

Methodological issues: The economic cost/benefit analyses as presented in the draft Framework raise certain methodological problems:

- a) **Time scales:** As noted in the comments from NSF, costs and benefits are meaningless unless they are presented in the context of time; e.g. potential global benefits from biodiversity may not materialize for very long periods (e.g. drug pharmaceutical development is generally at least a 12 year process).
- b) **Lost opportunity costs:** Including lost opportunity costs as a GEF reimbursable item (p. 84) will create incentives for countries overestimate these costs, or worse still, invest in the exploitation of these resources in hopes of "raising the ante" for biodiversity conservation.

- 4 -

4) Incremental costs (cont.):

- c) **Baselines:** In biodiversity conservation, even more so than in other areas of the GEF, the critical baseline for analyzing project activities is: what are the current situation and practices. This will lead to much more useful and realistic interventions than analyses based on an economic optimum of what a perfect country should do on their own. Countries which fail to adequately account for resource degradation or make the expenditures necessary to stem the tide are often the countries that need help the most. Barriers to optimal economic decisions include international and domestic market and policy failure, and lack of education and capacity. Addressing these costs would appear to be valid "incremental costs" of reducing biodiversity erosion.
- d) **Analysis of incremental costs:** One useful approach would be to test incremental cost formulations on a selection of existing proposals to see if they are useful or even very helpful.

5) Marine and aquatic biodiversity:

The document does not deal with marine biodiversity and gives only a cursory nod to freshwater systems. In discussing major "biomes" it just gives terrestrial biomes. Clearly this is one of the major weaknesses of the document.

This raises the issue of whether the STAP and GEF plan to approach marine and freshwater biodiversity exclusively under International waters. While there are overlaps, the global rationale for conserving biodiversity differs from the rationale for most other international waters issues (i.e. biodiversity does not depend on "transnational" effects for its global significance.) From this point of view, it might be more reasonable to analyze aquatic and marine biodiversity in the same manner as terrestrial biodiversity, rather than exclusively under International Waters.

6) Ecosystem approach:

Whereas the ecosystem is an important unit for strategic planning, a project actually accomplishing something at that level is unlikely. Also, equating different neotropical rain forests (e.g. Ecuador coastal, Amazon, and Brazil Atlantic) would be comparing apples and oranges.

- 5 -

7) Priority setting:

There was general, though not universal acceptance of the need for the GEF to set priorities which will assist in the analysis of projects across countries. This will help the GEF to become more than just a collection of individual projects. This is clearly controversial, and all the more reason for assuring that there be a quality control step in determining project choice.

On the other hand, it is critical, that priorities also be set within countries. Countries should set their own priorities, obviously with scientific assistance if requested, but always with local public participation. In particular, it is necessary to set biodiversity activities within National Environmental Action Plans or other national frameworks that also include policies and sectoral constraints. The National Biodiversity Strategies and Action Plans can play an important role, but should also fit into the larger policy framework.

8) Ex-situ Conservation:

Ex-situ conservation (botanical gardens, zoos, seed banks) is included as a priority. There need to be some priorities among those. In most cases, support for *in-situ* conservation of non-domesticated species, particularly conservation of their habitats, will be more cost effective than *ex-situ* conservation. Supporting zoos, for example, would probably be a very low priority vs. habitats. Seed banks can play a very important role; the priority should be wild relatives and land races of important food crops and encouraging farmers to maintain traditional species *in-situ*. Forest gardens have a long history on all continents and perhaps deserve special status.

Attachments: Individual Agency Comments

Drafted:T. Hourigan:USAID/POL/IDP:(202) 647-5963



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

MEMORANDUM

July 30, 1993

TO: Biodiversity Working Group

FROM: POL/IDP, Thomas F. Hourigan *Tom Hourigan*

SUBJECT: U.S. Agency Review of the Global Environment Facility (GEF) Analytical Framework for Biodiversity.

The Treasury Department has asked me to organize a review of the May 1993 draft of the Global Environment Facility (GEF) Analytical Framework for Biodiversity. This document was prepared by the GEF Scientific and Technical Advisory Panel as "a framework for selecting biodiversity conservation projects funded by the GEF." This is an opportunity for US Agencies to contribute substantively to the focus of the restructured GEF in the important area of biodiversity conservation. The GEF will be the interim operating entity of the financial mechanism for the Biodiversity Convention, so these documents will have an important influence on what types of projects are funded.

A meeting will be held next week to discuss this framework:

Wednesday, August 4, 1993
10:00 AM
STATE Department
Rm 6941 NS

If you cannot make it to the meeting, but would like to contribute written comments, please do so by COB Friday, August 6, 1993 (FAX: (202) 647-5963). Thank you for your assistance in this matter. Please feel free to contact me if you have any questions (Tel: 647-5963).

get copy of comments.

5189
or
call
7-0600
To clear in

**A PROPOSED ELEMENT FOR A
U.S. INTERNATIONAL BIODIVERSITY POLICY**

- Develop an international "Coral Seas" initiative to promote the stewardship and sustainable development of marine and coastal ecosystems, in particular, coral reef and related ecosystems (sea grasses, mangroves, etc.) These ecosystems are a key resource for tropical developing countries: the extraordinarily high species diversity on coral reefs comparable with tropical forests, species habitat, nature tourism/foreign exchange earnings, and maintenance of shoreline/terrestrial integrity.

Through a partnership of its scientific, resource management and technical assistance agencies, the U.S. would help launch an international initiative incorporating marine/coastal biodiversity assessment, ecosystem structure and function, sustainable management/technical assistance, and training.

In tropical developing countries, coastal and marine reserves can serve as important mechanisms for preserving marine biodiversity and protecting fragile, but vital, coastal habitats. Technical assistance and training to assess and preserve biological diversity, mitigate negative human impacts and train managers for sustainable development will be a core element of the initiative. The establishment and management of marine and coastal parks, sanctuaries and reserves should be an integral component of the effective management of coastal systems and protection of marine biodiversity.

The goal is to develop a global, scientifically based, coordinated network would evolve, supported by such UN and other agencies as UNEP, IOC, UNDP, GEF, IUCN, etc. and national efforts, to assemble comparable environmental and biological data sets from nearshore marine environments throughout the tropics as a foundation of sustainable management of biodiversity. Standardized and intercalibrated data are essential to distinguish among various classes of perturbations, such as natural climatic variability, global trends such as warming and increased UV radiation, and local or regional anthropogenic effects such as nutrification, pollution and sedimentation.

The U.S. could propose beginning with a regional focus in the Caribbean (or South Pacific) region in which it already has considerable political, scientific, environmental and technical investments. Moreover, existing efforts could be leveraged to create a strong regional program.

Elements of the "Coral Seas" initiative include:

- regional/national pilot demonstration projects providing technical assistance and training, e.g., in the Caribbean;

- regionally/globally coordinated monitoring network involving national managers/scientists so they can exchange physical, biological and socio-economic data with regional and global data bases;
- identification of existing marine protected areas as sites for a regional network of long-term monitoring; and
- identification of hotspots for immediate management action.

International Biodiversity and Biological Research Initiatives

A. Sponsor the planning for and implementation of a number of intensive biotic inventories (ATBIs - All Taxa Biotic Inventories) at international sites, both marine and terrestrial. The conservation and sustainable use of biological diversity begins with knowing the full extent of that diversity. These intensive inventories, also called ATBIs, will determine the species composition and distribution at a site (typically about 50-100 sq. km), their natural history, their importance in ecosystem function, their use in monitoring change, etc. The site of the ATBI will be a permanent national site for sustainable uses by all sectors of the community. ATBIs will also provide the platform for developing methodologies in biodiversity research, and for training professionals and paraprofessionals in all aspects of gathering, studying, managing and using biodiversity information. ATBIs are thus major enterprises in biodiversity R&D and, as such, are effective global pilot demonstration projects for technology development and transfer involving sustainable use of biodiversity. International interest in ATBIs is high, and two are currently in the planning stage in Norway and Costa Rica.

B. (1) Electronic capture and sharing of specimen-based international biotic survey data contained in U.S. institutions (museums and herbaria). (2) Provide INTERNET access to major biodiversity institutions in developing countries. A great deal of information about the world's biota is contained in the nation's free-standing and university natural history museums and herbaria. This information, the result of almost 200 years of biotic survey and inventory activity, includes tens of millions of animal and plant specimens and their associated data. This primary biotic information is a logical and fundamental starting point for implementing extensive international biotic surveys. It establishes the baseline record of what is known about the biodiversity of target countries and identifies what is not (gaps), thereby preventing costly duplication and allowing strategic planning along taxonomic and geographic lines. Much of this specimen-based information is not easily retrievable because it has not yet been captured in electronic databases. Computerization and sharing of the data is a more cost effective investment than surveying these international regions anew. At the same time, it will also greatly improve the collection and information management capabilities of the U.S. institutions. The electronic databases will be immediate tools for research, economic, educational and conservation purposes in the U.S. and internationally. Providing INTERNET access to developing-country biodiversity institutions will allow and promote the dissemination, sharing, use and updating of this biotic information.

There are two linkages to this activity. First, the proposed National Biodiversity Center (Initiative #1) can foster and help coordinate such a computerization effort. Second, this activity will set an example for biodiversity institutions in other developed countries with vast holdings of international specimens, who may implement a similar plan to computerize and "repatriate" biodiversity information.

C. Develop a program to help conserve, manage and improve biotic collections and the associated information in biodiversity institutions in developing countries. Biodiversity activities, such as intensive and extensive biotic surveys, will generate large collections of specimens and associated data. As a linkage to Initiative #3 (Support for National Biological Resource Centers), the United States will provide financial and technical resources to help house, curate and manage the collections in developing-country institutions, as well as manage and disseminate the complex information associated with the specimens.

MEMO TO DAVID FROM AIMEE

RE: BIODIVERSITY FORUM, hosted by Defenders of Wildlife and
Senators Baucus and Chafee.

WHEN: July 20, 1993

David--

this is a brief summary of what was discussed at the forum.

The forum on biodiversity presented an overall view of the issue of species loss and how we can work to protect biodiversity. It started with a speech by Professor Wilson and finished with a briefing on the Defenders of Wildlife's research on public opinion and biodiversity.

Professor Wilson's statement recapped:

There are two categories of environmental problems: the deterioration of physical environment, and the loss of biodiversity. 1.4 million species have been identified and given scientific names while anywhere from 10 to 100 million species exist. One fifth of all bird species have disappeared and 11% of the remaining known species are extinct.

There were five great extinctions in 500 million years. The last one took place 65 million years ago with the end of the mesozoic era. It took ten million years to create as diverse species as there were before. The extinctions were caused by natural occurrences, but we are causing this one ourselves, artificially.

Dr. Schlickeisen of Defenders described their research efforts, why they funded them, and the importance of biodiversity:

New policies are needed, especially funding for research and land acquisition. Trade agreements and U.S. foreign aid need to deal with environmental concerns. We need to be making data-based decisions, not politically-based decisions.

Although no one in the research sample listed biodiversity as the main environmental problem, when they were explained exactly what would happen with the loss of biodiversity, (such as ecosystem destruction, inability to perform ecological functions, food shortages, and the fact that the next generation would be faced with more weeds, insects and deserts than songbirds, elephants and wetlands), they were willing to make some fairly fundamental adaptations to life in order to prevent biodiversity loss. (see the Defenders packet).

The conclusions drawn by the forum were that biodiversity

loss is the most threatening environmental issue to date mostly because it is irreversible. Although the vast majority of people do not know what biodiversity is, and in fact have not even heard of it, once they are educated on the consequences of biodiversity loss, they are willing to change their lives to steward the planet more responsibly for coming generations. The morality and health arguments for biodiversity protection were far more powerful than the economic ones.

We need an expanded Land and Water Conservation Fund (the government agency set up for domestic protection and acquisition of land and ecosystems), as well as continued research on the status of species here in the United States (see Schlickeisen's article and mention of Babbitt's establishment of the National Biological Survey which will develop a comprehensive ecosystem database).

Please see the enclosed articles by E.O. Wilson and Roger Schlickeisen.

MEMO TO DAVID FROM AIMÉE

RE: GEF/BIODIVERSITY MEETING WITH TOM HOURIGAN/AID.

DATE: AUGUST 4, 1993

DAVID--this meeting was one of the most substantive meetings I have been to yet, with much discussion on the purpose of the GEF, not just the structure. The meeting was intended to be a discussion of the STAP Analytical Framework for Biodiversity, designed to help the GEF decide which projects to fund. But mainly we decided that the draft document was too narrow and superficial a treatment of the GEF's mandate for biodiversity. It did not allow for enough flexibility in the kinds of projects to be funded. So we turned to our ideas of the types of projects that should be attempted, and the priorities of the projects.

There was much talk of the limits of the term "incremental cost." Can that, for example, include funding of entire projects which otherwise would not be funded? There is a need to get away from the calculations aspect, and to get more to what needs to be done, and how to do it best. We worried about the implications of the term, and the incentive for countries to exaggerate the losses of not doing the unsustainable alternative, (or the underexaggeration of the costs of it), and the costs of doing the sustainable project, just to get as much funding as possible. It was also mentioned that countries would not necessarily pay the costs up to those of the GEF, but that that would likely be funded by other multilateral or bilateral mechanisms.

Overall there are going to be some hard decisions to be made over which biodiversity projects and countries should be funded. We need to not impose GEF funding and projects on countries, but let the proposals come from them. In addition, it should be stressed that often global benefits are also beneficial for the country, and not just a cost.

Additional project types to consider:

- training programs for biologists to develop human resources;
- ways to improve the institutional resources;
- not necessarily focus on the "hotspots" exclusively, (as the developing countries objected to that format at Rio), but also at other, more broad country projects--this will be difficult because it is not politically correct: see Ecuador project of wood plantations which failed because it was not directly related to protected areas, i.e. "hotspots" protection. These types of projects should remain an option as ways to take pressure off of the protected resources.

We discussed structure briefly, just reiterating that the Secretariat and analysis process will be independent of the World Bank, with projects decided upon on the basis of their merit, not as band-aids for Bank projects that would otherwise not go through. The UNDP small grant facility should be used, however they may be too small? The projects have to be small and medium-grant based so that countries can handle the implementation on a short- and long-term basis.

STAP Analytical Framework for Biodiversity

EXECUTIVE SUMMARY

This document provides a framework for selecting biodiversity conservation projects funded by the Global Environment Facility. It has been formulated at a time when the GEF is undergoing process of restructuring which may modify some of its objectives and internal procedures, and before the Parties to the Convention on Biological Diversity have met. Therefore, this document, and the concepts contained within it, will continue to evolve and be refined over time. The use of the Framework, coupled with the best available knowledge, will increase the chances of success of projects, and, as knowledge on the subject increases, the process of identifying priorities for conservation and sustainable use will become more accurate.

Loss of Global Biodiversity

Global biodiversity is being lost at an accelerated rate, at least one hundred times, and possibly one thousand times, as fast as the natural background rate. This accelerated rate of extinction is primarily caused by human intervention.

Causes of Loss

STAP distinguishes between two principal causes of biodiversity loss: **direct causes** and **indirect causes**. The GEF will fund projects which address both. Broad consensus exists on the direct causes of biodiversity loss, and these are usually easy to identify at the local level. For example, loss of habitat or species may be caused by over-exploitation, encroachment, development activities, and disasters. However, the indirect causes, which give rise to the direct causes, are more complex and more controversial. They arise from continuing population growth, high levels of energy and materials consumption, and the failure of national and international economic systems to account adequately for the true value of biodiversity.

Incremental Costs

The present mandate of the GEF requires that it intervene only where significant global benefits are likely to result. In its Pilot Phase and in its operational phase under the Convention on Biological Diversity, the extent of funding will be limited to the "incremental cost". One definition of incremental cost is that it is, in the simplest case, the difference between the host nation's costs of protecting biodiversity and its own benefits from the intervention. It is the amount of money the GEF would have to fund to make the conservation or sustainable use project preferable from the host nation's standpoint. The GEF then has to determine whether or not the global benefits from conservation exceed the incremental cost. The Convention on Biological Diversity does not refer to concepts of global and national benefit, nor does it define

STAP Analytical Framework for Biodiversity

incremental cost. The interpretation of the Convention may therefore differ from the current interpretation, and work will be required to establish a common meaning.

Cost Effectiveness

As the GEF enters its operational phase, a major objective is to balance costs with effectiveness in order to maximize the benefits obtained from the funds available. Measuring the effectiveness is very difficult as there is still a degree of uncertainty surrounding many aspects of biodiversity. For example, the total number of species which exist on earth are not known, (knowledge of invertebrate species is particularly inadequate); the relationship between habitat loss and species extinction rates, and therefore the critical thresholds of ecosystems for species conservation, is not fully understood. Despite these uncertainties, however, it is possible to identify some indicators of importance, cost, feasibility of intervention, and degree of threat. To be cost-effective, interventions will need to focus on:

- ▲ feasible projects, i.e. projects that have a reasonable chance of succeeding;
- ▲ important outcomes, i.e. projects that secure significant gains in biodiversity conservation;
- ▲ least cost measures;
- ▲ areas where the threat to biodiversity is significant but containable and, ideally, reversible.

Further Development of the Guidelines

The nature of the guidelines to be developed in the operational phase will continue to evolve, and within them the concept of incremental cost will be refined. This process will continue as the Convention on Biological Diversity is ratified, protocols adopted and the Conference of the Parties meet. The work of the GEF will evolve in parallel with the development, strengthening, adoption and implementation of the Convention. In this way, the two can work in tandem to find a balance between national interests and global imperatives, so that GEF becomes a powerful and effective tool in assisting the conservation of global biodiversity.

STAP Analytical Framework for Biodiversity

3.1 The Purpose of the Analytical Framework

The GEF, acting as the financial mechanism of the Convention on Biological Diversity, has as its aim the maximum gain in biodiversity conservation given the funds available. This suggests an operational criterion of "cost-effectiveness" balanced by a distribution of projects to ensure maximum learning about effective interventions and some geographic equity. To be cost-effective, interventions will need to focus on:

- ▲ feasible projects, i.e. projects that have a reasonable chance of succeeding;
- ▲ important outcomes, i.e. projects that secure significant gains in biodiversity conservation;
- ▲ least cost measures;
- ▲ areas where the threat to biodiversity is significant but containable and, ideally, reversible.

3.2 Scientific Basis for Conservation of Biodiversity

3.2.1 Definition of Biodiversity

The Convention on Biological Diversity defines biodiversity as:

"the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".

The term "biodiversity" is a contraction of "biological diversity" meaning the whole variety of life on earth. Biodiversity is generally defined in terms of genes, species and ecosystems.

Genetic diversity is the sum total of genetic information contained in the genes of individuals of plants, animals and microorganisms that inhabit the world. It is the heritable variation within and between populations of single species. Ultimately this variety resides in the sequence of the genetic code.

Species diversity refers to the variety of living organisms within a region. Species are the principal focus of evolutionary mechanisms and, theoretically at least, species can be counted. However, a simple count of species only partially describes biodiversity since some species are more unique than others and thereby make a bigger contribution to global diversity. Species are

STAP Analytical Framework for Biodiversity

aggregated taxonomically into higher groups, such as families, orders and phyla. This taxonomic diversity must also be recognized and assessed.

Ecosystem diversity, the hardest to measure, relates to the variety of habitats, biotic communities and ecological processes in the biosphere, as well as to the diversity within ecosystems in terms of site differences and the variety in ecological processes. Ecosystems are a combination of the communities of animals, plants and microorganisms with their non-living environment. Ecosystems are the basic unit of management for conservation purposes as species can be conserved through careful management of the ecosystem of which they are a part. However, endangered species may require detailed recovery plans that do more than protect ecosystem structure.

Landscape diversity, defined as a mosaic of ecosystems, could be added as the highest level.

Complex interactions of climate, geology, soil types, water resources, geographic isolation, and latitude have determined the course of evolution and have led to the present great biodiversity. These factors still determine what types of plant and animal life thrive in different places and determine their genetic, species and ecosystem diversity.

3.2.2 Functions of Biodiversity

Biodiversity plays a crucial role in ensuring the sustainability of several environmental functions. These functions comprise, *inter alia*, regulatory functions and production functions. All species may play some part in maintaining basic ecological processes such as the water cycle, the carbon cycle, and nutrient cycles. Examples include carbon sequestration by trees, decomposition of wood by a wide range of microorganisms and insects, and the role of forests in stabilizing climate and runoff.

The production functions of biodiversity are extremely varied. They include use of a wide variety of plants for crops, fodder, condiments, medicines, genetic resources, and timber products. Wild progenitors of the world's 15-20 major economic crops and the 200 species domesticated for food are concentrated in only a dozen or so areas of the world -- the so-called *Navilov* centers. It is vital to maintain this diversity for future breeding purposes. There are over 21,000 plants recorded as having medicinal uses and around 80% of the population in the tropics rely on them. Major drugs to fight cancer and heart disease, relieve pain, and provide contraceptive protection have been developed from wild species. Others will surely follow.

also:
tourism
scientific entities to study for advancement of science
evolutionary genetic function

STAP Analytical Framework for Biodiversity

3.2.3 State of Knowledge on Biodiversity

3.2.3.1 Description of Biodiversity

The description of biodiversity focuses on species and ecosystems. The number of species on earth is generally estimated to be between 10 and 50 million, of which only about 1.4 million have been named and described. The number of known species varies greatly between taxonomic groups, from several thousands of species in birds, mammals, amphibians and reptiles, to tens of thousands in fungi and algae, to more than 250,000 in flowering plants, and 750,000 in insects.

The world can be divided into major ecological regions, called "biomes". Generally, 14 major biomes are recognized: tundra communities and barren arctic deserts; temperate needle forests or woodlands; temperate broad-leaf forests or woodlands and sub-polar deciduous thickets; temperate grasslands; cold winter (continental) deserts and semi-deserts; evergreen sclerophyllous forests, scrub or woodlands; tropical grasslands and savanna; warm deserts and semi deserts; tropical dry or deciduous forests (including monsoon forests) or woodlands; subtropical and temperate rain forests or woodlands; tropical humid forests, mixed mountain and highland systems with complex zonation; mixed island systems; river systems, and lake systems.

These biomes are distributed across eight biogeographical realms: the neoarctic, the neotropical, the palaearctic, the afrotropical, the indomalayan, the australian, the oceanian and the antarctic. They are distributed across five climatic regions: Polar cooler (Ice cap and tundra), cooler humid (sub-arctic and continental), warmer humid (marine, wet coast, humid subtropical and Mediterranean), dry (steppe and desert), and tropical humid (savanna and rain forest).

Why is this section here related? - no marine realm.

3.2.3.2 Biodiversity Loss

No precise estimate can be made of the number of species that are becoming extinct for two principal reasons: (i) the number of species originally present is unknown, and (ii) there is inadequate information about the rates of loss of habitats. However, there can be no doubt that extinction is proceeding far faster than at any other time in history. The rapid destruction of the world's most diverse ecosystems, especially in the tropics, has led most experts to conclude that perhaps a quarter of the earth's total biological diversity is at serious risk of extinction during the next 20-30 years (Raven, 1988). Current rates of extinction among birds and mammals are perhaps 100 to 10,000 times what they would be in unperturbed nature. Using the species area curve which predicts species loss as a function of habitat destruction and species richness, the destruction of 90 percent of an area will lead to the extinction of roughly 50 percent of its species. In theory, if deforestation were to continue until all forests except those legally protected from harvesting are eliminated, 66 percent of all the world's plant species and 69 percent of all the bird species would be lost. If current trends continue, roughly 5 to 10 percent

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of the world's species will be lost per decade over the next quarter century. Other biomes are also experiencing severe degradation. Coastal wetlands are being extensively modified not only in developing countries, but in the developed world as well. For example, the Philippines lost 67 percent (300,000 ha) of its mangroves between 1920 and 1980; in the US and Europe an estimated 50 to 80 percent of the wetlands have been lost.

3.2.3.3 *Limitation of the State of Knowledge and its Application*

A serious limitation in the scientific knowledge of biodiversity is the incomplete description of biodiversity at the species level. Information is weakest in inter-tropical zones, which has the richest biodiversity. Whereas 90% of all vertebrates are probably already known, only about 10% of insects have so far been described. The plant world lies in between: over 80% of higher plants have probably already been described.

The framework for project formulation is also hampered by the limited capacity of data-gatherers to mobilize existing information. Invaluable information resources exist in public museums, herbaria and libraries. To combine all of this knowledge and focus it on the task of priority-setting for investments is a significant problem. Even when the data are compiled for this purpose, there remains the important task of extracting the data relevant to a particular country or site, and making them available to developing countries. Although the technology to select, mobilize and transfer information globally already exists, there are serious limitations to the application of this technology, particularly in developing countries.

In spite of all the drawbacks mentioned above, there is sufficient general knowledge about and insight into the nature and distribution of biodiversity, the most important areas to be conserved, and the major threats and vulnerabilities, to identify immediate priorities.

can?
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data
bases for
project
- how much
training
needed?
Biodiv
Surveys

3.3 Causes of Biodiversity Loss

An appreciation of the factors which cause biodiversity loss is crucial to understanding the IEF's contribution to biodiversity conservation. Interventions that do not address causes will ultimately be "cosmetic" and only temporarily successful. A distinction can be made between indirect and direct causes.

3.3.1 Indirect Causes

The high rate of human population growth and natural resource consumption. As population has increased and new technologies have developed, humanity has appropriated an ever increasing percentage of the earth's resources. People consume, divert or destroy an estimated 39 percent of the products of photosynthesis: the fundamental source of energy

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available for virtually all living systems. Critical environmental resources and functioning ecosystems are now under stress. Emissions of pollutants are already overtaxing the tolerance of ecosystems and the dispersal capacity of the atmosphere. Ozone layer depletion, acid rain, and air pollution all contribute to the erosion of biological diversity today. Excessive consumption of minerals and other non-renewable resources, as well as the over-use and waste of energy, especially in industrialized countries aggravate these problems. Moreover, people compete with other species for space on land and in coastal and other waters. This trend not only contributes to the rapid loss of biodiversity, but also strains the planet's carrying capacity and is ultimately unsustainable.

Failures of the socio-economic system. The world's economies, whether they are planned, managed, or free-market systems, all fail to give adequate weight to the importance of biodiversity. These failings arise from:

- ▲ *information failure:* there is simply inadequately information about the functions of ecological systems and the damage done to those functions by everyday economic activity. Therefore, improving education, the flow of information, and institutional capacity are fundamental to conserving the world's biodiversity, a feature reflected in the GEF's lending for capacity-building;
- ▲ *market failure:* free markets contain no in-built incentives to take care of "downstream" or "external" effects. Land-use will frequently be determined by the search for maximum profits without regard for the effects on biodiversity. This "market failure" can be corrected by the appropriate adoption of environmental standards, pollution taxes, and so on;
- ▲ *failures of intervention:* governments intervene in the working of markets for many reasons, but the impact on biodiversity is not often appreciated. Subsidies to logging companies' forest conversion, for example, have been an important factor in some of the world's deforestation. Under-pricing of energy and water has contributed to excessive use, and hence pollution. Agricultural price controls have limited farmers' incomes in many countries, preventing them from investing in soil conservation and tree growing. In other countries, farmers' incomes have been kept artificially high through price guarantees, which have encouraged over-intensive farming. The motives for such interventions may be sound, but the degree of intervention is excessive due to the neglect of the resulting costs. Where the economic rationale for the intervention is also suspect, wholesale gains can be obtained by

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its removal -- the so-called "win-win" context, in which measures can be undertaken that benefit the economy and biodiversity conservation.

- ▲ *global appropriations failure*: recognition of the world as truly one major interconnected ecosystem has increased appreciation that actions in one area affect the well-being and ecosystem health elsewhere through the medium of the "global commons". Deforestation and fossil fuel burning contribute to global warming affecting people far removed from the source of the emission. Conversely, those who conserve their forests and energy yield a benefit to the rest of the world.⁶ But at the same time they receive no benefit in cash or in kind for this service to the world at large. The services of the tropical forest, for example, go *unappropriated*. The GEF can be regarded as one of the mechanisms for making payments for these services and for correcting this global appropriations failure.

The steadily narrowing spectrum of traded products from agriculture, forestry, and fisheries. The global exchange economy that has emerged over the past century and now dominates all sectors has increased interdependence and uniformity of products around the world. In many sectors, especially in agriculture, the economies of large scale production have resulted in increased specialization in a few crops. This leads to a decline in the number of crop species, and retards the co-evolution of species and previously diverse and robust agricultural systems. The use of pesticides, fertilizers and genetically engineered high-yielding varieties to maximize production and profits exacerbates the decline in agricultural diversity. The forestry sector is suffering from the same problems: diverse forest ecosystems are being destroyed and replaced by fast growing single species plantations and monocultural cash crops.

3.2 Direct Causes

The direct causes of biodiversity loss are mainly socioeconomic responses at the local level to the indirect causes mentioned above. Examples include:

- ▲ Development activities such as transport, construction, mining and drilling, resource extraction, pollution, drainage and canalization, and flooding.

⁶ The avoided damages can be considered the benefit that is yielded.

STAP Analytical Framework for Biodiversity

- ▲ Encroachment arising from population growth and migration, including for settlement, agriculture, forestry, grazing and browsing, often leading to habitat loss, hydrological change, erosion and siltation.
- ▲ Unsustainable exploitation (often utilizing destructive techniques) of plants and animals for medicines, fuelwood, horticulture, food, sport, and national and international trade.
- ▲ Disasters, such as oil spills.
- ▲ Mismanagement of natural resources, for instance inappropriate land use, unsustainable logging practices, uncontrolled use of fire, hybridization, spread of disease and invasive alien species, and blocking of migration routes.
- ▲ Mismanagement of human resources, including excessive tourism, harassment, litter and noise.
- ▲ Political issues such as armed conflict, civil unrest, military activities, changes in land tenure, and the pressure of human populations.

Certain new threats to biodiversity are recognized but not yet quantified:

- ▲ The rate of global warming now predicted will outstrip the response capacity of most animals and plants. 40-60 percent of protected areas are at risk of major ecological disturbance.
- ▲ Enhanced UV-B radiation, as a result of the destruction of the ozone layer, is largely affecting polar regions. If the phenomenon worsens it may affect more species-rich areas.

3.4 Decision-making: Determining priorities

3.4.1 Conservation Priorities

Establishing conservation priorities is complex, contentious, and, in the final assessment, judgmental. Absolute priority will inevitably be a matter of political judgement, for it must include a number of considerations, such as socio-economic factors, development status, and political realities. Clearly a methodology to provide tools for the assessment of relative

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priorities depends *inter alia*, upon the availability and quality of data, which are often patchy, unreliable, and often weakest in the areas where action is most needed.

An assessment of the conservation priority of an ecosystem requires four main categories of information:

- ▲ the conservation importance and cultural significance of the biological resources;
- ▲ the degree of threat;
- ▲ the capacity of the relevant management authority to conserve biodiversity;
- ▲ the economic significance.

The relative mix of these four categories will depend upon a number of political, socio-economic and cultural factors. GEF funding can neither be confined to the richest ecosystems, nor to the regions of greatest risk.

Each category can be described by a number of indicators:

- ▲ the Biodiversity Importance Index, which consists of measures of: species richness and endemism (regressed onto species/area curve); keystone species (such as top carnivores, selected invertebrates and micro-organisms); centers of species diversity; ecosystem diversity; species or ecosystem rarity; and, genetic diversity of agricultural crops and livestock.

Data exists for species richness and endemism for most higher vertebrates and plants. The data for fish is patchy and for invertebrates it is confined to selected groups such as mollusks and butterflies. Information on centers of species diversity is available by using plants and birds as indicators. The main gap is the almost total lack of data on genetic diversity.

- ▲ the Biodiversity Risk Index:
rates of species endangerment and extinction; proportion of original ecosystem area remaining and rate of conversion; degradation of ecosystem quality and fragmentation; rates of genetic erosion of agricultural crops and livestock; and, indicators of human population growth and spatial expansion.

nothing to do
with marine
systems

also not
for terrestrial

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This index assesses the urgency of the risk of losing species and ecosystems. Data on species at risk is contained in the IUCN Red List, Action Plans and Recovery Plans (listed in WCMC, 1992, pp 574-5). Many of these plans focus on "keystone species", such as top predators that can be used as indicators of ecosystem perturbation. Data on ecosystem loss is available for tropical forests, but not for other ecosystems as no coordinated global monitoring programmes are in place for grasslands, wetlands or other biomes. System reviews, demonstrating the amount of ecosystems remaining and under protection, exist for the Afrotropical, Indomalayan and Oceanian realms but these need updating. A new analysis for the Neotropical realm is necessary. There is a lack of data on rates of genetic erosion, degradation of ecosystem quality and fragmentation.

- ▲ the Conservation Capacity Index, which measures the capability or feasibility of conservation success:
proportion of area already under conservation management, the effectiveness of that management, national conservation policy and legislation, enforcement of legislation, financial investment in national conservation programmes, education and training programmes. Continuity of ownership or access rights to resources is also an important consideration for investing in the management of biodiversity.

The first line of defence for biodiversity is the protected area system, but many are inadequately managed or poorly supported by legislation and investment. Lack of education, training and incentives can lead to poor socio-economic integration with local communities. There is a need for species inventories for protected areas. In Zimbabwe, for example, over 90 percent of birds are found in parks, whereas in Somalia, only 47 percent enjoy this security. Such data must be extended, but with the caveat that occurrence in a protected area is no guarantee of long-term security.

- ▲ the Socio-Economic Significance Index:
national use and non-use values of resources, cultural/historical/religious significance, land tenure and rights of access to resources, and intellectual property rights.

The economic benefits accruing to local communities and nations from consumptive use and the service values of species and ecosystems provide a strong incentive for biodiversity conservation. The religious or cultural significance of plant and animal materials, and the archaeological, aesthetic or cultural values of sites (material cultural heritage, or, in UNESCO terms, "cultural property", are powerful motives for conserving biodiversity.

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As far as possible, each set of indices must be assessed for priority determination in the context of local, national, regional and global needs.

For GEF purposes all projects should be ascribed, as much as possible, quantitative estimates of the above indices as part of the appraisal process. Furthermore, an analysis should be undertaken to assess the extent to which these indices will be affected if the project does or does not proceed. In turn, projects must be reviewed in the context of the national biodiversity strategy and action plan (Article 6 of the Convention on Biological Diversity) and the assessment of national priorities and needs.

All GEF projects must also recognize the absolute priority of including the participation of local communities. Biodiversity projects will fail unless adequate attention is given to the need to involve local people.

3.4.2 Rationale for Biodiversity Conservation

A rationale for protection of biodiversity that helps to create the political constituencies necessary for effective protective action and mobilization of funds, is provided by a consideration of the different value systems. Biodiversity has several broadly defined categories of value:

(a) Many people believe that biodiversity has **intrinsic value** -- it has a value in itself and which is unrelated to human attitudes and preferences.

(b) Ecologists will often refer to **primary value**, the value of ecosystems and ecological processes as life support systems and which value logically precedes all other human-oriented values.

(c) Economists tend to focus on **economic values** which must be construed far more widely than straightforward commercial values, and includes use and non-use values (see Section 3.4.3).

All these value concepts are legitimate, but due to limited financial resources not all biodiversity can be conserved. Choices have to be made. Reference to intrinsic values therefore presents a problem for the decision-maker: if all biodiversity has a right to exist, how are those rights to be prioritized? The concept of primary value at least serves to remind us that systems and processes which serve very valuable life support functions should attract special attention. In many ways, this is what has prompted the international Conventions on Biological Diversity and Climate Change. But, from a practical standpoint, the concept of primary value is also problematic: if all biodiversity has primary value, it is not clear how priorities can be determined. Finally, economic values presuppose that the standard of value is what human

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beings want, and that may both under-emphasize the other concepts of value and the wants and preferences of future generations who cannot express a vote.

4.3 Economic Values

Economists recognize a number of economic values of biodiversity (see Box 1). All economic value is based on the concept of "demand" or "willingness to pay" (WTP) for conservation. WTP has an important role to play, but it is also important to understand its limitations. WTP is limited by "private ignorance", i.e. by the extent to which individuals are informed about the importance of biodiversity. Because there is scientific uncertainty about the importance of biodiversity, and because people are not well informed about the benefits of biodiversity even where they are known, WTP will tend to understate true benefits. This is especially true with respect to the life-support, or "primary value" functions of biodiversity. Nonetheless, it is possible to investigate how WTP changes as information improves. This is no different to observing changes in WTP for everyday commercial goods as information about those goods changes (e.g. health risks, convenience, etc.). WTP is "subjective" in the sense that it measures the preferences of people. All economic values are subjective in this sense, but this "subjectivism" is not a criticism of those values.

The current "state of the art" in monetary benefit estimation shows that it is possible to elicit meaningful WTP estimates for changes in environmental variables as they affect human beings. However, as yet, no rigorous attempt has been made to elicit WTP for assets which have global environmental importance⁷. If it proves difficult to estimate WTP, or if it is felt that a human preference based approach is too limiting, then it is necessary to add other, non-monetary, indicators of the benefits of biodiversity conservation.

Hence, the economic value indicators of relevance to investment in biodiversity conservation are:

- ▲ a (monetary) measure of benefit
- ▲ a (non-monetary) measure of effectiveness
- ▲ a measure of cost.

⁷ The exception is economic valuation of some of the effects of global warming which may be seen as a valuation of carbon cycle functions.

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BOX 1 Economic Values

Direct use values are the values arising from the direct use and appreciation of biological diversity. Included here are the cultural, religious and anthropological values accruing to individuals at the domestic and worldwide level as well as the more conventional economic values such as fisheries, eco-tourism, commercial and medicinal plants etc.

Indirect use values are the values that biodiversity generates for humankind but which are not directly consumed, e.g. the functioning of biogeochemical cycles upon which human life depends, the watershed protection functions of tropical forests, water cleansing functions of wetlands, and so on. Some of the **primary values** may well be included in indirect use values.

Use values also include:

Insurance values. Reductions in biodiversity increase the risk that substitutes will not be found for existing or new genetic varieties used for the production of food, medicines etc. Protecting biodiversity therefore has an insurance value. This is sometimes referred to as option value.

Information values. Information about the uses of biodiversity changes through time in two ways: exogenously so that chance discoveries enhance the value of biodiversity, and endogenously through the capture of that 'endemic knowledge' that local communities have about their biodiversity.

The component parts of non-use value may be difficult to distinguish in practice, but are often categorized as:

Existence value. This is the value, as perceived by individuals, of the biodiversity even though it is not used and even though options relating to its future use are not valued. Existence value may reflect many motives for valuation: some concept of stewardship, some idea of the 'intrinsic rights' of non-human systems to exist, empathy, sympathy etc.

Bequest value. The value to the individual from knowing that a particular environmental asset is being passed on to that individual's descendants, or to future generations generally.

The underlying economic rationale for protecting biodiversity (based on the human-oriented approach) is therefore that the sum of use, option and existence values is positive and may be substantial relative to the alternative uses of the land and/or water base of the ecosystem.

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3.4.4 The Units of Approach, Management, and Account

In the protection of biodiversity, the ecosystem is used as the **unit of approach** as it is the level at which all biodiversity (at the genetic, species, community, ecosystem and landscape levels) can be preserved. This is also favored by the Convention on Biological Diversity (Articles 7, 8 & 10).

The **unit of management** depends on the particular conservation objective of the project (protection of a particular area or species; capacity building such as improving Protected Area systems; and, research activities).

The **unit of account** should be determined according to the unit of management for each particular project. In the case of conservation of a particular area or site, the reduction of pressures on biodiversity is the unit of account.

3.4.5 Cost-effectiveness

The GEF is required to employ cost-effectiveness criteria in order to maximize the benefits obtained from the funds available. This implies careful selection and evaluation of projects, based on measurable criteria. It will require clear measures of the costs of conservation, indicators of the significance of the biodiversity in question, as well as assessments of the degree of threat. These criteria will be balanced against practical judgements relating to the capacity to conserve biodiversity.

Determining costs involves:

- ▲ estimating the **direct resource costs** (costs of labour, materials, equipment, land) required by the project;
- ▲ estimating any **indirect costs** that may be associated with the project, e.g. loss of access to a given area due to its protected status and changes in infrastructure costs.
- ▲ estimating the **foregone opportunity costs** of conservation. The opportunity cost relates to any foregone economic values relating to land and resource uses that are precluded, or attenuated, because of the conservation activity. An example might be the foregone agricultural value of forest land if the forest is conserved for sustainable uses that are inconsistent with agriculture.

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The theoretically correct measure of cost is the sum of these three components, i.e:

$$COST = DIRECT COSTS + INDIRECT COSTS + OPPORTUNITY COSTS$$

3.4.6 Incremental Cost and GEF Intervention

To date, the mandate of the GEF has required that it intervene only in contexts where there are significant global benefits to be obtained from GEF funding. The size of the GEF financing is also limited to the **incremental cost**. Annex 3.1 sets out more formally how incremental cost can be defined and how the prevailing GEF interpretation relates to the apparent definitions of incremental cost in the Convention on Biological Diversity. This section looks at the basis for the GEF's use of the term.

The easiest way to understand incremental cost is to imagine a project -- say the establishment of an extension to a national park -- which will yield the host country some benefits. Those benefits might be the conservation of fisheries, local recreational use of the area, local products and so on. But the country in question considers the expense of protection to be too much relative to the size of the benefits. The alternative use of the land -- say for agriculture -- appears more profitable from a national standpoint. But the area in question also yields significant global benefits because the site has biodiversity of global importance. Clearly, from a country standpoint, converting the land to agriculture is to be preferred since the country cannot "capture" the global benefits in the form of cash. From the global standpoint, however, the area should perhaps not be converted.

In this very simple example, the difference between the host nation's costs of conservation and its own benefits from conservation is then the incremental cost: it is the sum of money that the GEF would have to fund in order to make the conservation use of the land preferable from the host nation's standpoint.

In order to determine whether or not it should make this payment, the GEF needs to establish whether or not the global benefits from conservation exceed this incremental cost. If they do, then the GEF would be willing to advance funds up to the level of the incremental cost.

Under this interpretation of incremental cost, the GEF does not fund the total cost of the project. It funds that part of the cost which is not offset by benefits obtained by the host nation. In practice, there is no hard and fast line that determines the economic limits for GEF intervention. This is because host countries will frequently not be able to exploit the potential for securing domestic benefits due to their limited access to capital resources. Moreover, the Convention on Biological Diversity does not define incremental cost. It is arguable that the Convention is consistent with a definition of incremental cost that does not deduct national benefits from the

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overall cost of the intervention. These potentially diverging definitions of incremental cost will require resolution during the GEF's operational phase.

For present purposes the relevance of incremental cost is as follows:

(a) it defines the 'window of investment' for the GEF, leaving aside the GEF's potential future functions, for example, as broker for private sector finance;

(b) it means that there has to be some indicative measure of:

global benefit of biodiversity conservation

domestic benefit (benefit to the host nation)

cost of conservation to the host nation

for how long?

The rest of this chapter looks at the issues involved in these benefit and cost assessments.

3.4.7 Domestic and Global Benefits

As noted above in the discussion of incremental cost, it is important to distinguish between domestic (or local) and global benefits, where domestic benefits refer to the benefits to the "host" nation, and global benefits refer to benefits accruing to all other nations. Domestic and global benefits are classified below, but these definitions do not imply anything specific about the measurability of the benefits.

3.4.7.1 Domestic (National) Benefits

Domestic benefits may be classified as follows:

1. Species and ecosystems used in the local subsistence economy (fruits, wildmeat, medicinal plants etc.), or those that are of national commercial value (non-timber forest products, "ecotourism", etc.).
2. Ecosystem functions that support or protect local or national economic activity and/or cultural heritage, e.g. watershed protection, nutrient cycling, predator-prey relationships, specific ecosystems related to cultural use values.

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Species and genepools that preserve future options for local biotechnological research (particularly crop breeding and forest tree improvement), domestication for food and medicinal purposes, and evolutionary change.

4. Species and ecosystems with existence (non-use) values determined by such factors as their cultural importance, ethical regard and charismatic nature.

3.4.7.2 *Global Benefits*

1. Diverse productive resources are themselves of benefit at the global level because they provide insurance for the current harvest. As the current production portfolio becomes increasingly specialized in fewer and fewer biological resources, the prospects for crop failures increase. Currently harvestable production derived from diverse gene pools provides insurance in the current year against major losses of biological productivity.

2. Species and ecosystems of international economic importance -- either for ecotourism, research, recreation etc., or of international legal standing -- such as Ramsar and World Heritage sites. International legal standing may be taken as an attribution to the site of international economic importance, although there is no necessary equivalence.

3. Ecosystem functions or regional or global importance such as carbon storage and trans-boundary air and water functions.

Species and genepools that preserve future options for biotechnological research or value outside the project (particularly agricultural and pharmaceutical research), domestication and evolutionary change.

5. Species and ecosystems with existence values that accrue to other countries or the global community as a whole.

3.4.8 **The National Perspective**

All the GEF interventions are at the national level and must therefore be in the context of national priorities for biodiversity. Those priorities will be indicated in existing national country policies and action plans, and in the studies and plans supported under the Biological Diversity Convention. These national strategies will indicate:

(a) the existing inventory of biodiversity, and

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(b) the relative importance attached to economic development and conservation by the nation in question. Where biodiversity conservation has clear priority over developmental uses of land and water resources, the national plan can be expected to indicate this, and, within the financial resource limits of the country, the country will take the necessary actions to secure that amount of conservation.

As the discussion of incremental cost indicated, the GEF interventions effectively involve compensation to the host nation to expand national biodiversity conservation to include activities where the cost to the host nation exceeds the benefit to the nation or where a nation's national priorities for conservation cannot be met due to lack of capital. At the project level such costs will include:

- a) the actual costs of *in situ* and *ex situ* conservation, e.g. the costs of inventories, monitoring, and enforcement;
- b) any foregone benefits from economic activities which are displaced by the conservation measure- .e.g. agriculture⁸.

Where conservation activity is significant, impacts may extend to the sectoral level, so that incremental cost needs to be more broadly defined.

A large part of the existing investments by developing nations in biodiversity conservation are perceived by them as marginal to the economic development process. Most governments consider that it is not possible to increase their contributions to this issue as they would need to divert resources from priority national needs. Those countries that do not receive direct incomes from conservation activities such as ecotourism, are not likely substantially to increase their fund allocations for this purpose.

3.4.9 The Distributional Issue

Defining incremental cost in terms of national and global benefits and costs should not obscure an important dimension, namely the incidence of the costs and benefits. From a national standpoint, incremental cost may be compensated, yet a particular socio-economic group may be adversely affected. This may be especially significant in the biodiversity context if land uses are changed in favour of conservation and sustainable use and against environmentally destructive land uses such as non-sustainable slash-and-burn agriculture. The distributional issue is not just important from the standpoint of equity but also from an efficiency perspective: if the

⁸These forgone benefits should be net benefits from the displaced activity; e.g. forgone profits or surpluses from agriculture

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interests of the persons most adversely affected are not addressed, the conservation project may well fail due to incompatible incentives.

3.5 Levels and modes of intervention

3.5.1 The GEF Response

Even though GEF interventions may initially relate to contexts where global benefits exceed incremental costs, it is clear that, unless domestic benefits exceed domestic costs by the time of project completion under GEF funding, investments in biodiversity will not succeed on a sustainable basis. Through GEF intervention, projects must yield net gains to the host country and must be perceived to yield net gains to those most directly affected by the projects -- the local communities.

} in 3 to 5 yrs.?
how can this ever happen?

The national interest often diverges from what is globally desirable because a nation's decisions regarding land use conversion will usually not take into consideration the global benefits of diverse biological resources. This is because those global benefits are not appropriable by the host state under existing institutions. An important role for biodiversity investment is to assist in the enhanced appropriability of these assets.

These requirements need to be compared to what actually happens. What actually happens is that private decision-making diverges markedly from the national efficiency criterion. The actual comparison is between the revenues from a given land use and the costs to the land user. Revenues are made up of receipts from selling the produce of the land (or its implied value if there is no market) and income supplements which may take many different forms -- direct subsidies, subsidies to credit, machinery etc. The national standpoint compares the social costs and benefits to the nation. The land-user, however, compares private costs and benefits.

This divergence of "social" and "private" decisions helps to explain why biodiversity is being reduced. Significant reductions in rates of loss could be secured without major investment in projects or programmes to use biodiversity sustainably by correcting the economic distortions -- such as subsidies -- that favour land (and water) uses that are not desirable from the social standpoint. If this is correct then one way to begin is to train and raise awareness in those decision-makers whose decisions affect biodiversity directly or indirectly. Such training will often need to be targeted not at those responsible directly for biodiversity, but at economic decision makers.

Investments in biodiversity protection must proceed on these two fronts: improving information and access to information so that "wrong" decisions are not made with respect to land use by the host country, and enhancing the appropriability of the global benefits.

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3.5.2 Categories and Modes of Intervention

Taking into account the above considerations, the GEF should fund two types of projects:

- a) Projects that address **direct causes**. These projects should test new approaches and methodologies for conserving particular threatened areas of significant biological importance or endangered species. Even if the "preventive" approach to biodiversity conservation is more cost-effective, it tends to be longer term in focus and there is a need for short-term solutions to acute problems of ecosystems or species loss.
- b) Projects that address as much as possible the **indirect causes**, improving the capacity of the countries to plan and develop efficient conservation strategies, measures and programmes in the medium and long term. These include mainly the incorporation of biodiversity conservation issues within the economic development framework of the countries; correcting economic distortions that adversely affect against biodiversity; facilitating the "capture" of global value; testing innovative institutional, financial and legal schemes, planning tools, research and educational programmes at all levels.

Targeted research activities should be undertaken within both types of projects. Developing countries need to improve their scientific infrastructure in order to meet the goal of conservation.

3.5.2.1. *Projects Addressing Direct Causes*

These projects will comprise a broad variety of interventions, but in every case the local communities (local authorities, and all kinds of peoples, groups and individuals that have direct interest and/or activities related to the areas or species in question) must be involved in every decision. This is the principal guarantee of project sustainability.

The different interventions could include:

- designing new protected areas or re-designing existent ones;
- improving protected areas systems management capabilities;
- testing new categories of protected areas;
- testing new approaches to protecting areas for their biodiversity;

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- creating and/or applying new or different technologies for the sustainable use of biological resources (not only for commercial purposes);
- creating incentives for changing local land use practices (as recognizing community rights and knowledge) and disincentives for noxious practices;
- controlling human settlements and migration flows (reviewing infrastructure building programmes, creating different colonization poles, improving land use efficiency in areas already under occupation, etc.);
- improving law enforcement through strengthening of governmental and non-governmental local institutions (additional and trained staff, equipment, etc.);
- developing ex-situ conservation programmes for selected species such as botanical gardens, arboreta, zoos and seed banks, but also small tree nurseries and breeding and ranching programmes.

3.5.2.2. *Projects Addressing Indirect Causes*

These second type of projects also have a wide scope. The possibility of implementing successful and sustainable projects, as in the first case, depends on "community participation" but at a different level. Dissemination of information is very important as a basis for using institutional democratic channels at the country level. These channels consist of the different forums and legal procedures for discussing development issues and for building consensus among the different economic and governmental sectors (mining, transport infrastructure, fisheries, energy, forestry, agriculture, defense, among others) regarding the optimal use of natural resources.

Efforts for biodiversity conservation of these second type of projects should be directed to:

- ▲ developing territory use plans taking into consideration the long term capacity of natural systems to support economic activities and human settlements;
- ▲ evaluating and improving social and economic development plans according to biodiversity conservation needs, including improved project appraisal, environmentally sensitive national economic accounting, and "full cost" pricing;
- ▲ developing National Conservation Plans;

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- ▲ promoting institutional and legal reforms;
- ▲ facilitating the implementation international agreements for controlling trade in endangered species, and pollution and waste disposal, and for economic and technical cooperation;
- ▲ developing research programmes (basic and applied) for filling the gaps in information for the effective management of natural resources and biodiversity conservation;
- ▲ facilitating mutually beneficial trades between host countries and donor countries and/or the private sector.

3.5.3 Project Priority

Considering cost-effectiveness and the urgency of action to conserve biological diversity, the GEF should give priority to the following issues:

- ▲ Preference for the **ecosystem approach** in order to preserve the base of sustainability for different levels of biological variety, and to facilitate activities such as inventory, monitoring, research and training. According to this, in-situ conservation projects should have preference;
- ▲ Areas with the **greatest number of species with high evolutionary value, rare or endangered ecosystems, and/or threatened species**;
- ▲ **Regional projects** for the protection of trans-boundary ecosystems and migratory species;
- ▲ Protection of sites which provide essential ecological services;
- ▲ Selection of projects proposing **different methodologies** for addressing similar problems, in order to evaluate different kinds of interventions, their effectiveness and their replicability;
- ▲ Testing **different categories of protected areas**, allowing different degrees of human occupation;
- ▲ Projects which test **different funding mechanisms** and self-sustaining conservation activities;

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- ▲ Projects that provide lessons on how to integrate biodiversity considerations into development projects;
- ▲ Projects that promote an integrated approach to biodiversity conservation, especially targeting the control of human flows into conservation areas;
- ▲ **Land use planning exercises** to help governments take appropriate decisions regarding the establishment of infrastructure and other development activities.

..5.4 Viability of Intervention

GEF project viability depends on:

- ▲ The Quality of the Project Proposal (Annex 3.2);
- ▲ Institutional Capacity (Annex 3.2);
- ▲ The Macro-economic and Macro-social Context (Annex 3.2).
 - **government commitment** (testable by looking at past record, actual legislation and its enforcement, whether or not a national conservation policy is in place, etc.)
 - **property rights** (is land tenure secure? Are there rights to resource use that facilitate the project or conflict with it?)
 - **participation** (what role has the local community played in project preparation and development?)
 - **are incentive structures** such as output and input prices compatible with the project?

Details on the STAP Operational Procedures are given in Annex 3.2.

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Annex 3.1

INCREMENTAL COST

This annex outlines the basic elements of the measurement of incremental cost as interpreted by the GEF in its Pilot Phase. It is important to understand that, in practice, estimating incremental cost is complex and must be adapted to the institutional and country context in question. Moreover, the interpretation offered here will change as the GEF conforms with the meaning of incremental cost as implied by the Conventions on Biological Diversity and Climate Change.

We distinguish two contexts: a simple one in which the country in question has only one choice of technology and a more complex one in which there is a choice of technologies. "Technology" here needs to be interpreted broadly. In the context of greenhouse gas control, it can refer to an energy source or to a carbon sink. In the ozone layer context, it refers to substitutes for CFCs. In the international waters context, it may refer to different options for controlling waste. And in the biodiversity context, it will refer to different ways of meeting a given protection objective. Finally, in the biodiversity, global warming and international waters contexts, the GEF also intervenes through capacity building and institutional design.

Notation

In what follows we use C for cost; B for benefit; d for domestic or national; g for global where global means the rest of the world. IC is incremental cost, and δ means "difference in".

Simple Case: Single Technology

In the simple case there are two possibilities:

(a) $B_d > C_d$.

In this case the domestic benefits exceed the domestic costs and *prima facie* therefore the GEF would not be involved in financing the project. The country secures net gains by investing in the project itself or through conventional development aid sources. However, if there are major global benefits associated with this investment, then it might qualify for GEF intervention as a "Type I" project (see later).

(b) $C_d > B_d$.

In this case the country in question will not invest in the project since it secures net losses to the country. But if there are significant global benefits, the GEF may wish to intervene. The requirement for GEF intervention is then:

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$$B_g > (C_d - B_d) \dots [1]$$

i.e. The GEF may intervene to finance the project provided the global benefits exceed the net cost to the nation if the nation had funded the project. The amount $C_d - B_d$ is the interpretation of incremental cost used during the GEF's Pilot Phase.

What flows of funds are associated with this case ?

i) the country pays some of the cost since it gets a benefit B_d , but it does not pay all of the cost (otherwise it would have no interest in the project). The limit to the country's contribution is given by C_d less GEF's contribution which is $(C_d - B_d)$. So the country's contribution is less than $C_d - (C_d - B_d) = B_d$.

ii) GEF pays, in the limit, $C_d - B_d$, which is the incremental cost.

This context is likely to define many of the biodiversity projects for the GEF. Essentially, they will be projects where the country finds the benefits to itself from conservation are not sufficient to justify conservation. Hence it will not proceed without GEF intervention. The GEF must be satisfied that:

(a) domestic benefits are not greater than the costs;

and

(b) that the global benefits exceed the incremental cost.

Multiple Technologies

Probably less relevant to biodiversity will be the cases where a country has several choices of technology, but the analysis of incremental cost is not complete without an assessment of this issue. Economic rationality from the country's standpoint dictates that it will choose the **least cost** technology. But this may not be the most globally environmentally beneficial technology. For example, in the global warming context the country may be able to burn coal or import gas. The coal is cheaper than the gas but emits higher amounts of CO_2 . When should GEF now intervene?

Let C_{d_0} be the cost of the technology 0 and let this be the "cheap" technology. Let C_{d_1} be the cost of the more expensive but more globally beneficial technology. Now the condition for GEF intervention is:

$$B_g > (C_{d_1} - B_d) \dots [2]$$

i.e. the global benefits must now exceed the net costs to the nation of adopting the **more expensive** technology.

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Let $Cd_1 - Cd_0 = \delta C$, i.e the difference between the costs of the two technologies. Then the requirement for intervention can be written

$$Bg > (Cd_0 + \delta C - Bd) \dots [3]$$

or $Bg > [(Cd_0 - Bd) + \delta C] \dots [4]$

This is the same requirement as for the simple technology case but the term δC is added.

The whole expression on the right hand side is the incremental cost, IC.

If Cd_0 exceeds Bd the country would not proceed anyway and, since $Cd_1 > Cd_0$ it would not be interested in the globally cleaner technology either. So the only context of interest is the one where $Bd > Cd_0$, but $Bd < Cd_1$. That is, in its own interests, the country would proceed with the less globally beneficial technology and would not choose the more beneficial technology. But this means that $Bd > Cd_0$, in which case the first term on the right hand side of [4] is negative. The implication is that GEF should not seek to fund the complete difference in the costs of the two technologies (δC) but that difference less the net benefits the country would have got from proceeding with the less clean technology. The intuition here is that the GEF should not be paying for the net benefits the country would have got anyway.

What now are the resource flows?

(a) the total cost of the project is Cd_1 and the GEF would pay, in the limit, the amount this cost less an estimate of the benefits accruing to the nation;

(b) the country would pay up to $Cd_1 - (Cd_1 - Bd) = Bd$, the benefits that it would obtain.

The results are thus similar in form to the simple case.

Of course, the preceding analysis assumes that benefits and costs are measured in the same units (e.g. money) and this will often not be possible, particularly in the biodiversity context. Hence a significant judgemental element will enter into the assessment of incremental cost since, as shown above, it must always involve an assessment of the domestic benefits. Moreover, as this Analytical Framework shows, other issues beside costs and benefits are relevant to decision-making. Finally, it is arguable that the Convention on Biological Diversity is consistent with an alternative definition of incremental cost -- one which does not net out domestic benefits from the cost of the intervention.

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ANNEX 3.2

STAP OPERATIONAL PROCEDURES FOR BIODIVERSITY PROJECTS

STAP PROCEDURE

STAP considers each project in the context of the overall portfolio of GEF projects and, from time to time, STAP evaluates the portfolio for balance and cost-effectiveness. STAP's procedure for evaluating projects is summarized in Box 1.

Box 1

STAP Procedure for Evaluating Projects

- Step 1 STAP checks that projects are in compliance with the generic criteria for all projects⁹.
- Step 2 Projects are classified according to their location in biogeographic realms. Comparison is made between projects within biogeographic realms, not across realms.
- Step 3 Project quality is assessed (see Section 2 below).
- Step 4 Ecosystem importance is assessed using the importance criteria developed in this document. Importance has national and global dimensions. STAP pays special attention to indicators of the global importance of biodiversity.
- Step 5 Project cost is assessed and is related to the indicators of global importance in order to secure some judgement about the cost-effectiveness of the project.
- Step 6 The feasibility, replicability and sustainability of the project is assessed using the guidelines discussed in Section 4 below.

⁹ See Global Environment Facility, Scientific and Technical Advisory Panel, *Criteria for Eligibility and Priorities for Selection of Global Environment Facility Projects*, Washington DC, May 1992.

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2. THE QUALITY OF THE PROPOSAL

STAP's overriding function is to ensure and maintain the technical and scientific quality of projects brought before the GEF. The GEF recognizes three different types of projects: information management; institutional/capacity building; and field activities. The following questions need to be answered for each project:

1. **Objectives.** Are the objectives of the proposed project clearly stated?
2. **Location.** Is the geographical location and extent of the project clearly defined - preferably shown by a map.
3. **Scientific plan.** Are quantification and a thorough description of physical and scientific aspects included?
4. **Workplan.** Is the implementation procedure and workplan or timetable provided?
5. **Implementation.** Are all implementing agencies and collaborating organizations listed?
6. **Costs and benefits.** Are costs and benefits identified, and is there an indication of their likely scale, geographical and temporal distribution, and social incidence?
7. **The with/without principle.** Is there any indication of the without-project outcome, and can this be compared with the with-project scenario?
8. **Socio-economic context.** Is sufficient information provided on social and economic background to the project?
9. **Dissemination of results and knowledge.** Are there plans for dissemination of results and knowledge?

3. INSTITUTIONS AND HUMAN CAPACITY

Institutions

STAP is concerned with assessing the capability of a country to undertake a project and to ensure its sustainability. It will therefore seek answers to the following questions:

- a) is there an institution or group of institutions that is capable of executing the project?

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- b) can the relevant institutions (local, national, regional) be coordinated and called upon to participate in the project ?
- c) are the physical facilities of the institutions in good repair to handle the project effectively? If not, will the national government improve the quality of the institutions?
- d) is there adequate infrastructure in place? In particular, are there:
 - ▲ sources of information and databases on floristic and faunistic elements; ecosystems; protected areas, etc.?
 - ▲ national network capabilities ?
 - ▲ national institutions capable of accessing information from international information centers?
 - ▲ national plans (e.g. national conservation strategies, biodiversity action plans) in place?
 - ▲ operational instruments such as environmental regulations, guidelines etc?
 - ▲ legal instruments to enforce regulations?
 - ▲ technical equipment supplies relevant to monitoring and assessment?

Resources

With regard to human resources, STAP seeks answers to the following questions:

- a) Does the human capacity exist (in terms of critical mass, qualifications etc.) locally, nationally and regionally to execute the project?
- b) If not, are there any plans to develop the needed capacity?
- c) How do the national authorities deal with any exodus of trained personnel from their country?

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4. THE MACRO FEASIBILITY AND SUSTAINABILITY OF THE PROPOSAL

The realized outcome of any project in the long term will depend not just on the project itself, but also on the social, economic and political context in which the project occurs. STAP therefore pays close attention to the factors that help to determine the feasibility of success, especially in the longer term when GEF intervention ceases. The project must be feasible and the results must be sustainable. STAP will therefore expect answers to the following questions:

1.
 - a) What are the trends in terms of future pressure on the area?
 - b) What is the rate of change in the human population in the designated area through:
 - ▲ indigenous population growth?
 - ▲ inward/outward migration?
 - c) What are the present and future modes and intensity of exploitation of resources? What are the likely pressures from:
 - ▲ conversion to cultivation and pasture?
 - ▲ encroachment?
 - ▲ other economic activities?
 - ▲ tourism?
 - ▲ logging?
 - ▲ hunting?
2. What will be the short-term and long-term national and local benefits in terms of:
 - a) use values?
 - b) non-use values?
3. What will the local and national costs be in terms of foregone short-term income?
4.
 - a) Will the project lead to, or promote sustainable development in the area?
 - b) How will local communities and indigenous people be involved in terms of:
 - ▲ financial rewards?
 - ▲ employment?
 - ▲ goods and services?

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5. How secure is the required funding by the national government?
6. What will be the final effect of the project in terms of the unit of account STAP uses: reduction in pressure on the ecosystem/area?

What is the long term feasibility of the project in terms of sustainability of the results?
8. Are there indications that an Environmental Impact Statement of some sort might be needed?
9. Are there sufficient arrangements for monitoring and evaluation?

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ANNEX 3.3

GUIDELINES FOR PROTECTION OF BIODIVERSITY AS DERIVED FROM CONSERVATION BIOLOGY

1. Maintenance of basic ecological processes requires large areas. Exact sizes are difficult to determine.
2. Species are best conserved in large areas, in the type of ecosystem in which they evolved.
3. There is a relation between species richness and size of area. Protected areas should be sizable enough to support viable populations.
4. The success of conservation is also dependant on a good general environmental quality beyond protected areas and buffer zones.
5. Ecological isolation due to conversion and fragmentation of the landscape is a major threat to biodiversity. Therefore conservation should be directed at creating networks of large reserves with connecting corridors.
6. It is essential to maintain environmental heterogeneity at all levels. In particular, gradients within and between ecosystems should to be conserved.
7. In many ecosystems one can recognize species or groups of species which are of special importance. They are considered to be key species or key industries for the functioning of the ecosystem. Examples are grazers, top predators, pollinators, vectors of seeds and earthworms.
8. Ecosystems often show great internal stability, but are fragile in respect of external influences. Therefore, very often, buffer zones surrounding them are essential.

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ANNEX 3.4

EXISTING INTERNATIONAL LEGAL AGREEMENTS AND INSTRUMENTS

1. The international community has formally expressed serious concern about the state and the development of biodiversity when more than 150 states and the European Community signed the Convention on Biological Diversity in Rio de Janeiro in 1992. While the agreement has not yet entered into force, it is possible that the 30 ratifications required may be deposited before long. The Convention is based on the principle that the conservation of biodiversity "is a common concern of humankind". The key objectives of the treaty are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out the utilization of genetic resources. While the agreement underlines the necessity of international cooperation, its operative provisions emphasize rights of sovereignty and the development of national rather than international strategies, plans and programs. The text of the Convention refrains from ranking the relative importance of individual species or habitats in the various regions of the world.
2. While the Convention now stands as the key instrument for the conservation of biodiversity at the global level, it should be noted that relevant sectoral agreements have been reached in the past. On the regional level, treaties designed to protect nature and wildlife were agreed upon in the Americas (1940), in Africa (1968), in the South Pacific (1976), and in Europe (1976). In a sense, the numerous agreements on aquatic resources can also be seen as efforts to preserve existing species, e.g., special rules regarding whales, tuna, seals and salmon. As to terrestrial animals, polar bears and vicunas, for instance, are the objects of special treaties. Moreover, certain rules on birds have been agreed upon. For Antarctica and the Atlantic, general rules covering all living resources were agreed upon. Regarding plants, a general convention dealing with pests and diseases was negotiated in 1940. The marine coastal environment has been regulated in West and South Africa, in the Caribbean, and in Africa as a whole.
3. Among the relevant treaties negotiated in the past two decades, the Ramsar Convention (1972), CITES (1973), the Paris Convention on the Protection of the World Cultural and Natural Heritage (1972), and the Bonn Convention on Migratory Species (1979), have attracted special attention. Ramsar emphasizes the fundamental function of wetlands as habitat; each party is obliged to designate at least one wetland and to formulate and implement protection. The Paris

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Convention highlights the significance of exceptional sites to protect wild animals and plants. CITES lists species threatened with extinction, species that may in the future be threatened and directly affected species; also, individual parties may designate species. In the operative part, the Convention sets forth a regime on export and import of the species covered and provides for sanctions. The Bonn Convention addresses the special dangers of wild migratory species; approaches are tested, and efforts are made to restore their habitats and to reduce factors endangering their existence.

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MEMO TO DAVID FROM AIMÉE

RE: GEF/BIODIVERSITY MEETING WITH TOM HOURIGAN/AID.

DATE: AUGUST 4, 1993

DAVID--this meeting was one of the most substantive meetings I have been to yet, with much discussion on the purpose of the GEF, not just the structure. The meeting was intended to be a discussion of the STAP Analytical Framework for Biodiversity, designed to help the GEF decide which projects to fund. But mainly we decided that the draft document was too narrow and superficial a treatment of the GEF's mandate for biodiversity. It did not allow for enough flexibility in the kinds of projects to be funded. So we turned to our ideas of the types of projects that should be attempted, and the priorities of the projects.

There was much talk of the limits of the term "incremental cost." Can that, for example, include funding of entire projects which otherwise would not be funded? There is a need to get away from the calculations aspect, and to get more to what needs to be done, and how to do it best. We worried about the implications of the term, and the incentive for countries to exaggerate the losses of not doing the unsustainable alternative, (or the underexaggeration of the costs of it), and the costs of doing the sustainable project, just to get as much funding as possible. It was also mentioned that countries would not necessarily pay the costs up to those of the GEF, but that that would likely be funded by other multilateral or bilateral mechanisms.

Overall there are going to be some hard decisions to be made over which biodiversity projects and countries should be funded. We need to not impose GEF funding and projects on countries, but let the proposals come from them. In addition, it should be stressed that often global benefits are also beneficial for the country, and not just a cost.

Additional project types to consider:

- training programs for biologists to develop human resources;
- ways to improve the institutional resources;
- not necessarily focus on the "hotspots" exclusively, (as the developing countries objected to that format at Rio), but also at other, more broad country projects--this will be difficult because it is not politically correct: see Ecuador project of wood plantations which failed because it was not directly related to protected areas, i.e. "hotspots" protection. These types of projects should remain an option as ways to take pressure off of the protected resources.

We discussed structure briefly, just reiterating that the Secretariat and analysis process will be independent of the World Bank, with projects decided upon on the basis of their merit, not as band-aids for Bank projects that would otherwise not go through. The UNDP small grant facility should be used, however they may be too small? The projects have to be small and medium-grant based so that countries can handle the implementation on a short- and long-term basis.

MEMO: FROM AIMEE TO DAVID
RE: BIODIVERSITY AND THE GEF
DATE: 7/28/93

David--this is a summary of the Conservation International paper on the GEF and biodiversity. I think it is helpful for background on the issue of biodiversity and the current and possible role of the GEF and biodiversity conservation.

CONSERVATION INTERNATIONAL
THE GEF AND BIODIVERSITY

Out of some 10, 30 or even 100 million possible species on earth, science has thus far described only about 1.4 million species of animals, plants and microorganisms. Currently people think of biodiversity's value to revolve around either future potential for biotechnology innovations and new pharmaceuticals, or a handful of products from tropical countries. However, the real value of biodiversity based on current use is far more extensive.

Value of Biodiversity:

Global Intangibles:

Ecological Values. Ecosystem functions and evolutionary innovation which buffer the world against shifts in climate and crop yields, and perform carbon sequestration and watershed protection (and minimize climate change and ozone layer depletion).

Geopolitical Values. Ecosecurity is threatened by population growth, economic crises, and social unrest. These degradation-based crises easily escalate into national and regional conflicts (see Haiti and El Salvador).

Major Ecosystem Functions. Values such as watershed protection for urban and agricultural areas, for carbon sequestration and for water purification are only recently started to be looked at as values of an ecosystem, and are rarely incorporated into national income accounting procedures.

International Export Values. Overrated according to CI, this biodiversity value is the easiest to quantify and assess. It includes timber, rubber Brazil nuts, rattan, fish, meat and skins. With pharmaceutical companies investing in research of possible exports this will expand rapidly.

Regional Market Values. Regional market products are those products that enter into the regional economy and may change hands several times before they are finally consumed increase in value as they go along: i.e., Manaus.

Local Market Values. These products are exchanged or sold in a smaller area, and many differ very much from regionally used

products due to perishability, low value, or locally thought to be of high value. These tend to only change hands twice.

Household Use Values. These products are provided by a given ecosystem and do not change hands, but are used by the individual or family who collect or produce them. (i.e., game meat, thatch for a house, bark for tea). They do not have cash value, but rather replacement value; when a forest ecosystem is cut to clear for cattle, the community must import regionally made products to replace those lost. If this is not done, then life becomes unsustainable, and the community must move, often to slums of an urban center adding to the burden of the nation.

Uses of Biodiversity:

Agriculture. Agriculture accounts for more than 30% of the GDP of low income developing countries; the value of agriculture trade is in excess of \$3 trillion annually; and much of our civilization rests on the utilization of seven grasses: rice, wheat, barley, oats, sorghum, millet and corn. These require continued genetic input from cultivars and wild relatives to maintain their resistance to pests and diseases. Diversity of the wild relatives of these grasses must be maintained to keep these critically important elements of global biodiversity productive over the long term. (see also coffee, and how its demise and that of its wild relatives in madagascar can influence ecosecurity and the future of governments in Latin American and West Africa).

Human Health. Biodiversity is the source of 25% of drugs prescribed in the U.S., and it currently provides the base for primary health care for about 80% of people in developing countries (3 billion people) through traditional medicine. New diseases like AIDS emerge periodically, as do old ones we thought we had conquered, and new biodiversity-dependent technologies will be required to deal with them and a wide range of other health issues.

Industry. The 20 best selling drugs in the U.S. were all derived from compounds which included extracts from plants, animals or microorganisms, and with the rapid growth of the biotechnology industry this will happen even more in the future. Biotechnology will at least become the new Silicon Valley and usher in a new age. However, to realize its potential, the biotechnology industry must do everything possible to help maintain its full range of options, the vast raw material that global biodiversity represents.

Recreation. Biodiversity is vital to the maintenance of spiritual and psychological well-being, as many studies have shown the damaging effects on the human psyche from long term isolation from nature in urban environments. All this translates into good economics especially as ecotourism and other nature-based forms of recreation (e.g., fishing, hunting, hiking) become more popular. Nature tourism generates some \$12 billion annually worldwide, and is likely to grow even more rapidly in tropical countries where it is already a major foreign exchange earner for several countries.

Setting Priorities:

We have to set priorities and focus heavily on the richest areas currently at greatest risk. The "**threatened hotspots**" approach is terrestrially-based, and focuses mainly on tropical rain forests because they are overall the richest of the terrestrial biomes. In its latest form, this analysis recognizes some 15 top priority tropical rain forest regions for biodiversity that occupy only 4% of the land surface of the planet, harbor at least 30-40% of all terrestrial biodiversity and a much higher %age of species at great risk.

Conservation International is currently building on the "threatened hotspots" approach to take into consideration all terrestrial biome-types, with conclusions so far that there are a number of non-rain forest terrestrial biomes that are also important (see Sonoran Desert, Pantanal, Cape Flora in Africa, etc.).

Another approach is the "**megadiversity country**" approach which recognizes that a relatively small number of countries, some 12 out of a total of 194 (National Geographic Society, 1993) that currently exist, are home to an inordinately large share of the world's biodiversity and therefore have tremendous responsibility. These countries may have close to 60-70% of the planet's terrestrial, marine and freshwater diversity within their borders.

Another approach focuses on the **origin and/or diversity** of major crop species of those agricultural species that are of greatest use to us. Although a limited approach that focuses only on a handful of widely used species, it shows the value of biodiversity to our own species.

The last approach mentioned by CI is that of the "**major tropical wilderness areas**." Focusing on tropical forests, these represent the few large blocks of tropical forest that remain largely intact. These wilderness areas are important storehouses of biodiversity, watershed areas, and as controls against which we can measure the management of the more devastated "hotspots." These are often the last places where indigenous people have any hope of maintaining a semblance of traditional lifestyles, and are likely to increase in recreational, aesthetic and spiritual value on an ever more crowded planet.

Regional, National and Local Priorities-the Hierarchy of Priority Setting.

The above categories look at the global level, but we need to look also at the regional, national, local, and taxonomic segments, or the "hierarchy of priority setting." A regional priority setting workshop can look at a biome encompassing several nations, a political unit like a country, or an ecosystem. This method pulls together published biological data, cartographical information, and satellite imagery, and then is refined by a pool of the leading experts on that particular region. The results of such exercises are then published in written and cartographic form and have had considerable catalytic impact.

Other kinds of data can then be superimposed on the

biological foundation using a Geographic Information System (GIS) to develop meaningful, scientifically-based conservation action agendas (see Amazon Basin and Papua New Guinea).

Soon there will be the need for national biodiversity strategies to fulfill the Biodiversity Convention. The above approaches will be useful to help create these national action plans.

Another approach to priority setting that focuses on species or groups of species is the taxon-based action plan effort by the Species Survival Commission of the World Conservation Union (IUCN). This commission consists of some 5,000 volunteer members organized into more than 100 specialist groups, and its groups have been in the process of developing action plans over the past eight years for organisms such as the lemurs of Madagascar, swallowtail butterflies, and African elephants and rhinos. These focus heavily on the so-called "flag-ship" species or "charismatic megavertebrates," and can be considered basic "building blocks" for other planning activities.

GEF Reform of Biodiversity Portfolio.

Since its creation in November, 1990, the GEF has assembled a portfolio of some 44 biodiversity projects with a total value of approximately \$300 million, which accounts for 43% of the total GEF work program. Projects range from \$1-3 million in nations such as Guyana, Cuba and the Seychelles to \$25-30 million projects in Brazil and Mexico.

By the end of 1993, the GEF must complete its restructuring, evaluate itself, and seek financial replenishment. In 1994, the Biodiversity Convention is expected to receive the necessary 30 ratifications and enter into legal force. The newly formed Conference of the Parties will decide on a future financial mechanism, and with the GEF as the interim mechanism, the reforms it adopts and implements over the next year.

Following are some basic problems based on experience to date, and concrete recommendations for improvement:

The GEF is currently performing a loose aggregate of different activities including carrying out some experimental projects, with some piggybacked on existing World Bank or UNDP projects. In general international funding for biodiversity conservation has come from bilateral donors, some inter-governmental organizations, and international NGOs and their foundation partners. The GEF must improve its collaboration with, and differentiate itself from these channels, otherwise donor governments will choose their own bilaterals as the preferred funding mechanism for biodiversity conservation.

The GEF's approach to date is doing more harm than good, i.e. its entry into biodiversity conservation has caused some other donors (U.S. foundations) to consider reducing their levels of support. Also, because of the modus operandi of the GEF's Implementing Agencies, there may be an overall reduction in small-scale, NGO or community-based projects, which have been the most effective for conserving biodiversity. This may lead to the GEF missing the opportunity to fulfill its original mission of

finding potential donors to fund key conservation projects.

The large size of GEF projects, and the relative inexperience of the GEF Implementing Agencies has led to great expectations in the project countries. This has led to infighting and jockeying among gov't and NGO communities to seek to gain advantage in access to GEF funds.

Incremental Costs: The GEF was designed to carry out the funding provisions of the Rio documents on Climate and biodiversity, with its specific mission to fund the incremental cost of achieving a global conservation benefit by implementing the treaties. This incremental cost was the amount over and above current expenditures to allow developing nations to provide a global conservation benefit that may not be in their immediate national interest. This goes against the values discussed earlier in the paper of **current** national, regional and local benefits.

This perpetuates the belief that biodiversity is not fundamental to a nation's economic viability; these values must be recognized by the GEF as a basic principle in all of its activities. The GEF should be at the forefront of a movement to integrate biodiversity into the mainstream of the development process, with the GEF as the vehicle to bring about basic change in its Implementing Agencies, (and then in the world view).

Project Cycle: The natural resources management sector of most GEF recipient countries are too small to absorb GEF projects; yet the GEF proposes huge projects of millions of dollars into sectors that cannot use the money effectively over such a short period. These large on-shot deals may create overnight institutions which will collapse when the international donor community pulls out. (see Colombia and the Choco where the grant is four times the natural resource agency's annual budget and is devoted to an area with little infrastructure; also Guyana where a \$3 million park is proposed but Guyana has no park service or infrastructure).

A diversified approach of a large number of small projects would allow the GEF to build both governmental and non-governmental capacity and allow for smaller, more flexible projects. It would also reduce infighting and make use of the real expertise that exists. The GEF Small Grants Programme for NGOs is a good first step, but is only 2-3% of the total GEF portfolio. It should be expanded and streamlined, and the GEF should adopt a more flexible funding mechanism that relies on small to medium sized grants to governments and NGOs and incorporates trust funds and endowments that ensure continuity of support beyond the 3-5 year time frame.

Trust Funds: The use of trust funds and endowments for biodiversity conservation is ideal for the GEF's emphasis on innovation, institution building, and cost effectiveness as well as continuity. Hard currency trust funds also hedge against currency devaluation, and address the concerns about project size, cycle, long term funding and local capacity building.

Use of NGOs: Expertise in biodiversity conservation lies mainly with local, national and international NGOs, and the GEF needs to have their involvement in projects. Field-based NGOs offer a wealth of technical expertise and local knowledge and it should become standard practice for GEF to consult local national and international field-based NGOs in project design and implementation. The GEF should consider greater partnerships with structures like the IUCN Species Survival Commission of 5000 biodiversity specialists from all over the world.

Priority Setting: The GEF must recognize that distribution of the planet's biodiversity is very uneven, and set priorities for action, rather than reacting only to political pressures or acting on a first-come, first-serve basis. The GEF needs a priority setting mechanism which will use the expertise of key NGOs, such as the Global Biodiversity Assessment currently being discussed by the GEF and UNEP, (in UNEP's capacity as the interim secretariat for the Biodiversity Convention. The GEF can work to design an international equivalent to our National Biological Survey, by creating a true partnership with NGOs that have taken a serious look at biodiversity priorities.

Institutional Considerations: The GEF should build on the UNCED model and hold public consultations with communities and constituencies likely to be affected by projects. Due to the past record of the MDBs, transparency and information disclosure are critical parts of building public trust. Biodiversity is by nature a participatory and local endeavor and cannot be brought about without local participation. The GEF needs to develop its own operational model in tune to the types of projects it will be undertaking.

The GEF would also gain greater credibility by creating an independent secretariat and conducting a truly impartial evaluation. It would be more effective as a facilitator of diversified funding, using the strengths of the MDBs, bilateral donors, U.N. agencies, specialized intergovernmental organizations and the range of NGO project implementers. Additionally, the GEF will send a strong signal to the international community if it agrees to have a independent and impartial evaluation of its Pilot Phase, with its Implementing Agencies just coordinating it.

Conclusion: Biodiversity conservation is the one major environmental challenge that cannot be addressed through technological innovation alone. The role of the GEF in biodiversity conservation depends upon a clear definition of mission and niche, distancing from the approaches and philosophies of its Implementing Agencies, greatly enhanced collaboration with the NGO sector, and the assumption of a clear leadership on this issue within the international development community.

The opportunity to effect major change exists, but will require introspection and restructuring to be successful. In the future, the GEF could be looked upon as the institution that

turned the tide in efforts to preserve biodiversity, or as just another of the well-intentioned but basically fruitless development programs of recent years.

DRAFT CONTRIBUTIONS TO AN INTERNATIONAL BIODIVERSITY STRATEGY**I. The Challenge**

Biodiversity means the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. Diversity of life occurs at numerous hierarchical levels ranging from genetic variability to ecosystem variability.

Expanding human population has often resulted in the extinction of species and now threatens even entire ecosystems. Biodiversity is further threatened by the uneven distribution of resources among, and within, countries and development strategies that ignore implications for biodiversity. In many cases areas with the most biodiversity are also areas with expanding populations and increasing poverty. Many of the poorer countries have rural and urban populations that are locked into a downward spiral of poverty. To break free from the spiral they need incomes to pay for basic needs, including food, housing, health care, and education. Deprived of adequate income, rural populations tend to overexploit biological resources to hunt out animals within walking distance until nothing is left to hunt, to cut trees that will not have the opportunity to regrow, pasture their herds on land until there is no change for regeneration, and to plant domestic crops ill suited to their environment. Urban populations struggling to survive have not had the awareness nor the political power to prevent the dumping of toxic chemicals that poison their soil and water resources. In some cases governments have collaborated in the devastation of the environment for foreign currency. Because national governments record the sales of forests and other natural resources as national income and do not compute the permanent environmental losses as expense, such transactions are misrepresented as wealth producing instead of wealth destruction.

Changes in how humans use the land, particularly in agriculture and industry have affected the global environment. Land area devoted to cropland has expanded by 450 percent in the past 300 years. As the areas for expansion for agriculture have become scarce, agricultural has become more intensive and insecticides, pesticides, and fertilizer have contributed to the chemical pollution of rivers, lakes, and oceans. Industrial development has introduced pollutants into the biosphere, atmosphere, and oceans. As agricultural and industrial development decreases biodiversity they have the potential of removing parts of systems that are critical for the functioning of the ecosystems. Biologists estimate that during the next 20 to 30 years approximately 25 percent of all species may become extinct. The full implications for human life on earth are not known, but unless this trend is reversed, "...our children's

children will inherit a planet less hospitable than the world in which we came of age" (President Clinton on Earth Day, April 21, 1993).

While systems of biodiversity are legally the properties of individual nations, they are ethically part of the global commons. The loss of biodiversity anywhere diminishes natural wealth everywhere. The U.S. has a stake in maintaining its own national biodiversity and, in partnership with other countries, in maintaining the global ecosystem. The development challenge, for the United States, and particularly for the Agency for International Development (A.I.D.), is defined by a set of systems-oriented questions. How can people maintain forests and other ecosystems while they develop their local economies? How can people in developing countries achieve a decent standard of living without further degrading land, water, and air? How can people in emerging democracies reverse damage to biodiversity while moving towards a free market economy and functioning democratic institutions? How can people in industrialized countries reverse damage to local biodiversity and assist in regional and global solutions? How can the U.S. provide leadership in the implementation of a global biodiversity strategy?

II. Objectives

The U.S. is committed to reducing global threats to the environment and supporting environmentally sustainable economic growth and development. Maintaining biodiversity is a critical part of the approach for accomplishing these objectives. A second critical element in this approach but not a part of the biodiversity strategy is diminishing the impact of people on global climate change.

The goal of a global biodiversity strategy is sustainable use of the earth's biodiversity. Sustainable use is defined by the Biodiversity Convention as "the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations." Attainment of the goal of sustainable growth without threatening the earth's biodiversity is crucial at the domestic level as well as at the international level. It is imperative that the U.S. develop a national biodiversity strategy since without it the U.S. can not assume a credible leadership role in defining and implementing an international biodiversity strategy.

An international biodiversity strategy must cover a range of countries including highly industrialized, emerging democracies, and developing economies. The Department of State directs the

U.S. response to all international efforts, including one on biodiversity strategy. A.I.D., as the foreign assistance arm of the U.S. government, has the comparative advantage in working with countries that are emerging democracies and developing economies. An underlying principle of A.I.D.'s mandate is to conserve biodiversity as a necessary element in the promotion of sustainable development.

III. Strategy (Design, Approach, System)

The international biodiversity strategy is premised on the observation that ecosystems are disappearing at an accelerating rate and that as ecosystems disappear biodiversity is lost. Ecosystems can not be saved unless the effort is of immediate economic advantage to the people who live in and around them. What is needed is a systems-oriented approach to biodiversity, with an explicit discussion of the interactions between environmental systems and human systems. There is a need for clarification of biodiversity's broader connections with population growth and health, agriculture, forests, industry, and energy. There is also a need to consider the role of political and economic institutions, sociocultural systems, and individual attitudes and beliefs in decision-making concerning conservation and sustainable use of biological resources. The strategy focuses on the link between economic development and environmental issues in meeting the needs of the world's present and future population.

IV. Recommendations for Action

Several levels of interrelated actions are necessary. The implementation of action plans requires committed political leadership, access to scientific information and local knowledge), and strong and informed public participation in the process. Actions often require policy change to ensure that prices also reflect costs, for example, including in the price of gasoline costs associated with smog and global warming. Policy and regulatory controls from the top must be based on participatory planning and advocacy from the bottom.

Recommendations for concrete actions by the U.S. are given below.

A. Cooperate with other countries to improve adherence to the principles of the Biodiversity Convention

- Improve knowledge of the objectives and obligations of the Biodiversity Convention.
- Assist governments (including state governments within the U.S.) to build the necessary administrative and

legal structures (including enforcement and implementation mechanisms, development or elaboration of guidelines, assistance with drafting of legislation, and, exchange of legal and technical experts).

- Facilitate regular participation in international meetings by representatives of countries with emerging democracies and developing economies.
- Facilitate transmission of all relevant information about the Biodiversity Convention.

B. Support initiatives to study, conserve, and promote biodiversity

- Research the world's diversity. Support for research is essential. The hierarchical levels of diversity require a variety of research approaches. Several promising research initiatives are given below.

Rapid Assessment Program (RAP): The purpose of RAP is to investigate within several years, under documented ecosystems that might be local hot spots in order to make emergency recommendations for further study and action. The RAP targets a limited area such as a single valley or an isolated mountain. A RAP team is formed of experts on the elite focal groups, such as flowering plants, reptiles, mammals, birds, fishes, and butterflies that are sufficiently recognized to be inventoried immediately and can thereby serve as proxies for the whole biota around them.

BIOTROP from the Neotropical Biological Diversity Program: Instead of pinpointing brushfires of extinction, BIOTROP explores more systematically across broad geographic areas believed to be major hot spots or at least to contain multiple hot spots, e.g. eastern slopes of the Andes and the scattered forests of Guatemala and southern Mexico. The larger goal is to set-up research stations across the geographic area that embrace different latitudes and elevations. The work begins with a few focal organisms and expands to less familiar organisms. Studies of rainfall, temperature and other properties of the environment are added to the species inventory. These initial efforts have the potential of evolving into centers of long-term biological research.

Pilot Studies of the Biodiversity Research Consortium: This strategy recognizes the complexities of multiple stresses on interacting ecological systems in landscapes with multiple owners. The proposed pilot studies work on the development of methods and databases to allow scientifically defensible national assessment of priorities for habitat and biodiversity protection. The objectives are to analyze biodiversity nationwide, to search for correlations between species diversity and environmental diversity, to evaluate the comparative risk to biodiversity using species diversity, environmental diversity, and stressor information, and to begin developing approaches to managing environmental diversity in order to achieve species diversity goals.

Sustainable Biosphere Project: This interdisciplinary initiative aims to synthesize knowledge and to help provide policy and practice options for sustaining the Earth's natural resources and life support functions for current and future generations. The Sustainable Biosphere Project evaluates the ecological, economic, and social limits of seven ecological systems, including marine systems, around the world and present options for sustainable management of resources for these systems. Implementation strategies and tools will be recommended for each option, including supporting policies, practices, and human and institutional partnerships.

Global Biodiversity Assessment: The objective of the assessment is to provide an independent critical, peer-reviewed, scientific analysis of the current issues, theories and views regarding the origins, dynamics, assessment, measurement, monitoring, economic valuation, conservation and sustainable use of biodiversity globally. The assessment will examine the current status of knowledge on biodiversity, identifying the most important gaps. The assessment will review the effects of both natural factors and human activities on biodiversity, and consider priorities for action as well as the effectiveness of different conservation strategies.

Systems-oriented research methodologies: Systems approaches include microgeography which is the mapping of the structure of the ecosystem in

sufficiently fine detail to estimate the population of individual species and the conditions under which they grow and reproduce and gap analysis, which is the application of Global Information Systems to biodiversity and endangered species.

A combination of these research approaches will gradually build a description of the living world to create a fine grained image of global biodiversity. These various levels and types of information will ultimately be necessary to answer the following larger questions: do protected areas in fact embrace the largest possible number of endemic species? are surviving habitat fragments large enough to sustain the populations indefinitely? what is the most cost-effective plan to zone land for sustainable use; set aside inviolate reserves, sites for extractive reserves, buffer zones for part time agriculture and restricted hunting, and land for conversion to intensive agricultural production? where ecosystems are damaged, what is the cost-effective way to restore and sustain biodiversity at higher levels? what is the optimum way to increase the number and area of protected reserves?

- Identify ways to maximize the economic benefits of activities that promote biodiversity. Biodiversity inventories should include bioeconomic analysis, the broad assessment of the economic potential of the ecosystem. Bioeconomic analysis should include a range of applications for timber and wildlands products, identification of the relevance of seeds and cuttings to produce non-traditional crops, and the use of fungi and microorganisms as sources of medicine.

Biodiversity Support Program: A.I.D.'s R&D/ENR has established a Biodiversity Support Program, a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute. The program manages a competitive small research grants activity to support initiatives that enable people to conserve biodiversity while meeting their economic and social needs.

Biodiversity Prospecting: The World Resources Institute is trying to help develop a global legal structure for the use of genetic resources for sustainable development. They have identified conditions that need to be met before contracts concerning genetic resources will be effective, including the need for international agreements that settle questions as who owns bioresources,

how access to it can be controlled, and how intellectual property rights and profits can be equitably divided between local communities and prospecting corporations.

International Cooperation on Biodiversity Groups Program: A partnership among A.I.D./NIH/NSF designed a program to promote both economic growth and ecological conservation by demonstrating the value of biological resources from which natural products are derived. The program seeks to identify new bioactive natural products from plant and marine extracts and microorganisms and to help preserve the rich natural diversity of forests and oceans.

- Save what remains. This will require a mixture of programs, including maintenance of species and genetic stocks away from their natural habitats. **Ex situ** conservation is sufficient. At best, it will save only a few species that otherwise will not survive. The best hope for the world's biodiversity is the preservation of natural ecosystems.

Ex situ: Seed banks, perhaps the best example of **ex situ** conservation, have problems maintaining the viability of recalcitrant seeds. Other **ex situ** methods rely more realistically on captive populations that grow and reproduce. These methods include botanical gardens and arboretums, aquariums, zoos and other animal facilities in the world. The best efforts by botanical gardens, aquariums, zoos, and research facilities slow the tide of extinction by a barely perceptible amount. Advances in **ex situ** methods have made it possible to pose new questions: Could new species be created in the laboratory, after genetic engineers have learned how to assemble life from raw organic compounds? Can extinct species be resurrected from DNA still preserved in museum specimens and fossils? Why not just forget the problem and let natural evolution replace the species that are disappearing? Why not scoop up tissue samples of all living species and freeze them in liquid nitrogen and clone them later to produce whole organisms?

In situ: Expansion of reserves is necessary, from 4.3 percent to 10 percent of the land surface to include as many of the undisturbed habitats as possible is necessary. This requires a mixture of

action plans: Assign hot spots as priorities for conservation. Set aside inviolate reserves. Zone warm spots or areas less threatened or containing fewer species not found elsewhere for partial development. Place buffers strips around the preserves. Plan agricultural landscapes and harvested forest tracts for sustainable use.

These actions to study, conserve, and save biodiversity require management. There is a need to implement equivalents of the Endangered Species Act as a safety net for threatened forms of life in all ecosystems. In rare cases where funding is available species can be transferred to suitable habitats nearby, their original environments can be restored, or species can be exiled to botanical gardens, zoos or other *ex situ* preserves.

C. Support initiatives on understanding the human dimensions of global environmental change that relate to biodiversity

- Research the human causes and consequences of global environmental change, particularly biodiversity. The causes and consequences of global environmental change raise questions for both natural and social science. On the causes side, important human actions include cutting tropical moist forests, and treating the ocean as both inexhaustible cornucopia and convenient sewer. Much remains to be learned about the effects of these actions on biodiversity, with many puzzles for natural scientists to solve. For instance, how large an area is needed by certain ecological communities in order to remain viable? The issues for the social scientists center on the causes of human actions that affect global environmental change. On the consequences side, natural scientists need to address questions such as the implications of climate change on biodiversity. The key issues for the social scientist center on human responses to irreversible losses in biodiversity and its consequences on the global environment.
- Establish programs of targeted or focused research on the human dimensions of global environmental change, that is programs that advance understanding causes, consequences, and responses to global environmental changes. Several examples are given below.

On land use and production, what factors change systems of land use and food production toward either degradation of resources or sustainability? How do such changes correlate with population growth, technological development, and the evolution of social institutions?

On decision making in response to environmental change, how do individuals, families, communities, firms, and governments come to perceive changes in the environment as requiring action? How do they identify possible responses and assess the probable consequences of such responses?

On technology-environment relationship, what determines whether technologies developed and adopted in industry, agriculture, and other economic sectors mitigate or exacerbate environmental change? What are the roles of prices, regulatory practices, systems of property rights, standards of performance, and other characteristics in determining which technological options are pursued and adopted?

On conflict, how will global environmental changes intensify existing social conflicts or engender new forms of conflict? What techniques of conflict resolution or conflict management are likely to prove effective in coming to terms with these conflicts?

On international cooperation, what have we learned from experience with marine resources and transboundary pollution that is relevant to international efforts to deal with the loss of biodiversity? When do governments resort to international cooperation in dealing with biodiversity?

- Institutionalize cooperative research. Encourage and support effective methods of enhancing the partnership between the natural sciences and the social sciences, strengthening interdisciplinary research efforts among the social sciences, and increasing international collaboration.

V. Measuring Success

(How do you measure success in the study, conservation, and promotion of biodiversity?)

MEMO: FROM AIMEE TO DAVID
RE: BIODIVERSITY AND THE GEF
DATE: 7/28/93

David--this is a summary of the Conservation International paper on the GEF and biodiversity. I think it is helpful for background on the issue of biodiversity and the current and possible role of the GEF and biodiversity conservation.

CONSERVATION INTERNATIONAL THE GEF AND BIODIVERSITY

Out of some 10, 30 or even 100 million possible species on earth, science has thus far described only about 1.4 million species of animals, plants and microorganisms. Currently people think of biodiversity's value to revolve around either future potential for biotechnology innovations and new pharmaceuticals, or a handful of products from tropical countries. However, the real value of biodiversity based on current use is far more extensive.

Value of Biodiversity:

Global Intangibles:

Ecological Values. Ecosystem functions and evolutionary innovation which buffer the world against shifts in climate and crop yields, and perform carbon sequestration and watershed protection (and minimize climate change and ozone layer depletion).

Geopolitical Values. Ecoscurity is threatened by population growth, economic crises, and social unrest. These degradation-based crises easily escalate into national and regional conflicts (see Haiti and El Salvador).

Major Ecosystem Functions. Values such as watershed protection for urban and agricultural areas, for carbon sequestration and for water purification are only recently started to be looked at as values of an ecosystem, and are rarely incorporated into national income accounting procedures.

International Export Values. Overrated according to CI, this biodiversity value is the easiest to quantify and assess. It includes timber, rubber Brazil nuts, rattan, fish, meat and skins. With pharmaceutical companies investing in research of possible exports this will expand rapidly.

Regional Market Values. Regional market products are those products that enter into the regional economy and may change hands several times before they are finally consumed increase in value as they go along: i.e.,

Manaus.

Local Market Values. These products are exchanged or sold in a smaller area, and many differ very much from regionally used products due to perishability, low value, or locally thought to be of high value. These tend to only change hands twice.

Household Use Values. These products are provided by a given ecosystem and do not change hands, but are used by the individual or family who collect or produce them. (i.e., game meat, thatch for a house, bark for tea). They do not have cash value, but rather replacement value; when a forest ecosystem is cut to clear for cattle, the community must import regionally made products to replace those lost. If this is not done, then life becomes unsustainable, and the community must move, often to slums of an urban center adding to the burden of the nation.

Uses of Biodiversity:

Agriculture. Agriculture accounts for more than 30% of the GDP of low income developing countries; the value of agriculture trade is in excess of \$3 trillion annually; and much of our civilization rests on the utilization of seven grasses: rice, wheat, barley, oats, sorghum, millet and corn. These require continued genetic input from cultivars and wild relatives to maintain their resistance to pests and diseases. Diversity of the wild relatives of these grasses must be maintained to keep these critically important elements of global biodiversity productive over the long term. (see also coffee, and how its demise and that of its wild relatives in Madagascar can influence ecosystem security and the future of governments in Latin American and West Africa).

Human Health. Biodiversity is the source of 25% of drugs prescribed in the U.S., and it currently provides the base for primary health care for about 80% of people in developing countries (3 billion people) through traditional medicine. New diseases like AIDS emerge periodically, as do old ones we thought we had conquered, and new biodiversity-dependent technologies will be required to deal with them and a wide range of other health issues.

Industry. The 20 best selling drugs in the U.S. were all derived from compounds which included extracts from plants, animals or microorganisms, and with the rapid growth of the biotechnology industry this will happen even more in the future. Biotechnology will at least become the new Silicon Valley and usher in a new age. However, to realize its potential, the biotechnology industry must do everything possible to help maintain its full range of options, the vast raw material that global biodiversity represents.

Recreation. Biodiversity is vital to the maintenance of spiritual and psychological well-being, as many studies have shown the damaging effects on the human psyche from long term isolation from nature in urban environments. All this translates into good economics especially as ecotourism and other nature-based forms of recreation (e.g., fishing, hunting, hiking) become more popular. Nature tourism generates some \$12 billion annually worldwide, and is likely to grow even more rapidly in tropical countries where

it is already a major foreign exchange earner for several countries.

Setting Priorities:

We have to set priorities and focus heavily on the richest areas currently at greatest risk. The "**threatened hotspots**" approach is terrestrially-based, and focuses mainly on tropical rain forests because they are overall the richest of the terrestrial biomes. In its latest form, this analysis recognizes some 15 top priority tropical rain forest regions for biodiversity that occupy only 4% of the land surface of the planet, harbor at least 30–40% of all terrestrial biodiversity and a much higher %age of species at great risk.

Conservation International is currently building on the "threatened hotspots" approach to take into consideration all terrestrial biome-types, with conclusions so far that there are a number of non-rain forest terrestrial biomes that are also important (see Sonoran Desert, Pantanal, Cape Flora in Africa, etc.).

Another approach is the "**megadiversity country**" approach which recognizes that a relatively small number of countries, some 12 out of a total of 194 (National Geographic Society, 1993) that currently exist, are home to an inordinately large share of the world's biodiversity and therefore have tremendous responsibility. These countries may have close to 60–70% of the planet's terrestrial, marine and freshwater diversity within their borders.

Another approach focuses on the **origin and/or diversity** of major crop species of those agricultural species that are of greatest use to us. Although a limited approach that focuses only on a handful of widely used species, it shows the value of biodiversity to our own species.

The last approach mentioned by CI is that of the "**major tropical wilderness areas**." Focusing on tropical forests, these represent the few large blocks of tropical forest that remain largely intact. These wilderness areas are important storehouses of biodiversity, watershed areas, and as controls against which we can measure the management of the more devastated "hotspots." These are often the last places where indigenous people have any hope of maintaining a semblance of traditional lifestyles, and are likely to increase in recreational, aesthetic and spiritual value on an ever more crowded planet.

Regional, National and Local Priorities—the Hierarchy of Priority Setting.

The above categories look at the global level, but we need to look also at the regional, national, local, and taxonomic segments, or the "hierarchy of priority setting." A regional priority setting workshop can look at a biome encompassing several nations, a political unit like a country, or an ecosystem. This method pulls together published biological data, cartographical information, and satellite imagery, and then is refined by a pool of the leading experts on that particular region. The results of such exercises are then published in written and cartographic form and have had considerable catalytic impact.

Other kinds of data can then be superimposed on the biological

foundation using a Geographic Information System (GIS) to develop meaningful, scientifically-based conservation action agendas (see Amazon Basin and Papua New Guinea).

Soon there will be the need for national biodiversity strategies to fulfill the Biodiversity Convention. The above approaches will be useful to help create these national action plans.

Another approach to priority setting that focuses on species or groups of species is the taxon-based action plan effort by the Species Survival Commission of the World Conservation Union (IUCN). This commission consists of some 5,000 volunteer members organized into more than 100 specialist groups, and its groups have been in the process of developing action plans over the past eight years for organisms such as the lemurs of Madagascar, swallowtail butterflies, and African elephants and rhinos. These focus heavily on the so-called "flag-ship" species or "charismatic megavertebrates," and can be considered basic "building blocks" for other planning activities.

GEF Reform of Biodiversity Portfolio.

Since its creation in November, 1990, the GEF has assembled a portfolio of some 44 biodiversity projects with a total value of approximately \$300 million, which accounts for 43% of the total GEF work program. Projects range from \$1-3 million in nations such as Guyana, Cuba and the Seychelles to \$25-30 million projects in Brazil and Mexico.

By the end of 1993, the GEF must complete its restructuring, evaluate itself, and seek financial replenishment. In 1994, the Biodiversity Convention is expected to receive the necessary 30 ratifications and enter into legal force. The newly formed Conference of the Parties will decide on a future financial mechanism, and with the GEF as the interim mechanism, the reforms it adopts and implements over the next year.

Following are some basic problems based on experience to date, and concrete recommendations for improvement:

The GEF is currently performing a loose aggregate of different activities including carrying out some experimental projects, with some piggybacked on existing World Bank or UNDP projects. In general international funding for biodiversity conservation has come from bilateral donors, some inter-governmental organizations, and international NGOs and their foundation partners. The GEF must improve its collaboration with, and differentiate itself from these channels, otherwise donor governments will choose their own bilaterals as the preferred funding mechanism for biodiversity conservation.

The GEF's approach to date is doing more harm than good, i.e. its entry into biodiversity conservation has caused some other donors (U.S. foundations) to consider reducing their levels of support. Also, because of the modus operandi of the GEF's Implementing Agencies, there may be an overall reduction in small-scale, NGO or community-based projects, which have been the most effective for conserving biodiversity. This may lead to the GEF

missing the opportunity to fulfill its original mission of finding potential donors to fund key conservation projects.

The large size of GEF projects, and the relative inexperience of the GEF Implementing Agencies has led to great expectations in the project countries. This has led to infighting and jockeying among gov't and NGO communities to seek to gain advantage in access to GEF funds.

Incremental Costs: The GEF was designed to carry out the funding provisions of the Rio documents on Climate and biodiversity, with its specific mission to fund the incremental cost of achieving a global conservation benefit by implementing the treaties. This incremental cost was the amount over and above current expenditures to allow developing nations to provide a global conservation benefit that may not be in their immediate national interest. This goes against the values discussed earlier in the paper of **current** national, regional and local benefits.

This perpetuates the belief that biodiversity is not fundamental to a nation's economic viability; these values must be recognized by the GEF as a basic principle in all of its activities. The GEF should be at the forefront of a movement to integrate biodiversity into the mainstream of the development process, with the GEF as the vehicle to bring about basic change in its Implementing Agencies, (and then in the world view).

Project Cycle: The natural resources management sector of most GEF recipient countries are too small to absorb GEF projects; yet the GEF proposes huge projects of millions of dollars into sectors that cannot use the money effectively over such a short period. These large on-shot deals may create overnight institutions which will collapse when the international donor community pulls out. (see Colombia and the Choco where the grant is four times the natural resource agency's annual budget and is devoted to an area with little infrastructure; also Guyana where a \$3 million park is proposed but Guyana has no park service or infrastructure).

A diversified approach of a large number of small projects would allow the GEF to build both governmental and non-governmental capacity and allow for smaller, more flexible projects. It would also reduce infighting and make use of the real expertise that exists. The GEF Small Grants Programme for NGOs is a good first step, but is only 2-3% of the total GEF portfolio. It should be expanded and streamlined, and the GEF should adopt a more flexible funding mechanism that relies on small to medium sized grants to governments and NGOs and incorporates trust funds and endowments that ensure continuity of support beyond the 3-5 year time frame.

Trust Funds: The use of trust funds and endowments for biodiversity conservation is ideal for the GEF's emphasis on innovation, institution building, and cost effectiveness as well as continuity. Hard currency trust funds also hedge against currency devaluation, and address the concerns about project size, cycle, long term funding and local capacity building.

Use of NGOs: Expertise in biodiversity conservation lies mainly with local, national and international NGOs, and the GEF needs to have their involvement in projects. Field-based NGOs offer a wealth of technical expertise and local knowledge and it should become standard practice for GEF to consult local national and international field-based NGOs in project design and implementation. The GEF should consider greater partnerships with structures like the IUCN Species Survival Commission of 5000 biodiversity specialists from all over the world.

Priority Setting: The GEF must recognize that distribution of the planet's biodiversity is very uneven, and set priorities for action, rather than reacting only to political pressures or acting on a first-come, first-serve basis. The GEF needs a priority setting mechanism which will use the expertise of key NGOs, such as the Global Biodiversity Assessment currently being discussed by the GEF and UNEP, (in UNEP's capacity as the interim secretariat for the Biodiversity Convention. The GEF can work to design an international equivalent to our National Biological Survey, by creating a true partnership with NGOs that have taken a serious look at biodiversity priorities.

Institutional Considerations: The GEF should build on the UNCED model and hold public consultations with communities and constituencies likely to be affected by projects. Due to the past record of the MDBs, transparency and information disclosure are critical parts of building public trust. Biodiversity is by nature a participatory and local endeavor and cannot be brought about without local participation. The GEF needs to develop its own operational model in tune to the types of projects it will be undertaking.

The GEF would also gain greater credibility by creating an independent secretariat and conducting a truly impartial evaluation. It would be more effective as a facilitator of diversified funding, using the strengths of the MDBs, bilateral donors, U.N. agencies, specialized intergovernmental organizations and the range of NGO project implementers. Additionally, the GEF will send a strong signal to the international community if it agrees to have a independent and impartial evaluation of its Pilot Phase, with its Implementing Agencies just coordinating it.

Conclusion: Biodiversity conservation is the one major environmental challenge that cannot be addressed through technological innovation alone. The role of the GEF in biodiversity conservation depends upon a clear definition of mission and niche, distancing from the approaches and philosophies of its Implementing Agencies, greatly enhanced collaboration with the NGO sector, and the assumption of a clear leadership on this issue within the international development community.

The opportunity to effect major change exists, but will require introspection and restructuring to be successful. In the future, the GEF could be looked upon as the institution that turned the tide in efforts to preserve biodiversity, or as just another of the well-intentioned but basically fruitless

development programs of recent years.

MEMO FROM AIMEE TO DAVID

DATE: 7/28/93

RE: The Biodiversity Inter-agency Working Group Meeting of 7/30.

David--Peter Thomas from State OES sent over a copy of the "straw person initiatives" which were begun at the last meeting on June 30th, and are designed to initiate discussion for the Friday meeting. He said that the agencies involved have had mixed answers regarding whether or not they will be needing implementing legislation to carry out the Convention; some have said that they may need it, and Peter is going to try to nail them down by Friday. At the meeting we will talk about possible ideas for legislation strategy. Peter also said that he just sent up a copy of their strategy for ratification to Rafe and that you should be getting a copy of that from Rafe. If you don't by Friday, we can get it from Peter then. Finally, OES will report on UNEP's preparations for the first Intergovernmental Committee meeting (October 11-15).

Summary/comments on the initiatives:

We must come up with a proposal to establish a strong international program in support of conservation and sustainable use of biodiversity around the globe. The Convention and Agenda 21 call for strengthening of research capabilities to assess, study and systematically evaluate and observe biodiversity at national and international levels. These proposals are in response:

1) Integrate a strong international role into the National Biodiversity Center.

As a domestic clearinghouse, the Center (in conjunction with the National Biological Survey) can be a source of technical expertise for other countries and international facilities as well as a locus for sharing of biodiversity information internationally. (first step, work with North America: Mexico's National Commission on Biodiversity and Canadian institutions.)

Comments: where is the NBC, and is it part of Interior like the NBS set up by Secretary Babbitt?

2) Sponsor a significant program of international scientific and policy workshops on biodiversity.

These will focus on strengthening the research base on biodiversity and increasing communication at the interface between scientists and policy makers in the biodiversity area. These would encourage information exchange and scientific cooperation between countries and also focus on increasing training opportunities in the U.S. and abroad. (with NGO involvement as well).

Comments: Be sure that the focus of these workshops is scientific, not political; don't want G-77 to be turned off by U.S. control of workshops. Be sure communication goes both ways to learn what will best serve beginning countries, not impose our methods, but offer them as options/examples to be modified.

3) Support the development of country studies, national biological resource centers, and implementation of country strategies to conserve biodiversity.

The development of in-country institutions which bring together the people managing, using, and studying biodiversity is crucial for achieving long-term responsible management of biological resources. The U.S. will encourage this through broad technical cooperation and specific targeted support. Specifically 10 targeted countries will be identified as models for support of the development of biodiversity policies and institutions.

Financial and technical resources will be provided, and follow-up support will help realize the goals identified by country studies and national biodiversity strategies; countries who have already developed strong cooperation and have considerable expertise of their own will be targeted for the partnerships. (finance in part through seeking additional debt-reduction authority to promote environmental actions, and/or debt-for-nature swaps).

Comments: Again, be sure targeted countries are receptive; perhaps look at the Climate Change Country Study initiatives by Reifsnyder's group which take proposals by governments looking for help to implement the Convention. Work with countries.

4) Conservation of plant genetic resources.

Work on a global initiative of maintenance and conservation of wild and domestic plant strains to protect the world's agricultural base through:

- a strong and positive approach in the western hemisphere, with Canada as a partner, which focuses on the Andean zone and Mexico to: strengthen genetic resource institutions, improve communication through e-mail and databases, achieve more cooperation on genetic resource activities, and work to alleviate IPR(?) concerns and establish common interests within the hemisphere.

- support and maintenance of genetic resource institutions in eastern Europe.

- strengthen domestic capability to support this domestic outreach in plant genetic resources.

Comments: perhaps combine this with #3, although our offered support and encouragement can help countries (especially through one-on-one communication, i.e., competition is good) they do not want to be imposed upon. (sovereignty issues). We have good working relationships with Eastern Europe which needs lots of help and tends toward cooperation, so good focus for early targets.

5) Develop a program to identify and conserve biodiversity hotspots worldwide.

The U.S. will adopt a program to identify hotspots and work on a bilateral and regional basis, (through some of the initiatives above), by encouraging strong partnerships to bring government, international institution, NGO and Private sector resources to bear on developing financing and conservation strategies for these areas.

Comments: see the ideas brought up by Conservation International's paper on the GEF and biodiversity, especially discussion of approaches to preserving biodiversity.

6) Research and development in the field of ethnobotany and the relationship between biodiversity and its users.

Although much is being made about the potential medicinal benefits and pharmaceutical profits of biodiversity, it is already of great value to local communities using traditional medicines. There is a major need for study into the relationships between biodiversity and people in intact ecosystems. This needs to be integrated into the above initiatives and strong support for such research must be given.

Comments: see CI paper. Perhaps use AID-type programs?