

Financing priorities for the value-added tools

I. Background

During the First IEC Meeting, held in Washington, DC in June, 2006, a strategy was agreed to determine the financing priorities for Component 3 of the GEF Project – Tools for Decision Making. The agreed strategy focused on developing a consulting phase to determine which action areas of interest to the countries should be the ones for which such tools would be developed.

As a follow up to the above, the IABIN Secretariat organized, jointly with the Institute for Research on Biological Resources Alexander Von Humboldt, the CYTED Network for the Conservation of Biological Collections and the Global Biodiversity Information Facility (GBIF), the Iberian-American Workshop for the Exchange of Biodiversity Information. The following were the two activities that were carried out during the Workshop regarding IABIN decision-making tools

- Workshop on Information Products for Decision Making at the Regional Level, and
- Modeling Tools Forum

The objectives of the two activities were to:

- Define the general requirements for the development of strategic information products and services for regional and global users that could be financed by IABIN.
- Know the modeling tools and applications developed by partners in the region, such as CONABIO in Mexico, that use as their base information about biological collections, ecosystems, protected areas and geospatial data.
-

II. Workshop on Information Products for Decision Making at the Regional Level

II.1. Workshop Objectives

- Make an analysis of the environmental thematic areas in the countries of the participants in the region, for which it would be advisable to develop or utilize informatics tools that would facilitate environmental decision making.
- Diagnose the thematic priorities and information products needed for the Americas that could be financed by IABIN.

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 2
finance value-added tools.

II.2. Methodology

The session initiated with a brief presentation on IABIN objectives regarding the creation of tools to support environmental decision making processes in the Americas. After this, four working groups were formed, to carry out three exercises:

1. Identification of problems/needs that could be addressed by a modeling or decision making tool.
2. Making an inventory of existing modeling or decision making tools.
3. Establish priorities (based on exercise No. 1)

Each group carried out the following steps:

1. Analysis of the environmental thematic areas in their countries and the region for which it would be advisable to develop or utilize informatics tools to facilitate environmental decision making.
2. Inventory the decision making tools or informatics applications the participants know of that could be used in the region and carry out a discussion on the usefulness of each or the experience the participants may have had in their use.
3. Preliminary diagnostic on the information resources each country has which could be used by the identified tools.
4. Diagnostic of the thematic priorities and information products needed in the Americas, that could be financed by IABIN.
5. Recommendation on existing tools whose use in the region IABIN could promote.

The results of exercises 1 and 2 can be reviewed in Annex 1 of this document.

II.3. Discussion

The participants interacted through a participative consultation where the regional needs regarding possible information products or services in the Americas were identified.

The main comments and suggestions regarding the importance biodiversity information represents for decision making where the following:

- It is important to disseminate clear and already analyzed information to the decision makers in order for them to make more timely decisions regarding biodiversity. Many times, there are no available experienced people or advisors who can identify what kind of information is relevant and who could explain it to the politicians.
- On the other hand, the institutions are aware they have enough information about biodiversity and about the need to integrate it in the region. The dispersion of information has made it difficult for users to access it and for decision makers to consult it. But at the same time, the participants recognized

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 3 finance value-added tools.

the difficulty in finding or developing tools that would allow for an integration of all the biodiversity data that are produced daily.

- In order to have an impact on decision making, it is necessary to identify intervention actions and work methodologies that would allow for the results of biodiversity research to reach the politicians in each country.
- It is fundamental to identify what information needs exist and which of these it will not be possible to address regardless of the available technology.
- It is critical to build knowledge networks and build the capacity of the communities in order to move them nearer the scientific community and, in this way, make joint decisions.

II.4. Recommendations

The following where the thematic priorities to finance the development of decision making tools through Component 3 of the IABIN-GEF Project, arrived at through Exercise 3

Problem	Weighting				Priority
	Group 1	Group 2	Group 3	Group 4	
Management of the mechanisms for biodiversity conservation		1	1	1	No. 1
Deforestation	1				
Deforestation at an unsustainable rate		2			
Unsustainable use of natural resources			2	2	No. 2
Invasive species	2	3			No. 3
Species distribution	3				
Design of a communication and education strategies to disseminate knowledge and promote the sustainable use of biodiversity				3	

With the establishment of these priorities the IEC mandate was achieved.

These results are submitted in this document to the consideration of the whole IABIN Council for their discussion and approval.

In addition, in anticipation of a decision by the Council regarding the above, the IABIN Secretariat has developed a draft Request for Proposals for the development of these tools, which includes Terms of Reference (ToR) and which is also presented to the IABIN Council for its discussion and approval (see Annex 2). It would be possible that given the recommendations from the Modeling Tools Forum found in the next section, a decision be made to work directly with those organizations that presented their products at the workshop and received acceptance from the participants.

III. Modeling Tools Forum

III.1. Forum Objectives

- Demonstrate some of the modeling and visualization tools that have been developed by actors in the Hemisphere and which use biodiversity information (information managed through the existing information systems in the different countries and national or regional initiatives).
- Make an inventory of the informatics tools or applications for decision making that could be used in the region.

•

III.2. Themes and Presenters

- *Protected Area Decision Making Support System*; Steven Schill, TNC;
- *Value added to collection data: analysis and geographical modeling to understand better biodiversity collections*; Andrew Jarvis, CIAT;
- *Bioinformatics: intelligence for the management of sustainable natural capital*; Raul Jimenez, CONABIO
- *Tools for accessing database information about Colombian ecosystems*; Rubén Dario Mateus, Institute Alexander von Humboldt

III.3. Methodology

The researchers invited as presenters from CONABIO, TNC, Institute Humboldt and CIAT made introductory presentations on the modeling or visualization tools developed by their organizations. These presentations offered an overview of the existing resources regarding the themes above, which allow for the use and management of biodiversity data through the information systems of some government and non-government organizations in the region.

The presentations were the basis for an open discussion, forum style, in which the participants addressed questions to the presenters. After this, the presenters made hands-on demonstrations of the tools. This was an interactive session that allowed the participants to give feedback to the presenters about the tools. Similarly, there was a discussion regarding the tools that could be produced in the region, about how to maximize the use of the existing tools, and about the kind of training that would be required to reach this goal.

III.4. Discussion

b) Technological Platform

- The predicting models are a very useful tool, thus it is necessary to join efforts among the different sectors (theoreticians – users). Similarly, the importance of carrying out an evaluation of the models from the statistical calculations was highlighted.

- Regarding the way tools are developed in CONABIO, they mentioned that there is no strategic plan that directs the design and implementation of these tools, but rather that they have researchers who are constantly creating new tools according to the needs as they emerge.
- In CIAT they carry out a search for software according to the kind of question for which an answer is sought. For modeling processes they use software that specializes in databases which is available in the Web. Similarly, CONABIO states that the data cannot be published without a scientific review and the most important aspects of the models are to understand what they are for and how to use them.
- The tool used by the SIG Unit of the Institute von Humboldt (to geo-reference localities) has been developed with Colombian information, but it could be adapted to work with data from other countries, as long as geographical and cover information is input. For the geo-referencing process they recommend that a researcher from the team should have knowledge regarding GPS. A range is managed by the geo-referencing tool that allows the person to identify a specific point and input a specific description of the locality that corresponds to it.

c) Use of information

- When using metadata about satellite images it is important to consider their conditions for access and use. In some cases there are problems with purchased images, since some are obtained through agreements or directly downloaded from the Web. In the cases the images do not have information regarding license for their use, they are copyright protected by default.
- Regarding the quality of data available on line, through the different initiatives (GBIF or SIB Colombia), it is the user who decides if the quality of the data fits his/her needs or not (regarding the precision of the information). It is important to highlight that the data should be in the public domain and that they must be used with caution, respecting the conditions for their use and access.
- When designing tools for searching information it is vital to think about the public who will be using the applications. It is critical to analyze what kind of information is already available in order to make the development functional and it is fundamental to inform the users if, by using the tools, they will access information that is of public access of which has restricted access.

d) Information for decision making

- There is concern regarding the information used by politicians when they need to make decisions, since politicians in general do not carry out a search for data to support their decision, but rather make decisions with the data they have handy. In the case of CONABIO, they have a department whose work is to involve the different government agencies in biodiversity themes. This link with the government was achieved after 10 years of efforts to get the politicians near

scientific information. Through this work a law was developed and now in Mexico the decisions that have to be made regarding natural resources must use as basis the information in CONABIO. CONABIO is currently working on ways to involve indigenous communities.

III.5. Recommendations regarding future actions for the development of modeling and visualization tools and regarding tools already existing

- The modeling tools that were shown are replicable. The organizations that presented these tools are interested in cooperating with other countries. Thus, it was recommended to take advantage of the work CONABIO, TNC, CYAT and SIB Colombia have done when developing the decision making tools for IABIN. This would contribute, too, to strengthen South-South cooperation regarding use of existing modeling and visualization tools.
- It was recommended that, considering that some primary information generators do not have access to the Web, applications be developed that would not require the Internet to work, in a way that they would allow for the downloading of the data from the Web so the user can work on them without having to be connected to the Internet. The challenge is to develop simple and inexpensive tools.
- It is critical to disseminate the modeling tools so that potential users know they exist and use them. For this it is necessary for the tools to be built on the basis of the information needs of these people. By keeping the user in mind it is possible to have more dynamism in the development of new tools, in creating new communities and in establishing new inter-institutional networks that would provide feedback.
- Experts in the use of informatics tools are needed in the different working groups in order to ensure an integration of the taxonomic and informatics areas for the use of the best possible software.
 - It will be necessary to allow the free selection by the user of the information according to his/her profile and interests. For this it will be necessary to create capacity in the different institutions in order to share information and avoid for it to be concentrated in just one place.
 - Peru is interested in knowing about the tool TNC is developing for marine resources, given the abundance of these resources in the country.
 - TNC's goal is to help the countries fulfill their commitments regarding biodiversity. TNC is working to collaborate in leveling the technological capacity in all the countries.
 - It is recommended, considering that for decision making there is already much technology, to incorporate other variables in the modeling scenarios, such as global warming and free trade agreements, as well as data on over-exploited areas.

- It was highlighted that the tools presented in this Forum can indeed be replicated in diverse areas and countries, just by making some adjustments and that training will be required for this. IABIN made a commitment to request to TNC South America that they carry out this training. In this regard, in Colombia there are several universities that are interested in promoting the use of modeling tools and they propose to develop training for this to be delivered virtually.
- Finally, it was recommended that the organizations that have already shared their information and data would let other institutions know of the resulting benefits of so doing in order to foster their participation.

Annex 1. Results from Exercises 1 and 2 of the Workshop on Information Products for Decision Making at the Regional Level

Exercise 1: Identification of problems/needs that could be resolved with a modeling or decision making tool.

GROUP 1

Problem	Cause(s)	Effect(s)	Responsible for causing the Problem	Possible solution(s)	Target user group for the tool (if this existed)
-How to eliminate invasive species from protected areas	- Lack of technology - Economic resources	- Loss of biodiversity -Economic loss	- Environmental agency	- Facilitate research about control and management - Tool that would allow to monitor the species, its dispersion, the gravity of the problem and the priority for action	- Government agencies - Civil society - Decide on the target public and differentiate the tools
- Control of invasive species in coastal environments	- Ballast water discharge	-Biodiversity loss -Economic loss	- Environmental agency -Maritime control	- Monitoring - Research - Information from the boats - Delimiting coastal protected areas	- Government agencies - Civil society - Decide on the target public and differentiate the tools
- Lack of information for the control and entry of genetically modified organisms.	- Lack of information on the theme - No information is obtained about "obvious" species - Lack of information on sub species	- Loss of biodiversity - The introduction of a dangerous species	- Environmental agency	-Some projects to collect information are being developed - Repatriation of the information	- Government agencies - Civil society - Decide on the target public and differentiate the tools
- Lack of specialization of the information - Lack of analysis of species distribution and mobility	- Dispersed information - Information not digitized - How to take such information to a tool	-There is no follow up to know what happens with the species	- Environmental agency - Importance assigned to it by the State	- Digitizing the information - Creating the necessary channels	- Government agencies - Civil society - Decide on the target public and differentiate the tools
- There is no follow up to the processes of environmental indicators and their impact is not measured	- There is no updated information - Effective monitoring mechanism - Lack of knowledge of the indicator - there are no tools that would allow to make an immediate calculation - Lack of knowledge about the tool	- It is not known what happened with the indicators and these are not adopted	- Environmental agencies - The State -Citizens		- Government agencies - Civil society - It is important to decide on the target public and differentiate the tools

GROUP 2

Problem	Cause(s)	Effect(s)	Responsible for causing the Problem	Possible solution(s)	Target user group for the tool (if this existed)
- Inadequate Management of the mechanisms for biodiversity conservation	- Lack of a modality for Management / transfer of knowledge to implement conservation mechanisms - Lack of conservation objectives and indicators for its protection - Lack of information exchange between civil society, the private sector and the government	- Possible loss of biodiversity - Conservation strategies are not applied - Inadequate State investment - Wrong decision making	- Related government agencies - Environmental organization - Private entities related to this	- Establish transfer information tools for timely decision making - Design a system/ tool - Follow up and evaluation of conservation management	- Government authorities related to the environment and natural resources -NGOs -Local governments
- Unsustainable use of natural resources	- Lack of information to detect over exploitation of natural resources - Unsustainable cultural /economic systems	- Loss of biodiversity -Alteration /modification of ecosystems	- Local Communities -Academia -Central and local government	- Natural Resources management/ use plans -Modeling of population dynamics	- Competent government authorities related to the environment and natural resources. -NGOs -Local governments

GROUP 3

Problem	Cause(s)	Effect(s)	Responsible for causing the problem	Possible solution(s)	Target user group for the tool (if this existed)
1. Coastal erosion 2. Deforestation at an unsustainable rate 3. Invasive species in protected areas e.g., protected areas in the Atlantic (areas that are surrounded by cattle farms that grow fodder which is an invasive grass) -Grass is	-Sea level rises due to climate change and storm surges (hurricanes) Tourism development (building of hotels, mangrove clearing (key component of the marine ecosystem) -Poor government policies, (Brazil) low land prices and agricultural pressure. -Lack of enforcement that lead to the establishment of informal farming communities.	-Impact on coastal ecosystems (mangrove serve to filter pollutants resulting in increased pollution) -Loss of coastal infrastructure due to storm surges -Loss of critical habitats and endemic species. -Increased runoff and soil erosion. -Negative	-Poor government policies. -Lack of capacity for policy enforcement. Corruption. E.g. EIAs, -Poorly informed politicians farmers, primary resource extractors (e.g. smelters)	-Protected areas gap assessment (tool to analyze pressure on habitats and establish priorities in areas with greatest pressures). -Obtain accurate knowledge of biodiversity, i.e. establishment of a database. -Use of database to develop future scenarios and impacts of policy, regulatory and economic decisions. -Use of tools to	-Environmental agencies, municipalities of communities, policy advisors (including NGOs).

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 10 finance value-added tools.

aggressive to native flora. -This results in the loss of natural biodiversity. 4. In British Columbia there are Pines infested by a beetle from the US which results in loss of biodiversity.	-Charcoal burning (Brazil, Caribbean, cutting of yams ticks).	impact on watersheds. - Desertification in Amazon forests. -Habitat fragmentation.		find gaps in the information about representation of ecosystems and biodiversity in protected areas that would allow establishment of conservation priorities.	
---	---	---	--	--	--

GROUP 4

Problem	Cause(s)	Effect(s)	Responsible for causing the problem	Possible solution(s)	Target user group for the tool (if this existed)
- Inadequate representation of the national ecosystems in the National Protected Area Systems	- Protected Areas were defined by consultation or in response to a perceived threat - Lack of adequate information and analysis about ecosystem representation and their biodiversity	- Possible loss of biodiversity	- Well-intentioned environmental agencies	- Use of tools to identify gaps in information regarding ecosystem representation and biodiversity in the protected areas, that would allow the establishment of conservation priorities	- Environmental Ministries - National Protected Areas and Biodiversity Directorates -NGOs -Universities -Municipalities
-Deforestation and habitat fragmentation	- Poverty and/or over-exploitation of resources - Changes in soil use - Expansion of agricultural frontier - Lack of options for sustainable use of biodiversity	- Loss of biodiversity at all levels	- Communities - Private businesses	- Reforestation processes and Management of landscape tools	-Communities -Private businesses -Environmental authorities
- Invasive species displace native species (terrestrial and marine)	- commercial Boats (aquatic ecosystems) - Lack of information and control - Economic productivity (voluntary entry) - Absence of action plans	- Reduction of native species - Soil erosion - Economic consequences - In the case of some species (pine) there is loss of biodiversity -Climate changes	-CITES - Conservation centers that are nuclei for traffic -Environmental authorities -the community	-Early alert systems - Planned production and distribution of information that includes not only what should not be done, but also explains what native species could help in the solution	- National, regional and local environmental authorities, - the community - Customs officers

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 11 finance value-added tools.

Exercise 2: Inventory of existing modeling or decision making tools

This exercise was carried out in plenary. A brainstorm was done regarding the tools known to the participants knew. The brainstorm not only resulted in modeling tools, but also in tools for visualization, information and follow up and monitoring tools as the table below shows.

Name of the tool	Description of what the tool does	Who developed the tool	Is the tool in open source or proprietary code	IT requirements	What information does the tool need in order to work	Who uses the tool
Modeling Tools						
Protected Area Gap Decision Support System		IABIN-TNC	Open Source	Windows ArcGIS		TNC, Caribbean countries
MARXAN	Conservation in terrestrial, marine and aquatic areas					
Species at risk	Status of threatened species and species in recovery	Canadian government and civil society	Open source		Database, changes in population, in habitat	Ministry of the environment to designate areas to Project species
FloraMap	Predict distributions of vegetable species	CIAT	Open Source	Windows	Coordinates of the species	Governments Researchers NGOs Universities
AROMA	Identify areas where species can be introduced	CONABIO	Open Source	Windows	Covers in format shape Geo-referenced species data	Environmental authority
Integrated Municipal Information System SIIM	For decision making of 4 axis: economic, social, environmental and institutional	SINIA with MAGFOR and INIFON	VisualStudio .NET ESRI Proprietary SINIA Access by MoU	Windows	Municipal governments information	Municipal governments
Tools from CRIA	Decision making 3w.cria.org					
Visualization tools						
Terralook	Satellite image Management for protected areas	IABIN-JPL	Open Source	Windows	Shape of protected areas, satellite	Protected area managers
Map server	It is used to geo-reference all modes of conservation	Tool to visualize maps	Open Source	Server with capacity for images and maps	Shapes Records	Exsitu conservation centers Government agencies
Various dynamic maps	Information on soils, coasts, aquatic habitats	DINAMA Provides and freplata Ministry of	MapServer ArcIMS	Windows	Shapes	Technicians, Scientists, Academic

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 12 finance value-added tools.

		cattle farming				
CBERS	Catalogue with images for all of LA, allows downloading of images through ftp by request	INPE Brazil	Free	Windows Wide band		By request to anybody
Natural Resources System	Integrates information about protected areas, wetlands, ecosystems, species	CONAMA			Maps of natural resources and biodiversity	Open to the public
Digital gazetteer of localities and geo-referencing tools for botanical records			PHP			Botanists
DIVA	Species distribution in a map	CIAT	Open Source			Researchers
SINIA of the Western Region	All the biological information on soils, watersheds, soil use	BGR – German cooperation	Free	Windows	Biological information	Government NGOs
	DB for dangerous areas and for greater biological and social control	Government (General State office)	ESRI tools	Windows	Complete geo-referencing	Government for control and prevention
Mira+	Image processing	Amazonian Institute				
Biotics 4	BCD update with ArcView	CONABIO?	Proprietary	Windows	Taxonomy, search, locality, protected areas, species Management, etc., bibliography, photos and maps	Government
Ecomapa		INBio				
ERDAS	Digital images processing		Proprietary		Satellite images	Chiefs of projects
ArcGIS	Digital map Management	ESRI	Proprietary	Windows	Digital maps in shape format	Government, Universities, Private sector
Monitoring/follow up tools						
RAPPAM	Evaluation of Management effectiveness	WWF	Open source	Windows	Protected areas, questionnaire answered by the responsible party	NGOs, researchers, governments
Parks in Peril	Evaluation of Management effectiveness	TNC	Open Source	Windows	Protected areas, questionnaire answered by the responsible party	NGOs, researchers, governments

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 13 finance value-added tools.

BCD advance revelation	BD of biological information	TNC	Proprietary	Windows NT	Taxonomy, search, locality, protected areas, species Management, etc., bibliography, photos and maps	Government
EIA Check list	ToRs for terrestrial and marine environmental impact assessment	Caribbean development bank	Open source			
Environmental indicators system	Monitoring and update of indicators	SINIA together with the government	SQLServer VisualStudio .NET ESRI for maps Access by agreement	Windows	Developed with a methodology, so the data are dependent	Government agencies, general public
Follow up system for environmental pollutants	Inventory of polluted sources	MARENA	Proprietary MAREAN VisualStudio .NET Access by agreement	Windows	Information on the industries at the national and international levels	General directorate on environmental quality
In situ conservation monitoring system	Modules of crop variety, wild relatives, commercialization, documents, communities, institutions and practices and knowledge. The information is shown in the format of a traffic light	CONAM	Open Source		commercialization, documents, communities, institutions and practices and knowledge	Government agencies, ministry of agriculture, INDECOPI
Information tools						
Bibliographic references bank	References about several documents on the environment	Freplata DINAMA, hazardous substances	Open Source and proprietary	Access	Locality	Students, technical consultants
Web server tools	Integration of information from all sectors	CONAM	Internet		All the information of the integrated sectors	All those integrated to the CHM Government, NGOs, Academics
REDESA	Statistics and environmental indicators network	CEPAL	Open Source		Biodiversity information	General public
SINIA	It has a search tool with publications from the sectors	CONAM	Open Source and proprietary		Information is requested according to indicators of the stress status and gives answers in all themes	All government sectors and universities
SNIT	Normalizing and standardizing all territorial and	Ministries of Chile			Natural resources, infrastructure,	Public services

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 14 finance value-added tools.

	sectorial information of the country. Catalogue of metadata based on ISO				publications, cultural, patrimony	

Other Problems

- Pollution of soils and aquatic ecosystems
- Ballast water
- Lack of establishment of priorities at the political level
- Climate change
- Traffic of species
- Ineffective protected areas system

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 15 finance value-added tools.

Annex 2. Request for Proposals for the Development of Value Added Tools for Decision Making

**Inter-American Biodiversity Information Network (IABIN)
Executive Committee (IEC)**

**REQUEST FOR PROPOSALS (RFPs)
For the Development of Value-Added Tools for Decision-Making**

I. IABIN BACKGROUND

Responding to the importance in the Americas of protection of biodiversity (the Americas houses 8 of the world's 25 biodiversity hotspots¹), the Inter-American Biodiversity Information Network (IABIN) was officially mandated at the Summit of the Americas on Sustainable Development, convened by the Organization of American States (OAS) in Santa Cruz de la Sierra, Bolivia, in December 1996. IABIN is an Internet-based forum for technical and scientific cooperation that seeks to promote greater coordination among Western Hemisphere countries in the collection, sharing, and use of biodiversity information relevant to decision-making and education.

The objective of IABIN is to promote sustainable development and the conservation and sustainable use of biological diversity in the Americas through better access to and management of biological information. While IABIN is envisioned as a distributed system of data providers in which the data are maintained and controlled by the provider, coordinated access to the integrated resources of the network is a key component of IABIN.

IABIN is governed by the IABIN Council, comprising official Focal Points from the countries of the Americas and representatives from intergovernmental and non-governmental organizations and initiatives addressing biodiversity informatics issues. The IABIN Council is represented inter-sessionally by the IABIN Executive Committee (IEC), comprised of the IABIN Council Chair and Vice-Chair, 6 members elected from among the official IABIN Focal Points and one elected representative from an inter- or non-governmental organization.

Since IABIN's inception in 1996, 34 countries have designated official IABIN Focal Points. Four IABIN Council meetings have been held with the IABIN Focal Points and a broad representation from the international, NGO, and private sector communities.

The IABIN Secretariat manages day-to-day activities of IABIN. The IEC has chosen the City of Knowledge in Panama City, an NGO, as the Host organization for the IABIN Secretariat.

The Project Implementation Plan (PIP) found on <http://www.iabin.net> outlines a US\$35 million plan. A five year Global Environment Facility (GEF) Grant of US\$6.0 million for the "Building the Inter-American Biodiversity Information Network (IABIN)" Project is executed by the General Secretariat of the OAS (GS/OAS) and implemented by the International Bank for Reconstruction and Development (World Bank). Co-financing for the GEF project in the amount of approximately US\$28.9 million, thus totaling close to US\$35 million, has been identified from 76 regional or national institutions and programs.

The overall project will:

¹ Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB, Kent J. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403 (6772): 853-858 (Feb 24).

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 16 finance value-added tools.

- (i) Develop an Internet-based, decentralized managed 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 of biodiversity,
- (iii) Provide a mechanism in the Americas to exchange information relevant to conservation and sustainable use of biological diversity, thus promoting and facilitating technical and scientific cooperation to help fulfill the mandate of the Clearing-House Mechanism of the Convention on Biological Diversity.

II. RATIONALE

The demand for decision support tools for environmental management is increasing as decision-makers in both the public and private sectors are routinely required to make decisions in an atmosphere of uncertainty and, sometimes, without a complete understanding of the different factors that can affect the environment. In many cases, these decisions do not adequately account for risk or they fail to anticipate the second- and third-order effects that will result from a decision. The ability to make informed decisions which consider unforeseen circumstances in such a setting is fundamental to achieving efficient and effective environmental management, conservation of biodiversity, and sustainable development.

The integration of natural and social science data and information is increasingly recognized as vital to scientific research and societal decision making related to a wide range of pressing environmental and biodiversity issues. In addition, the use of GIS for visualization and spatial analysis of data is well documented. Many information products have been developed that allow users to perform a variety of functions on biodiversity and remote sensing data. These functions include predictions of spatial distribution, changing distributions according to key variables, three dimensional visualization, and time-series animation (fly-through).

An important ultimate objective of IABIN is to make biodiversity information useful to decision-makers in the public and private sectors. The IABIN initiative seeks to encourage the development, adaptation or modification of a series of value-added applications that will demonstrate to decision makers how data and information can be effectively used in the decision making process to improve the environmental outcomes of their management decisions.

IABIN is seeking to foster the use and further development of current value-added tools created within the context explained above that can be either adapted or modify to serve the needs of the IABIN community. This provided that we understand the differences and capabilities between the diverse decision-support tools available or proposed in order to decide which tool should be used or recommend for a particular need within the network. Of course, innovative ideas for the development of the tools sought after are also welcomed.

In order to accomplish the above, IABIN is requesting proposals from institutions that have experience in developing value-added tools to help guide environmental management, conservation of biodiversity and sustainable development decision-making processes throughout the Western Hemisphere. IABIN is interested in forging partnerships with institutions involved in the development of decision support tools in order to promote an efficient use of the resources available for this task within the network. In this regard,

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 17 finance value-added tools.

proposals showing a substantial level of co-financing, creation of partnerships, tools that can be used throughout the network and that are multilingual will be favorably considered.

In general, proposals should make emphasis on and demonstrate with concrete products how biodiversity information is useful to decision-makers in the public and private sectors and at the local, national, sub-regional and regional level.

III. AREAS TO BE ADDRESSED BY THE PROPOSALS

The following areas were identified as priority for the Western Hemisphere by IABIN participants:

Problem	Priority
Management of biodiversity conservation mechanisms	1
Deforestation	2
Deforestation at an unsustainable rate	2
Unsustainable use of natural resources	2
Invasive species	3
Species distribution	3

In addition to the above areas, proposals submitted should address the need for information products tools that will allow the user to:

1. *Integrate data from biodiversity and socio-economic databases*

Under this area, socio-economic data relevant to biodiversity issues will be identified and tools will be provided through the IABIN Web Portal / Gateway that will allow users to access socio-economic and biodiversity data in an integrated manner. An example of socio-economic data relevant to biodiversity issues is land-use databases, which combine information from the social sciences on population and economics trends and demography, with biological information about an area's biodiversity and conservation status. Such databases and mapping applications allow for improved coordination and planning between resource managers and broader civil society and provide greater access to information for researchers and the general public.

2. *Visualize and analyze data and information*

Under this area IABIN is interested to foster development of tools at the regional level that would allow users to visualize data and information in an interactive, as well as non-interactive manner. A simple example of a visualization product could be a dynamic map showing actual and predicted spread of invasive species across several countries.

Another example of a visualization product has been developed for the Central America sub-region by the CCAD in coordination with NASA and the World Bank. This product allows the user to fly through Central America, viewing the 3-dimensional landscape. An added-value product relevant to biodiversity could be built on the existing NASA/CCAD product, by overlaying an ecosystems map on the existing landscape.

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 18 finance value-added tools.

Similar products can be developed or adapted for a range of existing data and information throughout the Americas, allowing decision makers, resource managers, the biological community and general public improved access and value from biological research.

3. ***Utilize data with models to develop scenarios (options and consequences) for decision makers.***

This area seeks to demonstrate how data can be used as input to models. The output of these models will allow the user to build scenarios, with options and consequences that will help them make an objective decision.

An example will be used to illustrate what we mean by the use of models to support the decision making process. Assume that limited funds are allocated for re-vegetation of an area in order to eliminate soil loss. The decision to be made is where to carry out the re-vegetation in order to optimize the use of the funds and minimize soil loss. Two models will be used to help us decide where to carry out the re-vegetation: a model based on the Universal Soil Loss Equation and an economic model.

The Universal Soil Loss Equation allows one to calculate the amount of soil loss in units of weight/surface area/year. The inputs to the model are: rainfall erosion index, soil erosion factor, slope length and slope gradient factor, vegetation cover factor, and agricultural practice factor. In order to obtain a map of the existing soil loss conditions, the area to be considered can be divided into pixels, the size of which are determined by the spatial resolution of the input data; the soil loss can thus be calculated for each of these pixels.

A modified conditions scenario can be calculated by changing the vegetation cover factor in the pixel where the re-vegetation is planned. The modified conditions scenario will provide the change in soil loss due to re-vegetation. Different modified condition scenarios can be calculated assuming the re-vegetation will be carried out in different locations. In this fashion, one can calculate where the re-vegetation will be most effective in reducing soil loss.

The economic model can be very simple, calculating the cost of re-vegetation per pixel considering two factors: slope and the existence of roads. Combining the output of the economic model with the soil loss for each of the modified scenarios calculated above, one could then choose objectively where to carry out the re-vegetation, by choosing the scenario with maximum reduction in soil loss/unit cost.

IV. RESPONSIBLE OFFICERS

Questions regarding this RFPs may be directed to the contacts below no later than ten (10) days before deadline for submittal of proposal.

Ivan A. Valdespino
Director IABIN Secretariat
P.O. Box 0843-02390
Panama, Panama
T: (507) 317-1994
F: (507) 317-1992
ivaldespino@iabin.net
<http://www.iabin.net>

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 19 finance value-added tools.

Richard M. Huber

*Principal Environmental Specialist
Sustainable Development and Environment
Organization of American States
1889 F. St., N.W., Suite 695
Washington, D.C. 20006
T+202-458-3227
F+202-458-3560
RHuber@oas.org*

V. AWARD INFORMATION

There are up to US\$125,000.00 of IABIN resources to be awarded to proposals and, only, in exceptional cases this amount may be higher. One or more awards can be made with available resources, thus, budgets should be prepared accordingly. Those proposals that include value-added contributions from proponents will be favorably evaluated (see Section IX). The period of performance for the majority of projects funded under this initiative is one year, starting on the date the award is signed. Project proposals must be designed accordingly.

VI. ELIGIBILITY

VI.1 Eligible Applicants: Open to NGOs, government agencies, academic and scientific institutions in IABIN countries that have experience developing value-added tools or that have the potential to develop them (the list of countries that have endorsed the IABIN GEF project can be found in www.iabin.net).

VII. INTELLECTUAL PROPERTY RIGHTS

The institutions selected to develop value added tools must agree to make tools and applications developed by the project available through the IABIN Web Portal / Gateway under conditions described in the section "ACCESS TO INFORMATION AND INTELLECTUAL PROPERTY REGULATION" found at <http://www.iabin.net/english/documents/governance.shtml> , and conditions found on http://www.iabin.net/english/bioinformatics/protocols/standards_&_formats.shtml .

In general, those institutions that develop value-added tools with IABIN resources shall not have any title, copyright, patent, or other proprietary rights in any work –developed with funds provided by IABIN. All such rights shall lie with IABIN. At the request of IABIN, the beneficiary institution shall assist in securing the intellectual property rights of tools and applications produced and in transferring them to IABIN.

VIII. TARGET DATES

Proposals must be received by **Friday, July 6, 2007** and should be addressed to Mr. Ivan Valdespino, IABIN Secretariat Director (ivaldespino@iabin.net) and copied to Mr. Richard Huber, Principal Environmental Specialist at the OAS (rhuber@oas.org).

1. RFP released by May 18, 2007
2. Proposals due by July 6, 2007
3. Proposal reviewed by July 30, 2007
4. Successful Proposal applicants contacted by August 10, 2007

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 20 finance value-added tools.

IX. SELECTION CRITERIA

Interested parties should submit a Proposal of no more than twenty (20) pages to develop a value-added tool for decision-making. In the Proposal the interested party should outline its interest and technical expertise to carry out the proposed project (as indicated in this RfPs and the Project Implementation Plan, PIP). The ability to bring together other institutions (no signed letters or commitments requested at this time, but are looked upon as advisable), the capacity to bring additional funding (although a co-financing of at least 1:1 is not a requirement it will be considered a plus; see Section X), and to build upon already developed tools by proponent will be look at favorably.

Proposals will be evaluated based on the following criteria.

Administrative Aspects:

1. The organization's experience and competence relevant to the proposed tasks.
2. Relevant technical experience of the proposed institution's staff in relation to the proposed tasks.
3. General academic qualifications of institution or organization's staff.
4. Knowledge and capacity to develop tools in IABIN's official languages.
5. Proved capacity to establish collaboration with similar organizations based on the potential to complement each other and leverage additional resources.
6. Availability of co-financing.

Technical Aspects:

1. Explains / shows how the application will demonstrate to decision makers how data and information can be effectively used in the decision making process
2. Considers the integration of biodiversity and socio-economic data in asking questions and resolving them
3. Develops a model or visualization tool that has prediction capabilities of spatial distribution, changing distributions according to key variables, three dimensional visualization, and time-series animation (fly-through)
4. Developed tools allow users to visualize data and information in an interactive, as well as non-interactive manner
5. Utilize data with models to develop scenarios (options and consequences) for decision makers
6. Mechanisms proposed will provide users with developed tools through the IABIN Web Portal / Gateway
7. Developed tools are built with the capacity to be used throughout IABIN regions
8. Developed tools are multilingual, or in IABIN official languages (at least English and Spanish and if possible, in Portuguese).
9. Projects will be favorably considered if, in addition to the above, they demonstrate a potential for at least one of the following: leveraging additional funding to support the development of the value-added tool and/or adapting/enhancing decision-making tools developed by other institutions who in turn agree to share their tools with IABIN.

Annex 1 describes the proposal evaluation procedure.

X. COST SHARING REQUIREMENTS

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 21 finance value-added tools.

There is no cost sharing requirement; however, it is strongly recommended that proposals include substantial co-financing in order to be competitive. The matching can be achieved through one or more of the following:

- project funds from non-IABIN sources
- salaries of people involved in the project that are paid by non-IABIN funds (at a percentage equal to the percentage of their working week spent directly on the project)
- volunteer time spent directly on the project calculated at an hourly wage equivalent
- In-kind support to the project (donation of hardware, software, travel costs, etc.)
- donations or grants from other institutions in support of the development of IABIN decision-making tools

XI. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

Proposals should be sent via e-mail to the persons indicated in Section VI in MS Word, using the following outline. Please note that proposals should only be twenty (20) pages long or less and will only be accepted if they follow the format indicated.

XI.1. REQUIRED FORMAT OF PROPOSAL:

Proposals may be submitted in Spanish, English, or Portuguese; abstracts are required to be in both the original language and as applicable in English or Spanish.

PAGE 1:

A. Title for Proposed Project

B. Contact Information for Principal Investigator(s)

- Name:
- Address:
- Country:
- Telephone:
- Fax:
- Email:
- Website:

C. Contact information for Managing Institution

- Institution Name:
- Address:
- Institutional Contact Person
- Name:
- Telephone:
- Fax:
- Email:
- Website:

D. If Applicable, a List of other participating Institutions (including institutions with staff to be trained by grantee)

PAGE 2:

E. Project Summary: An abstract of the proposal (200 words or less) both in English and Spanish. It should include the title of the project, geographic location, a brief description of the need for the project, goal(s), objectives, specific project activities, beneficiaries, and expected products.

PAGES 3-18:

F. Project description (Maximum sixteen pages) - A description of the proposed outcome (product) of the project. This should follow a basic scientific proposal content in which the following questions are addressed: what is proposed and its relevance (objectives and relevance), how this will be done (methodology), what will be achieved, what outputs will be delivered, what innovation will be generated, how the project success will be measured (in keeping with IABIN project monitoring and evaluation methodology). This should be developed in the format below:

1. **Statement of Need:** Describe the project's value to IABIN; why it is important that this project be implemented and include supporting information (e.g., what regional or hemispheric established need is addressed by the proposal). Describe any overlap or complementarities with existing informatics or value added tools being developed by your organization or others in IABIN countries or neighboring countries and how this could be used, modified or adapted to IABIN community needs. Describe how this proposal will fill existing gaps.
2. **Project Goals and Objectives:** Project goals must be clearly defined and directly relevant to the need(s) identified above. Project objectives must be measurable, realistic (attainable within the project's period of performance), and be directly relevant to the goals identified.
3. **Project Activities, Methods and Timetable:** Discuss in detail all proposed project activities and describe the method(s) to be used to implement the objectives. Include a timetable indicating roughly when activities or project milestones will be accomplished.
4. **Provide time frame / work plan** indicating when activities, tasks, and project milestones or outputs will be accomplished, as well as responsible person and monitoring and evaluation mechanism (based on the stated anticipated benefits and outputs and assurance that the products will reach the intended beneficiaries.). Please, include also **preparation of quarterly technical and financial reports**). In general, projects should last no more than one year as indicated in Section V
5. **Monitoring and Evaluation --** how the project success will be measured (in keeping with IABIN project monitoring and evaluation methodology. See www.iabin.net for the IABIN M&E Methodology).
6. **Relevant literature cited as footnotes**

PAGE 19-20

G. Project budget

A one page project budget, calculated in US dollars (may include salaries or wages, travel, equipment and supplies, and other [must be explained]) that shows how IABIN's financial resources for the development of the tools would be spent, and how that support fits together with co-financing provided by your or partner institution(s) (please note the description of allowable cost-share items, above). Clearly indicate budget items for which IABIN funds would be used. No overhead is allowed as a budget item.

H. Budget Justifications: Justification must be provided for all requested budget line items. Justifications must demonstrate a clear connection to project activities, and

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 23 finance value-added tools.

should clarify how line item amounts were determined. Justifications for personnel salary should be well documented, including the base-line salary figure and the estimate of time (percent) to be directly charged to the project.

The categories of items that can be financed by IABIN are goods, consultant services, non-consultant technical services, training and operating costs.

(i) The term "Non-consultant technical services" means contractual expenditures incurred for logistics and printing services under the Project;

(ii) the term "Training" means expenditures incurred for logistic arrangements of meetings, reasonable transportation costs and per-diem of trainees and trainers (if applicable) and rental of training facilities and equipment under the Project; and

(iii) the term "Operating Costs" means reasonable recurrent expenditures that would not have been incurred by the Eligible Institution absent the Project, for transportation, and per-diem costs, salary for the Eligible Institutions' incremental staff, Project administration costs, operation and maintenance of office equipment, and non-durable goods, all needed for the implementation of the Project

XII. AWARD ADMINISTRATION

Award Notices: Following review, successful applicants can expect to receive written notice, most often transmitted by e-mail, from the Project Officer assigned to the project at OAS.

Successful applicants may be requested to provide revisions to the project scope and/or budget before an official contract is issued. An agreed upon annual work plan will be requested as well from the applicant. Successful applicants will be also informed of the approximate date they can expect to receive for review and signature the "Contract", which is normally sent via e-mail.

Unsuccessful applicants can expect to receive written notice, most often transmitted by e-mail, within 30 days of the final review decision.

Contract administration and payments will be performed by SG/OAS through direct payments, once previous acceptance of products occurs by IABIN Secretariat and the project committee.

XIII. Supervision:

Technical supervision and facilitation of this consultancy will be provided by a Project Committee, while administrative supervision will be done by the OAS.

XIV. Reporting:

Quarterly and final technical and financial reports are expected. A format for financial reports will be forwarded by OAS.

Products develop should also be submitted according to work plan and make freely available through IABIN and / or other agreed upon mechanisms.

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 24 finance value-added tools.

Annex 1 – PROCEDURE TO EVALUATE PROPOSALS

IABIN funds will be awarded to institutions submitting outstanding proposals to develop, adapt, or modify value-added tools to address the interest of IABIN community on environmental management, biodiversity conservation, and sustainable development. The following criteria will be used to evaluate the proposals. Institutions with the highest scores will qualify to receive financial resources to develop the tools proposed as per IABIN financial resources allocated for this year under Component 3. Information Products Tools for Decision-Making of the IABIN project.

Name of Institution: _____

Country: _____

Objective of Proposal:

Criteria	Scale	Score	Remarks
Administrative Aspects		30%	
The organization’s experience and capabilities relevant to the proposed tasks.	1-20		
Relevant technical experience of the proposed institution's staff in relation to the proposed tasks.	1-20		
General academic qualifications of institution or organization’s staff	1-20		
Knowledge and capacity to develop tools in IABIN’s official languages.	1-20		
Proven capacity to collaborate with similar organizations based on the potential to complement each other and leverage additional resources.	1-20		
Subtotal/100 points			
Subtotal/30%			
Technical Aspects		70%	
Tool will address at least one of the priorities laid out in Section III: “Areas To Be Addressed By The Proposals” above.	1-40		
Integration of biodiversity and socio-economic data in resolving key questions and addressing pertinent issues in the Americas.	1–20		
Model or visualization tools proposed with prediction capabilities of spatial distribution, changing distributions according to key variables, three dimensional visualization, and time-series animation (fly-through)	1-20		
Tools allow users to visualize data and information in an interactive, as well as non-interactive manner	1-15		

Reference Document No. 3 for the 5th IABIN Council Meeting: Priorities to 25 finance value-added tools.

Utilization of data with models to develop scenarios (options and consequences) for decision makers	1-15		
Mechanisms proposed to provide users with developed tools through the IABIN Web Portal / Gateway	1-10		
Tools are built with the capacity to be used throughout IABIN regions	1-15		
Tools are multilingual, or in IABIN official languages (at least English and Spanish, with Portuguese as a plus).	1-15		
Subtotal/150 points			
Subtotal/70%			
TOTAL SCORE/100%			

Date of Evaluation: _____