LATIN AMERICA
Building Inter-American Biodiversity Information Network (IABIN)

# GEF Project Brief

Latin America and Caribbean Region
LCSEN

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| **Date:** December 23, 2003 | **Team Leader:** Douglas J. Graham |
| **Sector Manager/Director:** Abel Mejia | **Sector(s):** Information technology (100%) |
| **Country Manager/Director:** John Redwood | **Theme(s):** Biodiversity (P) |
| **Project ID:** P077187 | |
| **Focal Area:** B - Biodiversity | |

**Project Financing Data**

[ ] Loan  [ ] Credit  [X] Grant  [ ] Guarantee  [ ] Other:

**For Loans/Credits/Others:**

**Amount (US$m):** $6.0 million (GEF). At this time we have identified about $30 million in co-financing (through signed letters of interest) from about 60 different institutions for an overall project total of about $37 million.

| Financing Plan (US$m):          Source | Local | Foreign | Total |
|---|---|---|---|
| BORROWER/RECIPIENT | 0.00 | 6.13 | 6.13 |
| IDA PARALLEL FINANCING | 0.60 | 0.00 | 0.60 |
| IBRD PARALLEL FINANCING | 0.00 | 0.25 | 0.25 |
| GLOBAL ENVIRONMENT FACILITY | 6.00 | 0.00 | 6.00 |
| US, GOV. OF | 0.00 | 6.15 | 6.15 |
| FOREIGN MULTILATERAL INSTITUTIONS (UNIDENTIFIED) | 0.00 | 1.82 | 1.82 |
| NON-GOVERNMENT ORGANIZATION (NGO) OF BORROWING COUNTRY | 7.72 | 7.62 | 15.34 |
| **Total:** | 14.32 | 21.97 | 36.29 |

**Borrower/Recipient:** OAS

OAS (on behalf of the IABIN Council)

**Responsible agency:** OAS

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Washington, D.C. 20006

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**Estimated Disbursements ( Bank FY/US$m):**

| FY | 2005 | 2006 | 2007 | 2008 | 2009 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Annual** | 0.96 | 1.33 | 1.36 | 1.25 | 1.10 | | | | |
| **Cumulative** | 0.96 | 2.29 | 3.65 | 4.90 | 6.00 | | | | |

**Project implementation period:** 5 years

**Expected effectiveness date:**          **Expected closing date:**

## A.  Project Development Objective

### 1.  Project development objective:  (see Annex 1)

By supporting the development of the Inter-American Biodiversity Information Network (IABIN), the project development objective is to: (i) develop an Internet-based, decentralized network to provide access to scientifically credible biodiversity information currently existing in individual institutions and agencies in the Americas, (ii) provide the tools necessary to draw knowledge from that wealth of resources, which in turn will support sound decision-making concerning the conservation and sustainable use of biodiversity (in doing so this project will support implementation of Article 17 of the Convention on Biological Diversity (CBD) in promoting technical and scientific cooperation, and thus contribute directly to implementation of the CBD Clearing-House Mechanism [CHM]) as well as in other areas critical to development and poverty alleviation.

The project will implement IABIN at a regional level through:

- Assessing the information needs of the biodiversity community, decision makers and stakeholders in the region;
- Concurring on a set of standards, protocols, tools, and methodologies that will enhance the ability to search, retrieve, and analyze information across networks (including georeferenced data, quantitative and qualitative data, information, and knowledge);
- Digitizing relevant data held in non-electronic forms, thereby increasing the amount of biodiversity information accessible through the network;
- Exchanging scientific expertise through collaborative projects and training and other efforts to build capacity in human and technological resources;
- Producing value-added information such as studies and analyses; and
- Supporting national CHM nodes to help provide the clearing-house functions mandated in the CBD and in subsequent Conference of the Parties (COP) decisions.

The benefits are numerous. IABIN will:

- Promote and facilitate access to the information necessary for ensuring conservation and sustainable use of biological diversity in all appropriate sectors including agriculture, tourism, and forestry;
- Improve regional cooperation for biodiversity management through sharing of knowledge and expertise;
- Provide the capacity to address critical issues — invasive species, migratory species, amphibian declines, and the spread of diseases, among others — at a regional level;
- Allow the identification of gaps in knowledge and new fields of interest and facilitate consensus-building on a research agenda to support biodiversity conservation; and
- Improve the quality of biodiversity projects (both at preparation and during supervision) in the portfolio of the Global Environment Facility (GEF), the World Bank, and other financiers;

### 2.  Key performance indicators:  (see Annex 1)

Key performance indicators are noted on the Logical Framework in Annex 1.

## B.  Strategic Context

### 1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1)
**Document number:** 23084          **Date of latest CAS discussion:** N/A

The LCR Environment Strategy (June 2002) of the World Bank has four development objectives. The proposed project particularly supports the third objective of "development of enabling frameworks for sound environmental management". The Strategy states that this objective would be promoted by mainstreaming efforts including supporting targeted institution building such as promotion of decision-support systems (priority-setting tools and outcome-oriented monitoring systems). This project implements this part of the Environment Strategy as it will provide the informatics infrastructure and biodiversity information content required by the countries of the Americas to inform their decision-making.

### 1a. Global Operational strategy/Program objective addressed by the project:

The IABIN project is a biodiversity enabling activity as defined in the GEF Operational Strategy:

> *Enabling activities in biodiversity are those that prepare the foundation to design and implement effective response measure to achieve Convention objectives. They will assist recipient countries to develop national strategies, plans or programs... and to identify components of biodiversity together with processes and activities likely to have significant adverse impact on conservation and sustainable use of biodiversity...*

The main purpose of IABIN, to create an enabling environment for conservation and sustainable use of biodiversity in the Americas, fits perfectly as an enabling activity for biodiversity conservation. IABIN's strategic focus supports capacity building of regional, national and local partner institutions that provide data. IABIN also promotes thematic fora and development of information products and services to assist decision making.

The GEF's recently published Biodiversity Strategic Priorities highlight the need for "Generation and dissemination of best practices for addressing current and emerging biodiversity issues." The GEF recognizes that effective sharing of information and knowledge is very important to produce further improvements in results on the ground. IABIN as a hemispheric network addresses this issue. Through IABIN, state-of-art information is made available in a timely and effective manner to support decision-making. Knowledge networks are built among the participating country government agencies, NGOs, scientific institutions and private sector, and north-south and south-south exchange of information is promoted. Those networks are conducive to produce regional syntheses on conservation practices and sustainable use of a variety of biodiversity resources such as coastal and marine biodiversity, biological diversity important to agriculture, forest ecosystems, etc.

Other Strategic Priorities are also addressed through IABIN. Not only biodiversity information pertaining to protected areas and their buffer zones is shared through IABIN, but also national practices and specific interventions to achieve sustainability of protected areas systems will be more optimally shared among different audiences. Conservation in productive landscapes and productive seascapes beyond formally protected conservation areas and their buffer zones is promoted through IABIN, in the sense that this too requires good biological information, to ensure long term conservation of significant biodiversity of global importance outside protected areas.

IABIN works hand-in-hand with the CHM (Clearing-House Mechanism) of the Convention on Biological

Diversity (1992). The Convention has established CHM to:

- Promote and facilitate technical and scientific cooperation, within and between countries
- Develop a global mechanism for exchanging and integrating information on biodiversity
- Develop the necessary human and technological network

Cooperation between IABIN and the CHM has been the subject of a comprehensive Memorandum of Understanding (MOU) signed in 2002. The activities proposed for the implementation of IABIN will help fulfill, at the regional level, CHM's goals of exchange of biodiversity information and exchange of scientific and technical expertise. The CBD Secretariat has been an invited participant in IABIN consultations since the first experts' meeting in December 1997, and IABIN Focal Points are commonly the CHM Focal Points for their respective countries.

Surely what IABIN supports is implementation of measures necessary for achievement of the Convention's goals, targets, and objectives as defined in the Articles of the Convention (Article 16: Access to and Transfer of Technology, Article 17: Exchange of Information, and Article 18: Technical and Scientific Cooperation), the Strategic Plan, and the decisions of the Conference of Parties. The Convention has various work programmes and cross-cutting issues based on the work of Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and the COP, and this is necessarily reflected in the work of CHM. The networking of IABIN experts facilitate these work programs and cross-cutting issues. For example, the joint IABIN/NBII program of Invasive Species (I3N) collaborates with the Global Invasive Species Programme (GISP) and with the Convention's scientific body to develop a joint scientific initiative on invasive alien species. IABIN's Thematic Networks support the five thematic work programs and cross-cutting issues of the Convention. In the short term, IABIN will support the Convention in the following Thematic Programs: Dry and Sub-humid Lands Biodiversity, Forest Biodiversity, Inland Waters Biodiversity, and Marine and Coastal Biodiversity. In the area of Cross-Cutting Issues, IABIN will support the Convention in: Alien Species Ecosystem Approach, Global Strategy for Plant Conservation, Global Taxonomy Initiative, Indicators, Protected Areas, Public Education and Awareness, and Sustainable Use of Biodiversity.

By supporting these work programs and cross-cutting issues as noted above, IABIN promotes better decision-making in other sectors of interest to the GEF such as the UN Convention to Combat Desertificaion.

IABIN's objectives are fairly consistent with the WSSD Plan of Implementation paragraph 44 which states the need of actions such as to:
- Promote the ongoing work under the Convention on the sustainable use on biological diversity, including on sustainable tourism, as a cross-cutting issue relevant to different ecosystems, sectors and thematic areas;
- Promote concrete international support and partnership for the conservation and sustainable use of biodiversity, including in ecosystems, at World Heritage sites and for the protection of endangered species, in particular through the appropriate channelling of financial resources and technology to developing countries and countries with economies in transition;
- Strengthen national, regional and international efforts to control invasive alien species, which are one of the main causes of biodiversity loss, and encourage the development of effective work programme on invasive alien species at all levels; and
- Promote the implementation of the programme of work of the Global Taxonomy Initiative.

## 2. Main sector issues and Government strategy:

Many environmental issues are international in character, and addressing them requires the development of regional and global perspectives. Species migrate across geopolitical borders. Watersheds and ecosystems cut across national borders. International travel and transportation facilitate the introduction of species in geographic areas far beyond their native habitats, often with a negative impact. Actions taken in one country affect its neighbor's efforts to conserve biodiversity. To meet these challenges, the countries of the Americas need to work together to develop integrated approaches to biodiversity conservation.

In the early 1990s, various countries of the Americas were interested in improving the sharing of biodiversity information across national borders. Several countries were establishing national biodiversity information infrastructures to meet their obligations under the CBD, other treaty obligations, and their own internal conservation and development objectives. Senior officials recognized that collaboration among countries could enhance local initiatives, provide access to a greater store of information, eliminate duplication of effort, and leverage the scarce resources available to address the information needs of the biodiversity community. Both Agenda 21 and the CBD called for cooperation in the production and dissemination of information needed for the conservation and sustainable use of biodiversity.

IABIN was therefore officially mandated by the Heads of State at the OAS Summit of the Americas on Sustainable Development, held in Santa Cruz de la Sierra, Bolivia, in December 1996. Initiative 31 of the Santa Cruz Plan of Action states that the governments of the Americas should:

*Seek to establish an Inter-American Biodiversity Information Network, primarily through the Internet, that will promote compatible means of collection, communication, and exchange of information relevant to decision-making and education on biodiversity conservation, and that builds upon such initiatives as the Clearing-House Mechanism provided for in the United Nations Convention on Biological Diversity, the Man and Biosphere Network in the Americas (MABNet Americas), and the Biodiversity Conservation Information System (BCIS), an initiative of nine programs of the World Conservation Union (IUCN) and partner organizations.*

It is noteworthy that IABIN was specifically intended to build on the CHM. The latter operates under the complex political and institutional environment of the CBD, is worldwide in scope and not focussed on the Americas, and has limited technical capacity, and it was intended that IABIN could more nimbly attain its biodiversity goals supporting the CHM rather than operating from within its structure. This project however supports a series of actions to bring the CHM and IABIN closely together and this will in the future more formally align the two.

The Organization of American States (OAS), in its coordinating role for Summit follow-up, invited each country to designate an official IABIN Focal Point; to date, virtually all of the 34 member States of the OAS have done so (see http://www.iabin.net for complete list). IABIN was considered officially launched when the OAS Inter-American Committee on Sustainable Development (CIDS) endorsed IABIN, in a resolution passed on October 15, 1999.

IABIN was also recently strongly supported in the Ministerial communiqué to the Heads of State and delegations attending the Summit of the Americas which led to the endorsement of IABIN in the April 2001 Quebec Presidential Summit Plan of Action. The Plan of Action resolved to:

*Advance hemispheric conservation of plants, animals and ecosystems through, as appropriate:*

*capacity building, expanding partnership networks and information sharing systems, including the Inter-American Biodiversity Information Network; cooperation in the fight against illegal trade in wildlife; strengthening of cooperation arrangements for terrestrial and marine natural protected areas, including adjacent border parks and important areas for shared species; support for regional ecosystem conservation mechanisms; the development of a hemispheric strategy to support the conservation of migratory wildlife throughout the Americas, with the active engagement of civil society; and the promotion the objectives and the implementation of the Convention on Biological Diversity and the UN Convention to Combat Desertification.*

A great deal of background information on IABIN is available in the Project Implementation Plan (PIP) and on the network's web site (see http://www.iabin.net).

### 3. Sector issues to be addressed by the project and strategic choices:

To achieve hemispheric information-sharing needs, the project supports the implementation of IABIN, initially proposed by the Summit of the Americas. It is believed that IABIN is the best instrument to achieve the sector goals because of its integration with the CHM and Global Biodiversity Information Facility (GBIF; see www.gbif.org), tremendous support from governments (as shown by statements from the Summit of the Americas on Sustainable Development and official endorsement from 28 countries for the IABIN PDF-B grant), NGOs, and academic and scientific institutions.

The project will strategically focus on data standards and protocols (the basic information infrastructure for exchange of data), training and capacity building, network content, partnerships with regional and national organizations/initiatives, and having an impact on decision-making. IABIN has chosen that the project shall not include equipment investments, except those critical for the implementation of network-wide applications, as these are best met by the project's national counterparts. Needs such as telecommunication networks are beyond the scope of this project.

Although focussed on biodiversity information, the project includes extensive funding to develop links and partnerships with non-biodiversity communities, in order to foster and support a range of development and poverty alleviation goals.

Other networks exist or have been proposed for the Americas but IABIN fills a distinct niche occupied by no other network. In addition, as a highly decentralized network, strongly supported politically and institutionally, rather than a more traditional centralized network, we judge the sustainability of IABIN to be high compared to other network initiatives.

## C. Project Description Summary

### 1. Project components (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

The following is a description of the proposed project components ($ values below and in table need to be revised to reflect latest cofinancing figures).

**Component 1**($1,130,000 in GEF funds), **Interoperability and Access to Data**, will develop basic data standards and network infrastructure that will allow users to search and access biodiversity data and information through the IABIN Catalog Service and the Thematic Networks.
**Component 2** ($2,100,000), **Data Content Creation**, will provide data providers the tools, training, and physical capacity to make data available to users through the network.
**Component 3** ($500,000), **Information Products for Decision Makers**, will provide visualization and data integration tools to improve the usability of the data in the decision making process.

**Component 4** ($1,870,000), **Sustainability of IABIN**, includes project coordination, support for partnerships and communications (communication products, such as the IABIN portal, publications, meetings, etc.) and support for achieving the future financial sustainability of the IABIN Secretariat (as well as minor funding, on a declining cost basis, for the postion of Executive Director of the Secretariat). **Component 5** ($400,000), **Administration**, covers strictly administrative costs of the Executing Agency (contracting, procurement, disbursements, audits, etc.).

| Component | Indicative Costs (US$M) | % of Total | Bank financing (US$M) | % of Bank financing | GEF financing (US$M) | % of GEF financing |
|---|---|---|---|---|---|---|
|  | 0.00 | 0.0 | 0.00 | 0.0 | 0.00 | 0.0 |
| 1. Interoperability and Access to Data | 10.14 | 27.9 | 0.60 | 70.6 | 1.13 | 18.8 |
| 2. Data Content Creation | 18.84 | 51.9 | 0.00 | 0.0 | 2.10 | 35.0 |
| 3. Information Products for Decision Makers | 0.50 | 1.4 | 0.20 | 23.5 | 0.50 | 8.3 |
| 4. Coordination and Sustainability of IABIN | 4.56 | 12.6 | 0.05 | 5.9 | 1.87 | 31.2 |
| 5. Project Administration | 2.26 | 6.2 | 0.00 | 0.0 | 0.40 | 6.7 |
| **Total Project Costs** | 36.30 | 100.0 | 0.85 | 100.0 | 6.00 | 100.0 |
| **Total Financing Required** | 36.30 | 100.0 | 0.85 | 100.0 | 6.00 | 100.0 |

## 2. Key policy and institutional reforms supported by the project:

At a global and hemispheric level, conventions and policies are in place to promote the exchange and use of biological information (CDB, GBIF, Summit of the Americas, etc.). The project will support advances to national institutional policies in terms of data sharing, data access, and increasing opportunity for efficient use of information in decision-making relevant to biodiversity and the environment. But such reforms are not considered prerequisites to the implementation of IABIN.
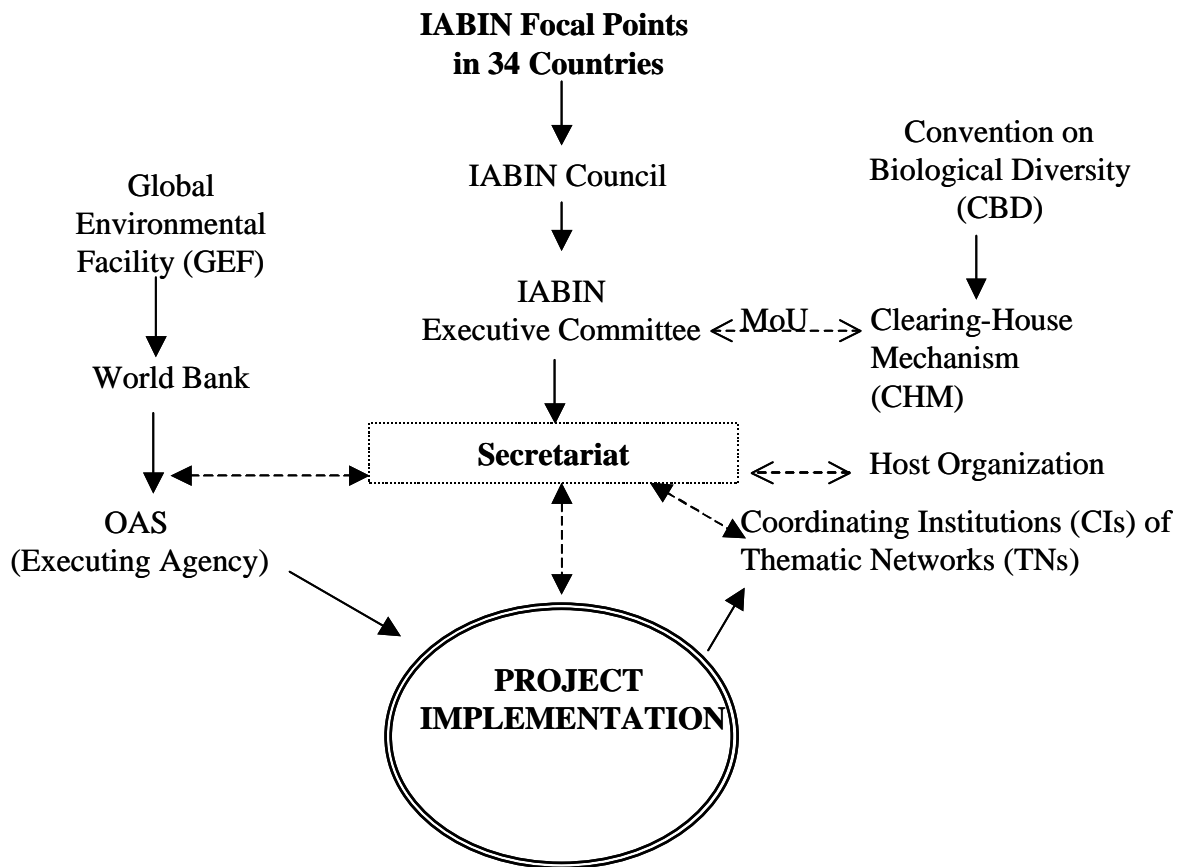
## 3. Benefits and target population:

An investment in IABIN will result in global benefits considerably exceeding those that would likely accrue over the next decade through national efforts alone. Some of these national and global benefits are covered in Annex 4 on Incremental Costs. All the countries in the Americas will benefit directly and/or indirectly from this project, especially communities whose development depends on biodiversity resources, people who are vulnerable to natural disasters, students and scientific community, and policy makers.

## 4. Institutional and implementation arrangements:

Organizations responsible for the project include the World Bank as an Implementing Agency of the GEF, the IABIN Council and the IABIN Executive Committee (IEC) as key policy guidance forums, the Executing Agency (the OAS), IABIN's Secretariat, the Coordinating Institutions (CIs) of the Thematic Networks, and the governments and institutions of the Americas who are both data-providers and information users. The following texts briefly elaborate on their roles (see more detailed texts in the PIP) and the following graphic illustrates their roles.

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│ **Institutional Implementation Arrangements for Project** │
└─────────────────────────────────────────────────────┘

**IABIN Focal Points
in 34 Countries**

**IABIN Council**

Global
Environmental
Facility (GEF)

Convention on
Biological Diversity
(CBD)

**IABIN
Executive Committee** <--MoU--> Clearing-House
Mechanism
(CHM)

World Bank

**Secretariat** <----> Host Organization

OAS
(Executing Agency)

Coordinating Institutions (CIs) of
Thematic Networks (TNs)

**PROJECT
IMPLEMENTATION**

**Implementing Agency**
The IABIN Executive Committee has requested that the World Bank be the Implementing Agency for this project. The Bank will receive funds from the GEF and disburse them to the Executing Agency. It will also have a strong role in the technical oversight of the Project.

**IABIN Council and IABIN Executive Committee (IEC)**
IABIN operates through a membership assembly called the IABIN Council which comprises:
·       national Focal Points (at present, thirty-two countries have officially designated IABIN Focal
        Points);
·       representatives from organizations, centers, institutions or initiatives of hemispheric or international
        scope;
·       a representative of the Diplomatic host organization (OAS); and
·       a representative of the Clearing House Mechanism.

The Council meets about once per year, or as determined by the Council, and makes all decisions regarding IABIN. The IABIN Executive Committee (IEC) guides the operations of IABIN between Council meetings

and executes the policy decisions of the IABIN Council. The Executive Committee consists of nine voting members, including:

- · the Council Chair (presently the U.S.) and Vice-Chair (presently Jamaica);
- · governmental representation elected at large (presently Antigua & Barbuda, Brazil, Colombia, Costa Rica, Ecuador, and Peru);
- · non-governmental representative (presently GBIF).

**Executing Agency**
The IABIN Council, the nominal recipient of the Grant, through a decision of the IEC in October 2003, chose the OAS as the Executing Agency of the GEF IABIN Project. The Executing Agency receives the funds from the World Bank and is responsible for the management and administration of the funds as well as being legally responsible for the technical implementation of the Project, on behalf of the IABIN Council.

Note that the Executing Agency will exercise its functions through two mechanisms: i) the Washington office of the OAS will be responsible for procurement, contracting, disbursements, auditing, and other administrative functions as well as providing some technical oversight; ii) decentralized Executing Agency consultants will be responsible for technical implementation of the project and will physically sit in offices provided free by the organization housing the Secretariat. The OAS will work under the direction and review of the IABIN Executive Committee.

By virtue of the status of the OAS, all expenditures (contracts, purchases and operating expenses) of the Project are exempt from taxation in all beneficiary countries.

**IABIN Secretariat**
The IABIN Network is envisioned as a highly decentralized partnership between governments and organizations but it is considered that it still needs a small Secretariat to provide a physical home for the Network.

The location of the Secretariat is currently being decided by the IEC. Three offers have been received from different countries to host the Secretariat and all include free provision of office space, connectivity, and computers. Successful negotiation of an agreement to host the Secretariat is a Condition of Negotiations for the Project.

Independent of the World Bank GEF Project, the Secretariat has the function of technical coordination of IABIN. The Secretariat will consist of: i) an Executive Director; ii) two or more technical/support personnel; and iii) office space, infrastructure (computers, connectivity, servers), personnel, and technical assistance offered by the organization that hosts the Secretariat. In the specific case of the GEF Project, consultants will be hired for the positions of the Secretariat's Executive Director (and a secretarial assistant) but on a declining cost basis, GEF support declining to 40% by the end of the project. Other consultants hired under the Project may or may not physically be located at the Secretariat but would not not formally be Secretariat staff.

**Coordinating Institutions (CIs)**
The Project proposal is in part built around the concept of Thematic Networks (TNs), each facilitated by a Coordinating Institution (CI), which will be competitively chosen during project implementation. The CIs have a special role in the coordination and promotion of key technical aspects of IABIN such as the development of functioning networks and development of thematic information resources.

Under Interoperability and Access to Data:
- Supervise the operation of the basic network infrastructure: IABIN Catalog Service and Thematic Networks
- Develop the basic infrastructure necessary to operate the IABIN Catalog and the TNs
- Operate and maintain the IABIN Catalog and the TNs
- Seek agreements on the use of standards and protocols to ensure compatibility of diverse data sources within the region

Under Data Content Creation:
- Develop and adapt tools for data content creation
- Development of training packages
- Quality control and validation of information
- Carry out or coordinate training
- Digitization of biodiversity data in the subject area of their TN
- Determine data content creation priorities
- Identify what information is required by decision makers and in what form
- Data hosting, if needed

**Partner Organizations in Implementation**

During the preparation phase of this project, potential contributors to IABIN were identified and letters of interest, including co-financing information, were received from 45 organizations. It is expected that during project implementation, these same organizations will form the core of a large set of organizations that will be the most active players in the Thematic Networks as data-providers and information users. However, if an institution has not submitted a formal expression of interest in the IABIN Project, this in no way precludes their active participation in the Project.

Annex 8 includes summary information on institutions and sub-regional networks who have indicated a formal interest in working with IABIN and a more general overview of the status of biological informatics in the Americas.

## D. Project Rationale

**1. Project alternatives considered and reasons for rejection:**

Alternative 1. Centralized network vs. completely distributed system?
IABIN is envisioned as an open, decentralized network with common standards, where users needing biodiversity information can find quality, relevant information through a portal web page. An advantage of a distributed approach is that responsibility is vested in individual network members, and therefore "ownership"of the network is broader leading to greater sustainability and a lower overhead in maintaining data currency and quality. A centralized network is not appropriate to achieve these goals as it requires long-term, external maintenance of a network and the expensive centralized management of data, while a distributed system can avoid both.

**2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).**

| Sector Issue | Project | Latest Supervision (PSR) Ratings (Bank-financed projects only) |
|---|---|---|

| | | Implementation Progress (IP) | Development Objective (DO) |
|---|---|---|---|
| **Bank-financed** | | | |
| Environmental Information Management Systems | - Conservation and Sustainable Use of the Mesoamerican Barrier Reef System Project (P053349) | S | S |
| | - Argentina Biodiversity Conservation Project (P039787) | S | S |
| | - Costa Rica Biodiversity Resources Development Project (P039876) | HS | S |
| | - Nicaragua Second Rural Municipal Development Project (P055823) | U | S |
| | - Africa Regional Environmental Information Management Project (REIMP) (P000003) | S | S |
| | - Brazil - Amazon Region Protected Areas Project (P058503) | S | S |
| | - Indonesia - Biodiversity Collections Project (P034080) | S | S |
| **Other development agencies** | | | |
| UNEP (GEF) | - Conservation and Sustainable Management of Below Ground Biodiversity <br> - In-situ Conservation of Crop Wild Relatives through Enhanced Information Management and Field Application <br> - GEF Biodiversity Data Management Project (completed) | | |
| UNDP (GEF) | - MBC Regional Project | | |

IP/DO Ratings:  HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

IABIN is also complementary to the Global Biodiversity Information Facility (GBIF). The goals of GBIF align well with those of IABIN; both are interoperable networks of biodiversity databases and information technology tools that will enable users to navigate and put to use the world's vast quantities of biodiversity information to produce national economic, environmental and social benefits. IABIN is an associate member of GBIF and GBIF currently occupies the single seat on the IABIN Executive Committee reserved for a non-governmental organization. It is expected that current GBIF funding will allow that initiative to take the lead in developing relevant network protocols and information management tools. IABIN will take advantage of GBIF efforts, and the implementation of IABIN will in turn support the discovery and organization of, and increased access to, information in the Americas relevant to GBIF.

### 3. Lessons learned and reflected in the project design:

The development of IABIN has benefited over the last several years from the experience of several projects and networks and from its own analytical work. See the web site for a major paper on lessons proposed for IABIN governance that was authored by Busby, a founder of Austrialia's Environmental Resources Information Network (ERIN).

Perhaps the most important lesson to date regards the inappropriateness of establishing networks that have strong centralizing tendencies, either in the management of data or in administration). Lessons learned from previous projects are that distributed networks are more appropriate and, if properly managed more efficient and sustainable. The proposed IABIN model takes into account these lessons through its design of a decentralized structure and a very small secretariat with minimal recurrent costs. Nevertheless, some core dedicated support staff are necessary for a network to function, as stressed in the IABIN governance paper.

Having said that, the secretariat and coordination needs for ensuring that a distributed network functions well should not be underestimated. The costs should be lower that would be required for large centralized databases, but without effective facilitation and coordination the network would not deliver at all. This takes time and effort.

The lessons from UNEP's Biodiversity Data Management Project (GEF) suggest that the project design take into account limited in-country expertise, low technical capacity and weak institutional arrangements. The IABIN Project thus focuses heavily on training. Furthermore, as a forum for development and promotion of standards, the survival of the network is not particularly dependent on participation at all times from all countries so there is a built-in flexibility which allows IABIN to be useful to those countries and institutions prepared to participate, when they choose to.

Given the partnership between IABIN and CHM, this project will seek to support the CBD's thematic and cross-cutting programs of work by promoting cooperation in the same six key areas of the CHM: tools for decision-making, training and capacity-building, research, funding, technology transfer, and the repatriation of information.  In order to achieve this, similar experiences have been examined during project preparation to apply the lessons learned from similar endeavors (and where appropriate IABIN is developing partnerships and coordination with these initiatives):

- **INFOTERRA** is the global environmental information exchange network of the United Nations Environment Programme that operates through a system of government-designated national focal points which at present number 177.  Its strength is that a national focal point is essentially a national environmental information center usually located in the ministry or agency responsible for environmental protection.  It is however essentially a referral system to individuals and not a direct source of information. http://www.unep.org/infoterra/.

- **BCIS,** was a consortium of ten international conservation organizations and IUCN programs working together toward a common goal: "to support environmentally sound decision-making and action by facilitating access to biodiversity data and information" (http://www.biodiversity.org/). BCIS, which was housed in Conservation International, essentially ceased operation earlier this year, largely because of the difficulty of having diverse NGOs share information and work together. The lesson learned in this instance is that it is important for a network to have political and institutional legitimacy at the country level; it is not sufficient for NGOs to agree to work together. It is believed that IABIN will eventually achieve the goals of BCIS (from the point of view of NGOs) because NGOs will have little choice but follow the rules and procedures laid down by the countries they work in in LAC.

- The North American Biodiversity Information Network (**NABIN**) is a collaborative network of people and institutions involved in the management and use of biodiversity information (in Canada, US, and Mexico). "This network aims to identify the best ways to bring together information sources to support decision making in the protection and conservation of biological diversity in North America".  NABIN seed funding and facilitation has leveraged national and international funding, information management standards have been chosen for the web site (the FGDC-CSDGM international standards for maps, and the Dublin Core standard for non-mapping data); The University of Kansas and associated researchers have developed applications in support to Climate Change scenarios that affect species' ranges and their habitats; a conservation initiative pilot application (http//www.rockies.ca/birds) is becoming a North American model to respond to transboundary conservation issues; etc. Although NABIN is at a smaller scale, it is an initiative similar in many ways to IABIN. It has however faded from view (although many of its discrete products and initiatives remain useful) in part because the three countries in which it works are all extremely complex and very advanced in terms of biological informatics and it was difficult for a small network (with one staff member) to make a major contribution in a crowded field. Although IABIN includes Canada and the US, it focusses on the countries of LAC where a small effort can yield a much greater benefit that would be possible in the US. The United States NBII works with NABIN but internationally, has chosen to focus its resources on supporting IABIN.

- The **ERIN**  network (Environmental Resources Information Network)of Australia is one of the leading information networks in the world.(http://www.deh.gov.au/erin/). This has been a model for many parts of the development of IABIN (the founder of ERIN, John Busby, wrote the defining governance paper for IABIN).

- The widely known Instituto Nacional de Biodiversidad (**INBio**) of Costa Rica is a scientific institution with social orientation that has obtained an international recognition and support due to its solid work and high standards.  "We are an institution leader in the search and popularization of the knowledge about biodiversity and its sustainable uses" is what its vision reads (http://www.inbio.ac.cr/en/default.html ).  INBio is currently funded by Government, donors (including the GEF through the World Bank), private sector and its own activities (INBioParque).  Its success is also due to a strategy to involve society in natural resource conservation and sustainable use.  In order to do this, INBio is promoting the use of biodiversity information in areas such as conservation, national planning, industry, education and science, agriculture and forestry, and ecological tourism. INBio is one of the most active participants in IABIN and we expect to fully benefit from their experience.

- The Mexican National Commission for the Knowledge and Use of Biodivieristy (**CONABIO**) is a case of relative success.  It is a Inter-Ministerial network devoted to build and maintain the Biodivieristy Information National System (SNIB).  CONABIO also offers advice to other governmental offices and sectors, develop special studies,  biodiversity wealth, follow up on international conventions and provide public service. The funds are administrated by a trust fund for Biodiversity and its main source of income is the Federal Government. http://www.conabio.gob.mx. CONABIO is again a major participant in IABIN.

Finally, the Banks' recently completed Regional Environmental Information Network Project (REIMP) from Central Africa is being analyzed for lessons learned.

**4. Indications of borrower and recipient commitment and ownership:**

The commitment to IABIN by the nations of the Americas was made at the highest levels of government, as evidenced by the signatures of the heads of state to the Santa Cruz Plan of Action (Initiative 31). Since that time, IABIN development has received significant support from the 32 countries that have designated official IABIN Focal Points. National support and participation may be measured by the hundreds of hours of staff time contributed toward these start-up and project development efforts and by the demonstrated willingness of agencies and organizations in-country to share biodiversity information. Fifteen countries in Latin America participated in the effort to harmonize metadata initiatives throughout IABIN, and a number of Central American countries are submitting metadata to an IABIN online catalog of biological datasets. As part of their commitments to comply with the CBD, countries are conducting activities that support the implementation of a regional clearinghouse like IABIN. The Biodiversity Information Network -- Brazil and the Biota/FAPESP Virtual Institute of Biodiversity are two examples. The rather remarkable formal, written endorsement of the PDF-Block B grant by 27 countries is another indication of the interest of the countries of the Americas.

Particularly notable is the contribution and commitment of the US. The USGS has been a major supporter of IABIN since its start-up. The contribution from the USGS includes significant funding for many technical pilot studies, allocation of dedicated staff, chairing the IABIN Executive Committee, and hosting a US IABIN web site that also served as the de facto IABIN portal until the recent establishment of www.iabin.net. Many major non-governmental players such as NatureServe and TNC have also expressed their support for IABIN and at a national level, a great many institutions are actively interested. During project preparation, 45 signed letters of co-financing or support were received from institutions throughout the Americas representing a broad range of government, private, and non-government stakeholders.

**5. Value added of Bank and Global support in this project:**

The Bank is the World's largest financier of the sustainable use and conservation of biodiversity. Over the last decade, Bank funding for biodiversity has involved over 226 projects with about US$1.0 billion of IBRD/IDA resources, over US$450 million of GEF funds and an additional US$1.2 billion in co-financing from other donors, governments, NGOs, foundations and the private sector - a total Bank-managed biodiversity portfolio of US$2.6 billion. Thus, involvement of the Bank in IABIN will not only channel the knowledge from Bank operations into IABIN, but also contribute to the integration of future Bank-managed biodiversity projects with IABIN.

According to a recent World Bank publication (*Cornerstones for Conservation: World Bank Assistance for Protected Areas*, 2003) the Latin America and Caribbean Region accounts for 45% of The World Bank Group's investments in protected areas in the 1988-2003 period. This same publication indicates that WB-GEF investments in protected areas in the region account for approximately 38% of total WB-GEF investment in the 1988-2003 period. This clearly shows the importance the Region has in global biodiversity conservation efforts and the World Bank's commitment.

The World Bank, along with the OAS, has traditionally played a key role in the meetings of the Summit of the Americas (Mr. Wolfensohn attended the last Summit in Montreal in early 2003). The IABIN Project represents an interesting possibility for the Bank to support a key Summit initiative. The Bank will also be able to bring to the project parallel financing from its other projects in the region (and from Bank-managed resources) as well as ensure a coordinating role for donor support and inter-governmental support.

The World Bank's role is rooted in its involvement in the start-up stage of IABIN, including provision of

about US$0.5 million in support for pilot activities during the period 1999-2000. Pilot activities included support for the invasive species component of IABIN, access to museum collections, development of regional metadata standards, and support for a unified taxonomic authority (Species Analyst). This support was from Dutch trust funds and staff time of World Bank specialists (see also http://www.worldbank.org/ca-env for details on these investments).

Finally, an application to the Bank's Development Grant Facility is currently being made and if approved in February 2004 woudl further strengthen the Bank's contribution to this effort.

## E.  Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

**1.  Economic (see Annex 4):**
○ Cost benefit          NPV=US$ million; ERR =  %  (see Annex 4)
○ Cost effectiveness
● Incremental Cost
○ Other (specify)


**2.  Financial (see Annex 4 and Annex 5):**
NPV=US$  million; FRR =  %  (see Annex 4)
See F.1 Sustainability

Fiscal Impact:


**3.  Technical:**
The design of IABIN and other technical issues are addressed fully in the technical description of the Project and in the PIP. The most difficult and complex technical issues to be faced during implemenation relate to the standards and protocols to be adopted. As has been found however in most similar initiatives, the hurdles to success are not technical but rather institutional.

**4.  Institutional:**


4.1  Executing agencies:

The Organization of American States (OAS)

4.2  Project management:

The OAS has executed many GEF Bank projects and the organization is demonstrably capable of effective project management.

4.3  Procurement issues:

See next section.

4.4  Financial management issues:

**Procurement**
The Organization of American States (OAS), as the designated recipient of the Grant funds in representation of the IABIN Council, will be responsible for compliance with Bank procurement procedures. The OAS has considerable prior experience in executing World Bank-implemented GEF

projects and has the necessary infrastructure and human resources for this function, not only in its Washington office but in any of its national offices, located in virtually every member country of IABIN. See Annex 6 for detailed procurement arrangements.

**Use of statements of expenditures (SOEs)**
Disbursements will be made on the basis of traditional Statements of Expenditures (SOEs) and Direct Withdrawal Applications (DWAs). In the case of the latter, disbursements will be made on the basis of full documentation for all expenditures made under contracts requiring prior review by the Bank, and contracts whose value will be raised above the prior review limits as a result of amendments. For all other expenditures, disbursements will be made against SOEs. All consolidated SOEs documentation will be maintained by the OAS for post-review and audit purposes. Reimbursement requests will be sent to the Bank on a monthly basis.

**Special account**
A Special Account in US dollars (or some other mechanism mutually agreeable to the Bank and the OAS) would be opened by the OAS, using its commercial bank - Bank of America. The Authorized Allocation to the Special Account will be determined during preparation. Monthly replenishment of funds will be made on evidence of satisfactory utilization of the previous advance(s) as evidenced by the documentation submitted in support of disbursement applications. Deposits into the Special Account and its replenishments, up to the Authorized Allocation(s), will be made initially on the basis of Applications for Withdrawals (Form 1903) accompanied by the supporting documentation specified in the Disbursement Handbook.

**Audits**
Ernst and Young are the GS/OAS (General Secretariat/OAS) external auditors. GS/OAS will request the auditors to perform a review of the project as part of GS/OAS annual audit review. Special arrangements were agreed between the OAS and the Bank to prepare an amendment to the terms of reference of the external auditors' contract to include the following paragraph: "The financial transactions of the IABIN project will be an integral part of the financial records of the GS/OAS which are audited on a yearly basis within the context of the external audit commissioned by the Board of External Auditors of the GS/OAS. The GS/GS/OAS agrees to furnish copies of these audit reports to the World Bank along with such other related information as may be requested with respect to any questions arising from the audit report."

In addition, internal auditing procedures are performed by the Office of the Inspector General charged with the responsibility to assist the Secretary General and the governing bodies to monitor the management of GS/OAS's programs and resources, and adherence to the rules and regulations governing the execution of these resources.. The internal control and auditing system contributes to assure an adequate follow up of the use of funds.

**Monitoring and Reporting Arrangements**
The Executing Agency will submit quarterly reports that document project progress to the IABIN Council and to the World Bank.  These quarterly reports will be summaries of progress reports compiled by the IABIN Secretariat and financial reports from the Executing Agency itself. These reports will draw on assessments, reviews, minutes of meetings, planning and programming documents, study reports, and other documentation prepared concerning the project. All key IABIN documents and all quarterly reports will also be posted on www.iabin.net.

Monitoring and evaluation of the project will be the responsibility of the Executing Agency, with the assistance of the IABIN Secretariat, the CI, and other participants as appropriate.  The World Bank, as

Implementing Agency, may proceed with monitoring and auditing the project as appropriate, following Bank procedures. The following indicators are benchmarks against which the Executing Agency can measure progress and establish consistent reporting.

**5. Environmental:**                      Environmental Category: C (Not Required)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

No safeguard issues are triggered by this project.

5.2 What are the main features of the EMP and are they adequate?

EMP not required.

5.3 For Category A and B projects, timeline and status of EA:
                       Date of receipt of final draft:

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

No environmental analysis has been carried out.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

N/A

**6. Social:**

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

During the review of the Project by the Bank's Regional Safeguards Unit, no social safeguard issues were identified. However, as there are interesting issues to be explored in relationship to indigenous peoples, the preparation team has prepared an annex on indigenous peoples issues (Annex 11).

6.2 Participatory Approach: How are key stakeholders participating in the project?

See next section.

6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

Key NGOs and institutions participate actively in the Council. Project preparation included consultation with virtually every significant NGO and institution involved in biodiversity informatics in the Americas (see detailed reports in the PIP). Activities under Component 1, 2 and 3 will widely solicit the participation of NGOs and instituions interested to take part in the implementation.

6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

N/A

6.5 How will the project monitor performance in terms of social development outcomes?

N/A

## 7. Safeguard Policies:

7.1 Are any of the following safeguard policies triggered by the project?

| Policy | Triggered |
|---|---|
| Environmental Assessment (OP 4.01, BP 4.01, GP 4.01) | ○ Yes ● No |
| Natural Habitats (OP 4.04, BP 4.04, GP 4.04) | ○ Yes ● No |
| Forestry (OP 4.36, GP 4.36) | ○ Yes ● No |
| Pest Management (OP 4.09) | ○ Yes ● No |
| Cultural Property (OPN 11.03) | ○ Yes ● No |
| Indigenous Peoples (OD 4.20) | ○ Yes ● No |
| Involuntary Resettlement (OP/BP 4.12) | ○ Yes ● No |
| Safety of Dams (OP 4.37, BP 4.37) | ○ Yes ● No |
| Projects in International Waters (OP 7.50, BP 7.50, GP 7.50) | ○ Yes ● No |
| Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)* | ○ Yes ● No |

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

N/A

## F. Sustainability and Risks

### 1. Sustainability:

IABIN essentially aims to develop and promote a new way of "doing business" when it comes to biological information. IABIN will further the use of common standards and protocols that will allow better access to and use of biological information. The sustainability of IABIN can thus be considered under two headings: i) sustainability of the concepts and principles of interoperability; and ii) more narrowly focussed, the financial and institutional sustainability of the IABIN Secretariat, as one means to the end of promoting the goals of IABIN.

Sustainability of Interoperability

If everybody adopted basic standards and posted data on the Internet in such a way that it could be used by others, there would be no need for IABIN. One of the measures of the sustainability of the interoperability concepts promoted by IABIN might therefore be the disappearance of the network itself if adoption of standards and a new "way of doing business" were sufficiently widespread.

The concepts of interoperability are not just sustainable in the future, they are inevitable. In wide scale consultations carried out during project preparation, there was not a single institution or country that was not interested in the concept of greater sharing of data and greater access to data. We believe there is also a "critical mass" consideration that will come into play during the lifetime of this project. As a critical minimal amount of data is structured and posted in a certain way (using IABIN/CHM standards) non-conforming institutions will have to adapt and adopt or be left behind. As an example, the speed with which millions of institutions worldwide have adopted HTML protocols (that is, have participated in the World Wide Web) for sharing textual information is nothing less than astonishing. As another example, although initially there were some competing standards, we have now witnessed the nearly universal adoption of FGDC standards for metadata.

Of course, just posting and making data available online does not ensure a critical mass. A key part of sustainability is whether or not information products are useful and usable, delivering what users want in

the form that they want it, and ensuring that potential users are well aware of what IABIN can do for them. IABIN's role in the next decade is to keep the ball rolling with these considerations in mind and to ensure all the countries in the Americas can access training and information in their own languages.

Short-Term Sustainability of IABIN

However, to achieve the above goals, there is no doubt that IABIN as an institution needs to benefit from financial and institutional sustainability over a period of at least a decade or two. It would remain to be determined if it will need to exist beyond that, perhaps for the purposes of training and finetuning and adopting standards to what will be the inevitable technological changes that will emerge.

The institutional sustainability of IABIN depends on the participation of the countries and institutions that constitute the IABIN Council. In comparison to other international networks we would regard the commitment of member countries and participating institutions to be remarkably high at this point in time, as demonstrated by co-financing letters received, high levels of endorsement of the project, and nearly universal attendance of Latin American and Caribbean countries at the last IABIN Council Meeting in Cancun in August 2003. The continuing interest and commitment of IABIN countries will of course be a function of the benefits they perceive to result from IABIN. As the project is however very strongly oriented to what is needed by all countries: standards development and training, we believe the benefits of participating in IABIN will be apparent. The partnership of IABIN with GBIF, CHM, and other non-American initiatives is also significant as IABIN will be a vehicle for ensuring that the best of what is being developed throughout the World is brought to bear in Latin America and the Caribbean. Finally, the very strong participation and support of the US Government will ultimately be critical to the success of IABIN; few would contest that the National Biological Information Infrastructure (NBII) of the US is probably the leading biological informatics network in the World and IABIN will serve to channel US support to all countries in the Hemisphere.

The Secretariat of IABIN has recurrent operational costs that must be met for the network to be sustainable. The Secretariat has however been designed with extremely low costs compared to other similar networks (such as GBIF for example, with annual recurrent costs in the millions of dollars). The IABIN Secretariat will have low recurrent costs and there is every reason to think that it would be feasible to generate that kind of financial support in the long run (one of the focus areas of IABIN is invasive species, whose economic costs can probably be estimated in the hundreds of millions if not billions of dollars annually in the Americas, so it is not difficult to envisage that major contributions of IABIN should result in modest support from different beneficiaries). The STAP reviewer (Annex 12) noted the same conclusion that financial sustainability of IABIN would not be an issue.

More specifically however, a number of measures are in place or will be developed to ensure financial sustainability of the Secretariat:

- Grants will be solicited from a variety of international organizations (to date, IABIN has been supported by grants and financial support from the OAS, the U.S. Agency for International Development, the World Bank, NatureServe, and others). The goals of IABIN are consistent with the goals of the GEF; the latter's biodiversity portfolio will benefit from IABIN in innumerable ways (see Section B1a.) and the GEF will have every interest in the future to continue supporting this initiative.
- The U.S. Agency for International Development (USAID) funded a study in 2001 to investigate and recommend a financial sustainability strategy for IABIN. Each of twelve types of potential funding sources were evaluated for their likelihood of success, as well as for the skills required to obtain funds from that particular source, the level of investment required to launch the enterprise, the risks involved, the possible

conflicts within the network, and the longer term availability of this type of funding. This study is a start to developing a financing strategy and will be further developed in the context of the IABIN Project.
- IABIN is negotiating the creation of a Foundation.
- The OAS has acted as the Diplomatic Host of IABIN since its inception in 1996 and has consistently provided a minimal level of financing. It is unlikely the commitment of OAS will change in the foreseeable future.
- During Project Preparation, the IEC carried out a competitive selection process to choose an organization to host the IABIN Secretariat. Three different organizations or international consortia competed for the right to provide free support to IABIN, at least for 5 years (at a minimum, office space, computers, connectivity, technical support). This was a good indication of the support that can be expected from key beneficiaries/actors who are committed to the concept of IABIN.

## 1a. Replicability:

As a continental-scale initiative, there are obviously few potential opportunities for replication of IABIN. However, as noted by the STAP reviewer, there is a strong possibility that IABIN could be replicated, perhaps in Africa or in Asia. At the present time, other than in Europe, there are no region-wide biological information networks. The potential replicability of IABIN in other areas should however be evaluated at the mid-term of this project.

## 2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

| Risk | Risk Rating | Risk Mitigation Measure |
|---|---|---|
| **From Outputs to Objective** | | |
| Existing data are not digitized, therefore not suitable for internet network | M | The IABIN Content Development Program (Component 2) will support multilingual training and provide technical leadership to participating countries to develop data for sharing through the IABIN network. |
| Internet infrastructures in the countries are in poor condition | M | All IABIN member countries currently have internet access, although the level of infrastructure varies. IABIN will finance hardwares for those less-developed countries to meet the minimum requirements to be able to access IABIN. |
| National authorities do not make the financial commitment to technical and scientific cooperation | S | See "incentive" under F1. Sustainability |
| **From Components to Outputs** | | |
| Data providers do not desire to share the data through internet | M | See "incentives" under F1. Sustainability. |
| Interoperability is not technically feasible and such technology is not available | M | IABIN will learn technical issues from private sector partners and other existing biodiversity information networks which are functional and in operation. |
| Existing national capacities including institutional, infrastructure, and human resources do not meet the requirement of | M | The IABIN Thematic Networks will promote capacity building and technology transfer in each theme/area (Component 1). Also, the |

| | | |
|---|---|---|
| IABIN compatibility | | IABIN Content Development Program (Component 2) will support training and provide technical leadership to participating countries to develop data. |
| **Overall Risk Rating** | M | |

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N(Negligible or Low Risk)

### 3. Possible Controversial Aspects:

The Project has no particularly controversial aspects.

## G. Main Conditions

### 1. Effectiveness Condition

N/A

### 2. Other [classify according to covenant types used in the Legal Agreements.]

Negotiation Agreements

Negotiation of a deal, acceptable to the Bank, between the IEC and a potential host for the Secretariat, for the physical establishment of the Secretariat, is a Condition of Negotiations.

## H. Readiness for Implementation

☐ 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
☐ 1. b) Not applicable.

☐ 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
☐ 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
☐ 4. The following items are lacking and are discussed under loan conditions (Section G):

## I. Compliance with Bank Policies

☐ 1. This project complies with all applicable Bank policies.
☐ 2. The following exceptions to Bank policies are recommended for approval.  The project complies with all other applicable Bank policies.

_____     _____     _____
Douglas J. Graham                              Abel Mejia                                        John Redwood

**Team Leader**                    **Sector Manager/Director**                    **Country Manager/Director**

# Annex 1:  Project Design Summary

## LATIN AMERICA: Building Inter-American Biodiversity Information Network (IABIN)

| Hierarchy of Objectives | Key Performance Indicators | Data Collection Strategy | Critical Assumptions |
|---|---|---|---|
| **Sector-related CAS Goal:**<br>To develop enabling frameworks for sound environmental management | **Sector Indicators:**<br>Incidence of increased sound environmental management | **Sector/ country reports:**<br>National reports to the CBD | **(from Goal to Bank Mission)**<br>Continuing political and financial commitment to IABIN by the countries |
| **GEF Operational Program:**<br><br>To create an enabling environment for conservation and sustainable use of biodiversity in the Americas | **Outcome / Impact Indicators:**<br>Changes in usage patterns of biodiversity in the countries in the Americas | Governmental reports, IABIN Secretariat and Project reports | Continuing political and financial commitment to IABIN by the countries |
| **Global Objective:**<br><br>To develop an Internet-based, decentralized network to provide access to biodiversity information, for sound decision-making concerning the conservation and sustainable use of biodiversity | **Outcome / Impact Indicators:**<br>Sound decisions for biodiversity management (e.g. invasive species) drawing on Project gathered information and taking advantage of an improved interoperability between specimens, species, and ecosystem networks resulting in novel combinations of datasets | **Project reports:**<br><br>Governmental reports; IABIN Secretariat and Project reports; and external evaluation | **(from Objective to Goal)**<br>Continuing political and financial commitment to IABIN by the countries |
| **Output from each Component:**<br>**Component 1:**<br>**Interoperability and Access to Data**<br>• Develop IABIN Catalogue Service<br><br>• Establishment of functional IABIN Network in five prioritized themes/areas. | **Output Indicators:**<br><br><br>• IABIN Catalog Service is functional and shows an expanding user base<br>• Number of data providers increased by 20% / year | **Project reports:**<br><br><br>Project biannual reports; web statistics; technical workshops reports; training programs reports and materials | **(from Outputs to Objective)**<br><br><br>• Data providers/users have basic infrastructure to access the Internet<br>• Internet-based information system used by a critical mass of providers and users<br>• Stakeholders maintain |

| | | | interest in the TNs |
|---|---|---|---|
| **Component 2: Data Content Creation** <br> Improve the availability of critical data and metadata and provide training to personnel on digitization of data | • Number of datasets consistent with IABIN interoperability standard increased by 20%/year <br> • At least 100 people trained / year | Project biannual reports; web statistics; technical workshops reports; training programs reports and materials | • Quality data to be digitized exists and is available <br> • Suitable personnel available for training <br> • Sufficient data can be made digitized to significantly impact on data availability |
| **Component 3: Information Products for Decision Makers** <br> Development of value-added applications | Develop 5 applications to mainstream the use of biodiversity information in decisions affecting production landscapes | Project biannual reports; baseline study on value-added applications | Decision-makers use applications |
| **Component 4: Sustainability of IABIN** <br> 4.1 Project coordination <br><br> 4.2 Partnerships and communications <br><br> 4.3 Financial sustainability | • Visits to IABIN Portal increases by at least 25 % / year <br> • Increase of 20 institutions / year formally allied to IABIN <br> • By year 5 fund raising reaches 100% of IABIN recurrent costs covered by this Project | Secretariat and Project reports | • Small Secretariat envisaged is sufficient to operate IABIN <br> • IABIN FPs remain engaged <br> • Partnerships can be sustained to ensure support to IABIN <br> • IABIN is able to continue responding to needs and interests of a wide range of member countries <br> • External funding can be mobilized for long-term costs of Secretariat not covered by host |
| **Component 5: Project Administration** <br> Administrative issues of the project (contracting, procurement, disbursements, M&E system, etc.) | Project M&E is rated satisfactory or more | Annual report; Audit report | The executing agency is responsive to oversight of the IEC |
| **Project Components / Sub-components:** <br> **Component 1** <br> 1.1 IABIN Catalog <br> 1.2 Species Thematic Network <br> 1.3 Specimens Thematic Network | **Inputs: (budget for each component)** <br> US$ 1.13 million | **Project reports:** <br><br> Disbursements and audit reports | **(from Components to Outputs)** |

| | | | |
|---|---|---|---|
| 1.4 Ecosystems Thematic Network<br>1.5 Invasive Thematic Network<br>1.6 Pollinators Thematic Network | | | |
| **Component 2**<br>2.1 Data content creation<br>2.2 Technical training on IABIN data capture tools | US$ 2.10 million | Disbursements and audit reports | |
| **Component 3**<br>3.1 Value-added products | US$ 0.50 million | Disbursements and audit reports | |
| **Component 4**<br>4.1 Project Coordination<br>4.2 Partnerships and Communications<br>4.3 Financial sustainability | US$ 1.87 million | Disbursements and audit reports | |
| **Component 5**<br>5.1 Project Administration | US$ 0.40 million | Disbursements and audit reports | |

**Annex 2:  Detailed Project Description**

**LATIN AMERICA: Building Inter-American Biodiversity Information Network (IABIN)**

By supporting the development of the Inter-American Biodiversity Information Network (IABIN), the project will: (i) develop an Internet-based, decentralized network to provide access to scientifically credible biodiversity information currently existing in individual institutions and agencies in the Americas, (ii) provide the tools necessary to draw knowledge from that wealth of resources, which in turn will support sound decision-making concerning the conservation and sustainable use of biodiversity (in doing so this project will support implementation of Article 17 of the Convention on Biological Diversity (CBD) in promoting technical and scientific cooperation, and thus contribute directly to implementation of the CBD Clearing-House Mechanism (CHM)) as well as in other areas critical to development and poverty alleviation.

A summary description of the components is provided here. Detailed descriptions, timetables, and budgets are outlined in the Project Implementation Plan (PIP).

**By Component:**

**Project Component 1: Interoperability and Access to Data  - US$10.14 million**
This component will create the network infrastructure necessary for users to search and access biodiversity data and information.  For this to happen, IABIN will seek to develop regional consensus on standards and promoting interoperability with other regional and global efforts, especially the Global Biodiversity Information Facility (GBIF).  Under this component, the project will seek agreement on the use of certain standards and protocols to ensure compatibility of diverse data sources within the region.  Areas requiring consensus on standards include:  communications, taxonomic information, metadata, controlled vocabularies, other authorities (names, institutions, etc.), and record structures for particular types of information (e.g., specimen data, bibliographic data, GIS, images, etc.).  Since these are issues addressed by various initiatives around the world, and the ultimate goal is to achieve global compatibility, IABIN will document and evaluate existing standards (e.g., GBIF and CBD framework), which may simply be adopted after appropriate consultation.  Annex 4 of the PIP includes a discussion of protocols and standards suggested for IABIN adoption. Subject to agreement by the relevant authorities, the goal should probably not be development of IABIN Standards but rather collaboration with the CHM to develop CBD standards.

IABIN's approach to biodiversity information access will be through the development of the IABIN Catalog Service and Thematic Networks.

IABIN will form partnerships with institutions in the Americas as its network evolves.  These partnerships will lay the foundation for providing access to the tremendous amounts of biodiversity related data and information contained within its' partner network. As IABIN is maturing as a network, capabilities to provide seamless access to this vast amount of information will be necessary. Therefore, the requirements arise for the creation of an "IABIN Catalog Service", designed to provide access to IABIN partner data and information.

IABIN will also support the development of a number of Thematic Networks (TNs), that will provide search and retrieval capabilities to data on a specific theme or area of interest. The data will preferably, but not exclusively, be distributed, depending on efficiency, existing infrastructure, and sustainability issues. The implementation of the TNs will help fulfill the objectives of IABIN and complement those of other networks and parallel initiatives, generating support for mutual efforts. The TNs are considered to be

mechanisms to:

- Develop standards specific to the needs of the TN but compatible with other TNs.
- Access information
- Build capacity for information sharing and exchange
- Coordinate technology transfer on a regional basis
- Facilitate the inclusion of biodiversity themes in national agendas
- Explore the need for the information in decision making.

## Selection of TNs

The following criteria were established for the prioritization of potential TNs:

- Theme is of interest to countries (demand driven) as determined by the consultations carried out during the PDF phase
- Valid regional or sub regional data exist
- Infrastructure exists or is planned
- Theme is a priority for global and regional programs
- Theme is a priority of the Convention on Biological Diversity and the 2nd IABIN Council meeting
- Network leverages other funds

Using the above information and criteria, the following five TNs have been identified as a priority for IABIN:

- Specimen Network
- Species Network
- Ecosystems Network
- Invasive Species Network
- Pollinators Network

Each TN will be coordinated by an institution, which will be selected by the Secretariat on a competitive basis and supported by a Technical Committee of Experts constituted by specialists from across the region, chosen by the Secretariat.  The Coordinating Institution (CI) is responsible for organizing the development of the TN, including recommendations on standards and protocols.  The latter are subject to approval by the IABIN Council.  The CI may also be responsible for the coordination of other activities, such as the development of tools for accessing data, entering data in the network, and training, which may be carried out by the CI or by other groups.

The project will also fund one full-time position, of a Technical Specialist, to provide support to all the TNs on interoperability issues. This specialist will be physically located in the Secretariat.

## 1.1 IABIN Catalog Service

Biological information is held by multiple institutions in varying formats, and is often available only within the country that has produced and maintains the information.  The need for this information, when appropriate, to be available throughout the IABIN network to other participating countries and partners is paramount to IABIN succeeding as a network on a regional and global scale.

The IABIN Catalog Service will provide a mechanism to locate, evaluate, and access biological data and information from a distributed network of cooperating data and information sources from across the Americas. The IABIN Catalog search service will allow Internet users to search through an assortment of standardized descriptions (metadata) of different information products (such as databases, maps, websites, other information systems, etc.) to identify those that meet their particular requirements. Once items of interest have been identified, the user would be directed to the data provider site where the source data can be downloaded, if the data provider chooses to make the data available.

IABIN has begun developing a pilot catalog service of biodiversity data and information resources satisfying the requirements described above. The Catalog Services are being developed in partnership with the National Biological Information Infrastructure (NBII), utilizing the existing infrastructure developed for the NBII Clearinghouse (http://metadata.nbii.gov). This functionality is being provided via the IABIN web site (www.iabin.net).

Under the existing partnership with IABIN, NBII has developed  interfaces in Spanish and Portuguese to its BioBot Search Tool and expanded its scope of content to cover additional categories of information of importance to IABIN. The IABIN BioBot tool facilitates easy access to web content, FGDC metadata, and other content of relevance to IABIN and its members. Under this agreement IABIN will benefit from further development of the NBII Clearinghouse. This approach allows IABIN to provide a cost-effective catalog service, while focusing the GEF funds into the implementation of a Metadata Program (Component 2).

The following activities will be carried out under this component, representing a total of about $350,000 in GEF funds (of which $250,000 for the full time position of a Technical Specialist for the Component as a whole):

1.      Creation of the Catalog Technical Working Group by the Secretariat staff.
2.      Three meetings of the Technical Working Group.
3.      Development of metadata creation tools in multiple languages.  These tools presently exist only in English.
4.      Modification of existing multi-lingual user interfaces as necessary.
5.      Develop multi-lingual training materials.
6.      Maintenance and Operations of the Catalogue.

### 1.2 Specimens Thematic Network

Some of the specimen data of any given country resides in its own museums and herbariums, although a significant part of the data resides in museums outside the country or hemisphere. In coordination with other TNs, the ultimate objective of this TN is to allow the user to consult and use specimen data, integrated with species and ecosystems networks. Repatriation of specimen data will be an important consideration in the implementation of the TN for Specimens.

The general objective is to define and implement the architecture, tools, standards and protocols to access specimen information located in institutions throughout the region, by using distributed access standards (probably those defined by GBIF and adapted to the necessities of IABIN).

Expected products, for a total GEF investment of $200,000, are:

1.      Information requirements from representative user groups evaluated and prioritized (building upon

the information obtained from the IABIN Regional Report prepared in the first PDF stage of this project)

2.      Policies for the use of information defined.

3.      Architecture, protocols, tools and standards for the search of specimen databases distributed throughout the region defined. Standards and protocols defined by GBIF will be evaluated and adapted for the development of the specimen network.

4.      A website in a central server, installed, that will allow searches and access to the information available.  This includes training for web administrators.

5.      Software developed for data providers, national partners and the central server required for the implementation of the specimen information network.  Includes training for trainers.

6.      Protocols, tools and standards defined and implemented in order to integrate the specimen network with the species and ecosystems networks.

7.      A specimen information network operational and maintained by the CI.

8.      Multi-lingual training materials developed.

## 1.3 Species Thematic Network

Species represent the fundamental unit for understanding the diversity of life on earth, and are the typical level of biodiversity that is protected by laws (e.g., CITES, endangered species legislation, IUCN Red Lists).  Beyond the basic need to classify species known to exist (taxonomy), decision makers require information about the status of species (imperiled or abundant), individual species requirements (natural history and phenology), and the best practices for managing populations, especially for vulnerable species.

The objective of this Thematic Network is to implement an electronic and institutional network dedicated to regional species information that supports the decision making process. Ultimately, tools developed by the Network should allow the user to consult specimen, species and ecosystems databases in an integrated manner (in coordination with other Thematic Networks).

Products, for a GEF investment of $200,000, are the following:

1.      Information requirements from representative user groups evaluated and prioritized (building upon the information obtained from the IABIN Regional Report prepared in the first PDF stage of this project)

2.      Technical Advisory Group workshop on GBIF standards and protocols as they apply to IABIN information priorities

3.      Recommendations for the architecture and protocols documented and distributed to the focal points and data providers

4.      Documentation for the Invasive Species and Pollinators Thematic Networks on how to use the species standards and protocols.

5.      Tools for entering species data

6.      Policies for the use of species information accepted and documented

7.      Web site on a central server that provides access to species data using distributed access tools adapted from GBIF

8.      Prototype tools for integrated searches of ecosystem, species and specimen information

9.      Training program for web administrators.

10.     On-line help system to report and explain advances and changes in protocols and tools

11.     Processes in place to ensure sustainability of the information system

12.     Species expert database and directory

## 1.4 Ecosystems Thematic Network

The ecosystem is the fundamental unit of resource management. Ecosystem maps are integrated planning tools that provide a record of the location and distribution of ecosystems within a management area. They create a framework for developing various site-specific uses.

The objective of this Thematic Network is to implement an electronic and institutional network dedicated to regional ecosystem information that supports the decision making process. Ultimately, tools developed by the Network should allow the user to consult specimen, species and ecosystems databases in an integrated manner (in coordination with other Thematic Networks).

Objectives
1.      Enhance the usefulness of ecosystem information for decision makers in government and civil society.
2.      Establish standards for providing access to information on ecosystems that is distributed among multiple institutions.
3.      Establish a hemispheric system for cross-referencing different ecosystem classifications.
4.      Integrate ecosystem information with specimen and species information from other IABIN thematic networks.
5.      Maintain the ecosystem information Thematic Network

Expected products, corresponding to a GEF investment of $250,000, are the following:

1.      A prioritized, annotated list of user types and their requirements
2.      Evaluation of ecosystem information system in the context of ongoing regional projects, and recommendations for improvements to the information system
3.      Metadata standards for ecosystem data adopted
4.      Tools for entering ecosystem data sets implemented by IABIN participants
5.      Policies for the use of information accepted and documented
6.      Online system for cross-referencing different ecosystem classifications.
7.      Prototype tools for integrated searches of ecosystems, species and specimen information implemented
8.      Training program for web administrators.
9.      Processes in place to ensure sustainability of the ecosystem information system
10.     On-line help system to report and explain advances and changes in protocols and tools
11.     Ecosystems expert database and directory

### 1.5 Invasive Species Thematic Network

The U.S. Geological Survey is proposed as the CI for the Invasive Species Thematic Network. The USGS will not however receive GEF funds, but rather will help coordinate the development of this TN.

*Rationale for Selection of the CI:*
The IABIN Invasive Species Information Network (I3N) was initiated by USGS/BIO in early 2001. Thirteen countries, covering most of the terrestrial area of the hemisphere, are in various stages of implementing I3N; three new participants signed up in August 2003. I3N has been recognized by CBD and GISP as an initiative to be supported. The IABIN council reaffirmed the key role of I3N at its third meeting. I3N consists of web-accessible, national catalogs of invasive species metadata. Tools at the disposal of the network include a cataloging and data output tool; a listserv; a virtual community; and an extensive bilingual web site that contains a repository for data submitted by those participants not able to serve their own, a Cataloguer download page with instructions, a search and browse page, instructions on

creating XML and on serving data on the internet, fact sheets, contact information, sample XML output, and all pilot project documents.

For this reason it is proposed that I3N be recognized as the IABIN invasive species thematic network. USGS/BIO and its partners in NBII have made major investments to increase the amount of publicly available biological information on invasive species and international initiatives. The NBII invasive species initiative funds I3N-related activities by developing the Invasive Species Information Node, encouraging NBII nodes to adopt data standards, participating in GISP activities, coordinating workshops, furthering agreements on protocols and standards, and providing technical assistance to NBII partners. The invasive species program of the USGS Biology discipline contributes to invasive species databases targeted for research and monitoring.

The Invasive Species Thematic Network will encourage the creation and standardization of national and sub-national databases, promote their interoperability, and create value-added products.

**Key Justification Facts:**
- Invasive species pose increasing risks to human health, native species, ecosystems, and national economies.
- The exchange of information across national borders is key to the detection and management of this threat.
- Interoperable national and sub national databases provide the basis for information exchange.
- The Invasive Species Thematic Network provides direct access to databases currently scattered and inaccessible.

Expected products, corresponding to a GEF investment of $150,000, are the following:

- Standards adopted
- Value-added products developed
- Search and retrieval tools developed
- Data entry tools developed
- TN operating

**1.6 Pollinators Thematic Network**

The action of pollinators ensures, for many sexually reproducing species, plant reproduction and the maintenance of genetic variability that plant populations need to survive and continue to evolve. There are hundreds of thousands of pollinators such as beetles, flies, birds, bats, wasps, ants, etc. Bees, however, are the most important pollinators of wild and cultivated plants.

Information on pollinators taxonomy is scattered and often unavailable. An electronic Global Species Database (GSD) is needed as a linking element to facilitate the integration of biological, ecological and agricultural information, in an efficient retrieval system.

An initial goal of this subcomponent is to deliver the electronic multilingual New World Bee Catalog, contributing approximately 30,000 names (valid names and synonyms) to a Bee GSD. The effort will build on the integration of existing local datasets such as the checklist of bee species from Brazil and regional checklists such as Moure's Catalog of Neotropical Bees, with bee databases from North America. The effort will be developed aiming at future coordination with relevant regional initiatives (Europe, Africa,

Asia and Oceania) towards the development of the World Bee Catalog. This catalog will be developed using IABIN standards, insuring interoperability with the Thematic Networks on specimen, species and ecosystems, and it will support IABIN's work with ITIS.

Other activities that will be carried out under this subcomponent are:

- Development of an online directory of experts;
- Expansion of the Bee Catalog to include non-bee pollinators;

The Pollinator Catalog will be integrated with the Specimen, Species and Ecosystem Thematic Network, thus providing the user a valuable tool that will address pollinator issues such as habitat loss, ecosystem functions, natural history, etc.

$180,000 of GEF funds are allocated to this subcomponent. Products are the following:

- On-line New World Bee Catalog contributing approximately 10,000 valid names and 20,000 synonyms to the GBIF Electronic Catalog of Life–ECAT and the Species 2000 –ITIS Annual Checklist.
- Online Directory of Experts
- Multi-lingual data entry tool
- Multi-lingual training materials
- Online Pollinator Catalog
- Pollinator Information System linking Pollinator Catalog to Specimen, Species and Ecosystem Thematic Networks.

**Project Component 2: Data Content Creation - US$13.46 million**

The incorporation of standards within IABIN needs to be accompanied by development of a formal Content Development Program. The IABIN Content Development Program will support multilingual training, and provide technical leadership to IABIN countries as they develop data for access within the IABIN network. While Component 1 will create the network infrastructure to access data and information through the IABIN Catalog Services and five Thematic Networks, Component 2 will improve the availability of critical data and metadata.

The Program includes:

- Carrying out training sessions on the use of data creation tools.
- Providing Grants to institutions with high quality data to support institutional efforts to make data available through the network.
- Data and metadata quality control.

Recipients of training and of grants will be chosen through a competitive funding mechanism using some or all of the criteria below:

- Linkage to IABIN's thematic priorities
- Available co-financing
- Availability of qualified personnel and protocols
- Relevance to multiple countries
- Commitment to IABIN standards and protocols
- Impact of filling data gaps
- Relevance for conservation and sustainable use

- Commitment to public access
- Sub regional balance

Consultants, chosen competitively as indicated in section 3, will carry out the training in coordination with the CIs for the Catalog and the Thematic Networks.

Very heavily co-financed, this component includes $2.1 million of GEF funds for projects plus $250,000 for a full time position of Content Manager (providing overall support to the Data Creation Component and also responsible for content on the IABIN Portal). Products will include:

- Trained personnel throughout the hemisphere
- Newly prepared metadata
- Newly digitized data
- Newly created data and metadata available for access through the IABIN network
- Repatriation of information from databases and collections outside the region

### Project Component 3: Information Products for Decision-Making - US$ 0.50 million

A fundamental objective of IABIN is to make biodiversity information useful to decision-makers in the public and private sectors. It is anticipated that the IABIN Portal will host a series of value added applications that will provide capabilities for advanced presentation, analysis, and assessment of biological data held within the IABIN network. These applications could be as simple as a specialized reporting for a select group of biological data or as complex as the species prediction capabilities of LifeMapper ( http://beta.lifemapper.org).

This component will address the need for tools that will allow the user to:
- Visualize data and information;
- Ask questions from biodiversity and socio-economic databases in an integrated manner; and
- Utilize data with models to develop scenarios (options and consequences) for decision makers.

The component will be implemented through the following activities:

- A study will be carried out to identify the existing good examples of value-added information products.
- Specific value-added applications will be undertaken with designated IABIN partners as discrete projects. These discrete projects will be based on the extension of existing information products or information systems, making them available for decision makers.
- Periodic review of the use that has been made of the information and tolls, and how useful the information was, in order to provide feedback and allow improvements in the tools and data.

### Project Component 4: Sustainability of IABIN - US$4.56 million
**4.1 Project Coordination ($250,000)**

Under this subcomponent, we include the costs of an IABIN Executive Director and his or her assistant. These costs would however only be covered on a declining cost basis; the GEF Project support for these two Secretariat positions would drop to 40% by the end of the project. The Executive Director would act as Project Coordinator and will sit physically in the Secretariat. The cost here

**4.2 Partnerships and Communications**

This component further develops inter-governmental and inter-institutional relationships as well as relationships with existing programs.  This will be done through:
- Convening five IABIN Council meetings during the lifetime of the project,
- Negotiating agreements with key organizations and initiatives,
- Maintaining close cooperation with the CHM programme manager at the CBD Secretariat,
- Collaborating with CHM national focal points and IABIN focal points,
- Producing a variety of communication tools such as publications, newsletters, and brochures
- Participating in other global and regional biodiversity informatics initiatives, such as GBIF, and
- Targeting better information access to indigenous people.

The IABIN Council meetings will be done in coordination with CHM meetings.  It is expected that IABIN will cover the costs of the IABIN Focal Points attending the first meeting.  Subsequent meetings, however, will be only partially covered by GEF funds and it is expected that the participating countries will begin to cover the participants  travel cost.

**4.2.1  The IABIN Portal**
While IABIN is envisioned as a distributed system of data providers in which data are maintained and controlled by the provider, a single point of access to the integrated resources of the network is a key component of IABIN.  The IABIN Portal, on the web is in the process of becoming a gateway to biodiversity information in the Americas as well as a mechanism for facilitating interconnection of different institutions and agencies concerned with biodiversity conservation. The Portal provides simple user interfaces for sharing knowledge, discussing issues, accessing projects and statistical databases, and registering and profiling users.

The vision for the IABIN Portal is that it will be the "go to" website for users and providers of biodiversity information in the Americas.  Through the use of standards, it will provide ready access to information throughout the region, whether that information is in relational databases, documents, images, map products, or other data sources.  The Portal will serve as an online access point for the Americas and a coordination center for IABIN partners and users.

The major components of the IABIN Portal are:
- General information
- IABIN Catalog Service
- Access to Thematic Networks
- Project collaboration areas and tools
- Specialized value-added applications
- Feedback mechanisms
- Biodiversity Informatics Links

**4.3 Financial Sustainability**

To date, IABIN has been supported by grants from the U.S. Geological Survey, World Bank, OAS, U.S. State Department, U.S. Agency for International Development, and the Brazilian Government, and by in-kind contributions from nations of the hemisphere. An increasing number of nations have committed to the development of IABIN and will support it with in-kind contributions at varying levels according to their

capacities. However, continued development and maintenance of the network requires that a strategy for the financial sustainability of IABIN be developed and implemented.

Financial sustainability for IABIN has two components. First, sources of recurring funding for the operation of the Secretariat and other periodic activities (e.g., IABIN Council meetings) must be identified. Second, participating agencies and institutions must be assured of continued internal funding for IABIN-related activities that are their in-kind contributions to the development of IABIN. GEF funds can kick-start or top-off projects and is expected to facilitate the fund-seeking process by helping its members identify potential funding sources and potential partners with whom collaborations can be formed to leverage available resources.

To provide stability to the network's operational structure, it has been recommended that the funding strategy for IABIN be a mix of activities. Because there is a very low probability of obtaining all financial resources from a single source, the financial sustainability of IABIN will be achieved by a combination of several strategies directed at different types of funding sources.

The most promising strategy for IABIN sustainability in future years, beyond the GEF funded program, is to use professionals to seek and acquire support to: 1) capitalize an endowment (using the associated interest for fund development), and (depending on the type and restrictions associated with new funds) 2) educate potential donors and conduct related fund development activities. The fund development initiative for IABIN sustainability would be administered by an established, experienced, biological-informatics focused, fund-raising, private non-profit organization on behalf of IABIN. IABIN specific funds would be placed in a separate and dedicated account in the fund development organization. IABIN related sustainability activities/expenditures of the fund development organization would require coordination with and approval of the IABIN Executive Committee.

Sources of funding for IABIN sustainability will initially be sought by the Executing Agency, IABIN Secretariat, IEC, IABIN partners, and the World Bank. Primary targets for funding will be governments, foundations, partner organizations, and the private sector (i.e., corporate sponsorships from information technology companies).

It is recommended that an evaluation of the project be carried out during its fourth year of execution in order to determine potential areas of expansion of the project that could be used as a baseline to fund raising campaigns.

**Project Component 5: Project Administration - US$2.26 million**
This component is to cover strictly administrative costs of the Executing Agency (contracting, procurement, disbursements, audits, and evaluation). Detailed cost tables prepared by the OAS and now in review with the World Bank establish a cost of about $450,000 for the administration of the project.

**Baseline Scenario**

In the baseline scenario, institutions responsible for collecting and maintaining information on biological diversity do so independently without a formalized information sharing mechanism, or at best ad hoc sharing between a small number of organizations. Information sharing between institutions is informal and limited to the sub-regional level.

During preparation of the project, we requested estimates of baseline funding and parallel financing from a great many institutions across the region. Activities by the 60 co-financing academic, scientific, governmental and non-governmental institutions for baseline activities account for US$28 million. The baseline activities are generally: (i) Improving access to databases at institution level ($0.5 million); (ii) Dataset creation at institution level for various biological information datasets ($26.77 million); and (iii) Maintaining sustainability of databases ($0.77 million). We consider this the baseline funding given that the Project will most likely work with the institutions that were sufficiently motivated and interested to sign agreements. However, it could just as easily be argued that if we were to include all institutions in the Americas that deal in biological information and that will be future beneficiaries of IABIN, baseline financing would be in the hundreds of millions of dollars per year.

Under the baseline scenario, different institutions collect and maintain biological information that is of importance to local biodiversity. However, without a uniform structure and standards to create and record the information, compatibility and knowledge sharing is not realized between institutions. The dominant share of the baseline activities, i.e. over 95 percent of the costs, are for data creation activities. Activities to develop a network to connect the different databases in the region to facilitate efficient information sharing are minimal.

**GEF Alternative**

The GEF  alternative would expand on the existing set of data in the region and promote greater management and coordination in the collection, sharing and use of biodiversity information relevant to decision making and education. It would result in the creation of information compatible to region-wide standards and an internet based network to promote inter-exchange of  scientific knowledge crucial for sustainable use of biological resources.

Due to the international nature of many biological resources such as migrating species, international watersheds and ecosystems, activities implemented in one country will often cause serious consequences in other surrounding countries.  The GEF alternative addresses this issue by facilitating exchange of information across borders.  Furthermore, implementation of the GEF alternative would develop research and other value added activities of a regional scope that would not have been possible under the baseline scenario.  Policymakers would therefore be able to better address issues related not only to national biological resources but those with regional as well as international consequences.

## Incremental Cost Matrix

| Component 1: Interoperability and access to data | Baseline | Alternative | Increment (of which GEF) |
|---|---|---|---|
| Cost (US$ million) | 0.5 | 10.64 | 10.14 (1.13) |
| Domestic Benefits | * Institutes in the region construct databases without a uniform compatibility standard, thus hindering information sharing.<br><br>* Individual databases remain unlinked | Develop regional consensus on standards for communication, taxonomic information, metadata, controlled vocabularies, and record structures to ensure region-wide compatibility to promote greater coordination, better management and decision-making of biological information | |
| Global Benefits | | Provides a network in the region to exchange information relevant to conservation and sustainable use of biological diversity to help fulfill the mandate of the Clearing House Mechanism of the Convention on Biological Diversity | |
| **Component 2: Data Content Creation** | **Baseline** | **Alternative** | **Increment (of which GEF)** |
| Cost (US$ million) | 26.77 | 45.61 | 18.84 (2.1) |
| Domestic Benefits | Each institution creates their datasets according to different standards and structures | Multilingual data creation tools will enable institutions to create compatible datasets and a high quality metadata set | |
| Global Benefits | | Creation of region-wide compatible datasets will help fulfill the mandate of the Clearing House Mechanism of the Convention on Biological Diversity | |
| **Component 3: Value Added Application** | **Baseline** | **Alternative** | **Increment (of which GEF)** |
| Cost (US$ million) | 0 | 0.5 | 0.5 (0.5) |
| Domestic Benefits | Region-wide applications of datasets is hindered due to | IABIN portal will host value added applications that will | |

| | | | |
|---|---|---|---|
| | incompatibility between institutions using different data structures | provide capabilities for advanced presentation, analysis and assessment of biological data | |
| Global Benefits | | Value added application will contribute to a greater understanding and better decision-making of conservation and sustainable use of biological diversity | |
| **Component 4: Sustainability of IABIN** | **Baseline** | **Alternative** | **Increment (of which GEF)** |
| **Cost (US$ million)** | 0.77 | 5.33 | 4.56 (1.87) |
| Domestic Benefits | * Regular maintenance and upgrading of respective databases<br>* Awareness building to facilitate database use | The IABIN secretariat will ensure financial sustainability and quality control even after the completion of the project | |
| Global Benefits | | Same as domestic benefit | |
| **Component 5: Project Administration** | **Baseline** | **Alternative** | **Increment (of which GEF)** |
| **Cost (US$ million)** | 0 | 2.26 | 2.26 (0.4) |
| **Total** | **Baseline** | **Alternative** | **Increment** |
| **Cost (1000 US$)** | 28.04 | 64.34 | 36.3 (6.00) |

**Review By Mary T. Kalin Arroyo**

3 November, 2003

## 1. SCIENTIFIC AND  TECHNICAL SOUNDNESS OF THE PROJECT

The basic premise of the Proposal "**Building the Inter-American Biodiversity Information Network**" (hereafter IABIN) is that a mechanism designed to facilitate the availability of knowledge on biodiversity *via the internet* will speed the conservation and sustainable use of biodiversity in the Americas. This premise is theoretically sound.

- A major deterrent to advancing in biodiversity conservation worldwide is the lack of accessibility to information, and the existence of information in many different formats.
- Many of the major environmental problems in the Region cross country borders, and thus require access to out-of-country information.
- Revealing the knowledge gaps provides an important stimulus for filling in lagunae in a timely manner
- Finally the participation of individual countries should provide a stimulus for others to follow suit.

**The last point should not be underestimated in a period in which individual countries strive to obtain global recognition on many fronts.**

Notwithstanding the above, success of the project will depend on the availability of sufficient biological, ecological and technological information. Web-based information only becomes useful at the decision-making level when the information is of a) exists in a critical mass, and is of b) high quality. This brings up the issue of timeliness of the initiative, vis-a-vis strengthening other areas, such as data collection per se.

**Over the past 10 years it can be said that a growing body of high quality electronically-stored information on biodiversity has emerged in the Americas, including in the countries of Latin America**. This body of information is increasing at an exponential rate. Several countries now have electronic herbarium and/or museum-based specimen-based data bases. In some cases (e.g. Chile), these data bases cover the practically all relevant herbarium specimens in the country, and include retroactive or forward georeferencing. Particularly impressive are the efforts of CONABIO (México) and INBio (Costa Rica), where a broader spectrum of organisms is considered. At the taxonomic level, TROPICOS (Missouri Botanical Garden) should be mentioned. Most of these major data bases interface easily with state-of-the art GIS technology. Some countries have recently completed GIS-based vegetation surveys, which should be useful when it comes to ecosystem catalogs. Where the information exists, it tends to be of high, academic-level quality.

The proposal has done a good job in identifying many of the sources of electronically-stored biodiversity information (listed in Annex 6). However, there are still major gaps in many countries, which need to be filled to make an initiative like the IABIN highly successful in the long-run. Some of these gaps presumably will be filled by GBIF, but much more needs to be done. The model adopted by IABIN is useful, in that many of the protocols need to retrieve and store information will be ironed out in advance of development of new data bases. This alone should speed the retrieval of information, although the lack fund to employ manpower in the various countries will always constitute a hurdle. In this sense it seems essential that GBIF and IABIN maintain close and effective contacts at the planning stages.

**The usefulness of information retrieval via the IABIN mechanism is extraordinarily important for the success of IABIN in terms of biodiversity conservation and the mandate it holds.** Undoubtedly, the catalogs produced by certain Thematic Networks will become useful at a much faster rate that those of other networks. A good example is the initiative on invasive species. Data bases on invasive species have the potential to serve as early-warning systems and planning instruments at the regional, landscape and local levels within the timeframe of the project. Data bases of invasive species represent a small subset of the total species information, and thus can be compiled relatively rapidly. Invasive species are not considered to be sensitive information. It is wise strategy on the part of IABIN to promote these more restricted catalogs in an early phase, given that they can serve as models for ironing out protocols, memoranda of understanding, etc.

Building total species data bases for the Americas will take many years, and building total specimen-based data bases might take over a decade. The latter constitutes a risk for the success of such an initiative, and needs to be addressed more explicitly. **Put in another way, the success of IABIN will not be ensured unless parallel measures are taken to finance the development of biodiversity information in the individual countries.**

**Getting to the relevant players, and developing protocols for interaction, undoubtedly are two of the most critical issues for the project.** Holding workshops and spreading details of the initiative, as was done in the first phase, and will continue in the second phase, is a good start. However, it remains to be seem whether small institutions, that for years have been developing major data bases for specific research tasks (e.g. national and regional floras), will make this data openly available to the public, before the specific research tasks for which the data base were designed, are completed. The project tends to pass over this critical issue. **Incentives need to be found such that institutions will look favorably to sharing data, at least on a partial basis.** Many of the important data bases in Latin American belong to small institutions and have been developed within the framework of limited research funds and much personal effort. **How the effort of such institutions will be recognized needs to be be dealt with.**

**A positive aspect of the project is that the Focal point institutions will continue to have control of their own data.** This is a critical issue. Many scientists are loathe to allow their data to be placed in large data bases, for fear of mistakes creeping in.

**An important issue not dealt with concerns academic acknowledgement for access to information.** Most reliable biodiversity information is compiled in universities, research institutes and museums. Such institutions rely on national research funds to maintain their research programs. National research agencies require a steady flow of scientific productivity in recognized scientific publications. Thus, the publication of species lists, biogeographical analyses, etc, in standard publications is seen as a more attractive option than publishing via the internet; internet publishing tends only to be considered at a later date, once formal publications have appeared. This is a problem that is not restricted to this project of course. **The project could make a major contribution to biodiversity science by working with Governments and perhaps the OAS to look for ways to give academic credit to web-based published biodiversity information. At the same time, IABIN needs to consider some sort of peer review system for the content of its Thematic Networks.**

The project has been wise to incorporate a continuous system of evaluation using indicators. However, it seems that the indicators are strongly slanted towards measuring the degree to which the IABIN portal is consulted and the degree to which opportunities availed by IABIN are spread. **The project needs to do more work with regards to measuring the <u>more relevant indicators</u> – i.e. those that measure the direct impacts of the project at the level of conservation and sustainable use.**

Developing a tool to compile, what in the long-run LABIN aspires to become a major regional biodiversity access tool, could be seen by some as controversial, in the sense that it may be perceived as a means for opening the door to a greater level of biodiversity piracy. **This issue needs to be more explicitly addressed.**

The conservation of biodiversity in the long-run, requires many different approaches and instruments, and is scale dependent. What is most appropriate at the country and the local levels, will not necesarily be the same as at the subregional and regional levels. At the local level, education, knowledge of the law, and incentives to land owners are probably much more important than availability of information via the internet. At the subregional and regional levels, information *per se* becomes increasingly more important. The best long-term solution is a combination of all these approaches.

## 2. GLOBAL ENVIRONMENTAL BENEFITS

The Americas contain a large number of the world Biodiversity hotspots for Conservation Priority and many of the original sources of cultivated plants. They contain many indigenous peoples with untold knowledge on the local biota. Anything that leads to the better conservation of these items is tantamount to a global environmental benefit. In particular, the conservation of tropical forests is essential for global climatic stability.

## 3. REGIONAL CONTEXT, REPLICABILITY AND SUSTAINABILITY

Regional and subregional solutions to biodiversity conservation require information at those

scales and willingness on the part of the participant countries to engage in cross-boundary conservation and sustainable development initiatives. This is probably the strongest and most important point of the IABIN proposal. In addition to providing an instrument for making the information available, it seeks to build a a major network of understand across the Americas, which in the long-run has the potential to have political connotations.

The project has very important connotations for conservation in a Regional Context. This is particularly the case for the countries of Latin America, where communication between nearby countries still tends to be minimal. Yet, most countries share many species and a number of ecosystems, and all are today being subject to the arrival of invasive species as a result of global commerce and travel. The Americas constitute an excellent Region to get such an initiative under way, in that they cover polar to tropical ecosystems, a wide variety of climates, and contain several biodiversity hotspots. Without any doubt, the project could be considered as a model for other regions of the world.

The long term sustainability of the project **should not present a problem from the financial and technical angles**. A five year period should enable resolution of most of the technical details, and establishment of a smooth running, and fair low-cost operation, which could be maintained by the mechanism suggested (a Foundation). **The real issue for long-term sustainability of the project resides in the willingness of institutions to buy into the concept and make their data open to access on a continued basis.** This will depend on the ability of the project to show concrete products and advantages over the next 5 years, and the maintenance of strong political backing. Strong political backing, undoubtedly will depend upon the extent to which use of the IABIN mechanism produces concrete conservation and sustainability gains in the Region. In this sense, the publication of conservation and sustainable use gains of the project over the Internet and in a Newsletter is essential.

## 4. LINKAGE TO OTHER FOCAL AREAS AND PROGRAMMES

The project has a huge potential to link to other focal areas, such as climate change, desertification, landuse, etc. The relevant links are outlined in the project.

## 5. CAPACITY BUILDING

The project places a fair amount of attention on capacity building at many different levels. The importance of capacity building cannot be overstressed. Capacity building at the technical level is important, but so also is participation *per se*. The project does a good job in recognizing these two components, particularly when it comes to informatics.

More than sufficient human capacity exists for running the project and developing its web-pages and protocols and for developing the various biodiversity catalogs. The main problem is not technical capacity. It is the availability of funds to hire competent persons to perform the necessary tasks in the individual countries. In that IABIN is in contact with government representatives at various levels, it needs to make sure that any funds supplied by the project make their way into the hands of the institutes, universities and museums where the

information on biodiversity resides. **It also needs to rely more on the scientific societies in the countries when it comes to making contacts regarding sources of biodiversity information.  It is surprising that none of the major Nacional Scientific Councils in Latin America are included in the contacts listed in Annex 5.**

The project has made a large effort to link to ongoing regional and subregional programs. **The linkages to GBIF are essential.**  The project has done a good job in linking to programs and action plans designed to collect biodiversity information. However, it falls a little short in linking to other relevant aspects. **In particular, it is recommendable that IABIN makes links to regional capacity building networks such as the Latin American Plant Sciences Network, and the family of Millennium Scientific Initiative Projects in various Latin American  countries.**  The Latin American Plant Sciences Network, financed by non-profit North American foundations, has accumulated 15 years of experience in organizing regional graduate courses and workshops, and in recruiting graduate students for cross-country training. It maintain a vast network of contacts across Latin America in the plant sciences. Some of the Centers of Excellence of the Latin American Plant Sciences Network correspond with those institutions holding major biodiversity data bases and  this Network hosted some of the first workshops in Latin American on data basing of biological data.

## 6. INVOLVEMENT OF STAKEHOLDERS AND COMMUNICATION CHANNELS

The project has done an adequate job in incorporating the various stakeholders. The bottom-up strategy with strong participation of Focal Points should keep the communication channels open. **However, it is not always clear whether the Focal Points for a particular theme have been selected on the basis of scientific merit**. The planned development of a newsletter is considered essential. In order to bring more institutions and persons on board initially, it may be wise to use conventional mailing for the first five years. Although IABIN has been running for 5 years, it has yet to become a house-hold term in scientific circles in Latin America, for example.

## 7.  INNOVATIVENESS

Apart from the use of the internet, which would have been considered innovative when the project got underway initially:

• the project is innovative in being bottom-up in conception (decentralized), yet at the same time, politically sustained at the hemispheric level (by OAS).

• it is innovative in the sense that sharing of data is not compulsory, which leaves the data provider a certain amount of flexibility in determining when and what to share, as well as room for continued updating with a minimum of bureacracy. The fact that individual institutions will be consulted at the time of data use has the value of allowing recognition of the efforts made by the individual institutions.

• it is innovative in that it seeks to find ways to represent data in a standardized format,

using capacity building as a vehicle along the way.

**Background**

Indigenous and aboriginal peoples have long been recognized as playing an important role in the maintenance and sustainable use of much of the world's biodiversity.  This is particularly evident in the case of the Americas, which includes among its population a vast array of indigenous societies living, for the most part, in the hinterland areas containing the richest stores of biological diversity.

As noted earlier in this document, five of the ten most biologically diverse countries in the world can be found in the western hemisphere (Brazil, Colombia, Ecuador, Peru and Mexico).  The region is also characterized by a rich cultural diversity, with some 40 million indigenous people making up about 8 percent of the total population.  The majority of indigenous people in the Americas are descendants of the Aztec, Maya and Inca civilizations, and still speak their native languages (a total of about 400 aboriginal or native languages are still spoken throughout the region).  Today, they comprise large parts of the rural peasant and migrant populations of Mexico, Central America and the Andean countries.  In the Amazon Basin region, there are also scores of relatively isolated tribal societies, some of which have only recently come into sustained contact with outsiders as a result of road building and land settlement programs.  In the United States and Canada, native tribes continue to populate some of the most pristine areas.

While the main policy and research focus related to biodiversity has been on the biological and economic consequences of biodiversity loss, growing attention is being paid to the related importance of maintaining the cultural diversity that is often reflected in specialized indigenous knowledge of natural resource management.  The 1992 Global Biodiversity Strategy, for example, includes as one of its ten principles for conserving biodiversity the principle that "Cultural diversity is closely linked to biodiversity.  Humanity's collective knowledge of biodiversity and its use and management rests in cultural diversity; conversely, conserving biodiversity often helps strengthen cultural integrity and values."  World Resources Institute et al, *Global Biodiversity Strategy: Policy Makers' Guide*.  Baltimore: WRI Publications, 1992.

This was further developed in the subsequent 1992 Convention on Biological Diversity (CBD), which in its preamble recognizes the

> close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.

Article 8(j), which is concerned with indigenous peoples and *in situ* conservation, calls on the Parties to:

> respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

Similarly, the CBD Clearing House Mechanism, which was established to facilitate the access of all governments to the information and technologies they need for their work on biodiversity, has targeted

special efforts "to ensure the participation of indigenous communities, whose unique knowledge and expertise are so important."  Clearing House Mechanism, CBD website, www.biodiv.org/chm.

## The Role of Traditional Environmental Knowledge

The term "traditional knowledge" is often used to refer to the complete body of knowledge, practices and innovations developed and maintained by indigenous and local communities.  The more specific concept of "traditional environmental knowledge" (TEK) has been defined as "a body of knowledge built by a group of people through generations living in close contact with nature.  It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use." Martha Johnson, "Research on Traditional Environmental Knowledge: Its Development and Its Role," International Development Research Centre

Over the past few decades, some academics and scientists have grown increasingly interested in the sophistication of TEK among many forest communities.  For example, the Shuar people of Ecuador's Amazonian lowlands use 800 species of plants for medicine, food, animal fodder, fuel, construction, fishing and hunting supplies.  Traditional healers in Southeast Asia rely on as many as 6,500 medicinal plants, and shifting cultivators throughout the tropics frequently sow more than 100 crops in their forest farms. Indigenous peoples plant forest gardens and manage regeneration of bush fallows in ways which take advantage of natural processes and mimic the biodiversity of natural forests.  Much of the world's crop diversity is maintained by farmers who fallow age-old farming and land use practices that conserve biodiversity and provide other local benefits.  Darrell Addison Posey, "Provisions and Mechanisms of the Convention on Biological Diversity for Access to Traditional Technologies and Benefit Sharing for Indigenous and Local Communities Embodying Traditional Lifestyles.  Oxford, UK: OCEES Research Paper Nr. 6, 1996.

Traditional environmental knowledge has also been an important resource in technologies based upon the manipulation, adaptation or use of biological resources.  This is especially evident in the pharmaceutical sector, where a recent analysis has shown that over half of the top 150 brands prescribed contained at least one active compound derived or patterned after compounds derived from biological diversity.  Furthermore, the vast majority (94%) of the 35 plant-derived drugs included in the top 150, contained at least one compound that had a similar use in traditional medicine as in "western" bio-medicine. Francisco Grifo, et al. "The Origins of Prescription Drugs," in *Biodiversity and Human Health* 131, 136. Francisco Grifo and Joshua Rosenthal, eds., Washington, DC: Island Press, 1997.

Recent years have also seen growing acknowledgement of the importance of traditional knowledge by conservation and international development agencies, including the World Bank, who increasingly seek to integrate indigenous and traditional resource management practices with their own biodiversity conservation and sustainable development strategies.

Nevertheless, despite increasing recognition of the potential for integrating traditional knowledge in sustainable development strategies, western scientists, in general, still remain largely skeptical about TEK. This is mainly due to the vastly different world views governing how environmental knowledge is generated, recorded, transmitted and managed by the different systems, that cannot be easily reconciled. Most solutions offered by traditional knowledge systems are usually localized and context-specific, and therefore cannot be extricated from that context and generalized without affecting their potential effectiveness – which flies in the face of the principle of replicability guiding occidental science.

Western skepticism is also based on the perception that TEK, to the extent that it does offer viable solutions to biodiversity management and sustainable development problems, is being irreversibly eroded

by the assimilation of aboriginal peoples into western culture and by the failure of elders to pass on the traditional knowledge to younger generations.  Indeed, TEK is in danger of disappearing not only under influence of global processes of rapid change, but also because the infrastructure and capacity to document, protect and disseminate such knowledge are lacking, especially in developing countries. Johnson; and "Introduction," SciDev.Net, Dossiers Home, Indigenous Knowledge, August 2002.

The issue of documenting traditional knowledge, however, raises a number of fundamental questions that need to be addressed, about data ownership, authorization, quality control and interpretation.  Storing information on traditional concepts and uses of biodiversity can potentially aid in the retention of traditional knowledge.  But once stored, how can knowledge be protected from use and exploitation without informed consent?  Is it coherent to argue that western scientific knowledge is a public good, while at the same time providing special protection to TEK as a cultural property or secret?  How to develop coherent system of group rights? Preston Hardison, International Conservation Networking System (ICONS) Project.

## Main Issues Related to IABIN

Intellectual Property Rights.  The Convention on Biological Diversity recognizes the central role of indigenous and local communities in effective *in situ* biodiversity conservation, and calls for wider use and application of traditional knowledge, innovations and practices.  But the CBD does this without providing for the development of appropriate mechanisms for protection and equitable benefit sharing (insofar as Parties to the CBD are essentially just encouraged to carry out this obligation as much as possible, subject to national legislation).

Many indigenous peoples and representatives hold that existing systems of intellectual property rights are inadequate to guarantee equity and protection.  Others argue that existing IPR systems undermine the essence of traditional knowledge insofar as they are based on the concept of private ownership and individual invention and thus are inherently at odds with many indigenous cultures, which tend to emphasize collective creation and ownership of knowledge.  Finally, there is concern that IPR systems facilitate the appropriation of traditional knowledge for commercial use without providing for fair benefit sharing. David Downes, "Using Intellectual Property as a Tool to Protect Traditional Knowledge: Recommendations for Next Steps." Center for International Environmental Law Discussion Paper, 1997.

Thus, one of the main issues related to the IABIN project emerging from this larger debate is that of the need to define adequate IPR policies and guidelines to protect TEK and other biodiversity related information generated by indigenous and local communities from inappropriate claim or misuse.  Also in need of clarification are certain structural issues related to data formats and metadata standards to facilitate the eventual inclusion of TEK into the network.

Capacity building.  Another major issue related to IABIN is that of the need for capacity building and support both for indigenous peoples to develop their own biodiversity related networks, and to access scientific data and technologies.  One of the main prerequisites for the process of collecting, applying and disseminating TEK and other biodiversity related information is the full participation of the local people involved.  Capacity building is a key issue in this regard, and vital if traditional knowledge systems are to receive active local support needed to sustain them.  Indigenous and local communities will be able to "own" and manage their TEK and biodiversity related networks only to the extent to which they are able to own and manage the relevant information technologies needed to record, validate, disseminate and protect the data.

**IABIN and Indigenous Peoples**

In light of the above, the following activities will be included in the IABIN project design to facilitate indigenous peoples' participation in the project and share in its national and regional benefits.

Development of policy/guidelines for inclusion of TEK.  The IABIN project will include activities related to the development of policy and guidelines for dealing with the eventual inclusion of TEK information in the network, including addressing oversight for TEK that might be conveyed through the network, as well as issues related to the clarification and definition of appropriate metadata standards for TEK inclusion. To this end, a TOR and analysis would be prepared on the current parameters of the indigenous IPR issue as related to IABIN, the development of appropriate metadata standards and protocols, and recommendations on proposed policy and guidelines for inclusion of TEK in the IABIN network.  This activity would also support the organization of a stakeholder consultation including IABIN Focal Points, academic institutions, indigenous peoples and local community representatives to discuss the findings of the analysis and agree on proposed guidelines.

Capacity building for indigenous and local communities.  As noted above, capacity building is key to enabling indigenous and local communities to manage their TEK and biodiversity information.  Equitable access to existing scientific information and technologies is another vital aspect of this issue.  The project would therefore aim to provide equitable access to capacity building through the five thematic networks and the IABIN Content Development Program to key indigenous TEK and biodiversity users and providers. Capacity building activities would include the following:  (i) preparation of a survey and needs assessment to determine existing indigenous TEK and biodiversity providers and users, their training needs, information gaps, existing or planned infrastructure, and the like throughout the region; (ii) preparation of a capacity building strategy for indigenous TEK/biodiversity providers and users through the thematic networks and content development program; and (iii) implementation of proposed training activities.