Document of
The World Bank

Report No: ICR00002272

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-53526)

ON A

GRANT FROM THE GLOBAL ENVIRONMENT FACILITY

IN THE AMOUNT OF US$6 MILLION

TO THE

ORGANIZATION OF AMERICAN STATES

FOR THE

BUILDING THE INTER-AMERICAN BIODIVERSITY INFORMATION NETWORK

(IABIN) PROJECT

March 23, 2012

Sustainable Development Department

Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

Currency Unit = US$

FISCAL YEAR

ABBREVIATIONS AND ACRONYMS

CAF	Corporación Andina de Fomento
CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CHM	Clearing House Mechanism
CIs	Coordinating Institutions
DGF	Development Grant Facility
FMRs	Financial Monitoring Reports
GBIF	Global Biodiversity Information Facility
GEF	Global Environment Facility
GEO	Global Environment Objective
IABIN	Inter-American Biodiversity Information Network
IABIN-DIAG	IABIN Data Integration and Analysis Gateway
IEC	IABIN Executive Council
ISR	Implementation Status Report
M&E	Monitoring and evaluation
MTR	Mid-term review
NGO	Non-governmental organization
OAS	Organization of American States
OAS-CIDS	OAS Inter-American Committee on Sustainable Development
PAD	Project Appraisal Document
PDO	Project Development Objective
PDF	Preparation and Development Facility
QAG	Quality Assurance Group
TFESSD	Trust Fund for Environmentally and Socially Sustainable Development
TN	Thematic network
TORs	Terms of Reference
USGS	United States Geological Services

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LATIN AMERICA AND THE CARIBBEAN REGION

BUILDING THE INTER-AMERICAN BIODIVERSITY INFORMATION NETWORK (IABIN) PROJECT

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D A T A S H E E T

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1. Project Context, Global Environment Objectives and Design

1.1 Context at Appraisal

1. 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 and sustainable use.

2. In the early 1990s, various countries of the Americas grew interested in improving the sharing of biodiversity information across national borders. Several countries were establishing national biodiversity information infrastructures to help them meet their obligations under the Convention for Biological Diversity (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 information needs. 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.

3. The creation of the Inter-American Biodiversity Information Network (IABIN) was therefore officially mandated by the Heads of State at the Organization of American States (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, and the Biodiversity Conservation Information System, an initiative of nine programs of the World Conservation Union and partner organizations.*

4. It is noteworthy that IABIN was specifically intended to build on the Clearing House Mechanism (CHM)**.** The latter operates within the complex political and institutional environment of the CBD but is worldwide in scope, not focused on the Americas, and has limited technical capacity. This project supports a series of actions that aimed to build a close collaborative relationship between IABIN and the CHM, potentially leading to a more formal alignment in the future.

5. The Organization of American States (OAS), in its coordinating role for Summit follow-up, invited each country to designate an official IABIN Focal Point. IABIN was considered

officially launched when the OAS Inter-American Committee on Sustainable Development (OAS-CIDS) endorsed IABIN, in a resolution passed on October 15, 1999.

6. IABIN was also 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 2003 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 of the objectives and the implementation of the Convention on Biological Diversity and the UN Convention to Combat Desertification.

1.2 Original Global Environment Objectives (GEO) and Key Indicators (*as approved*)

7. The Inter-American Biodiversity Information Network (IABIN) was officially mandated at the Summit of the Americas on Sustainable Development, convened in Santa Cruz de la Sierra, Bolivia, in December 1996. To support the development of IABIN, this Global Environment Facility (GEF) project sought to: (i) consolidate the development of this Internet-based, decentralized network to provide wider 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.

Table 1. Key Performance Indicators

Global Environment Objective	Outcome/Impact Indicators
To develop an Internet-based, decentralized network to provide access to biodiversity information currently existing in individual institutions and agencies in the Americas	About 4 new multinational partnerships per year facilitated by IABIN involving access to biodiversity information within the Americas, starting in Year 2 (At least 16 in total)
To provide the tools necessary to draw knowledge from that wealth of resources to support sound decision-making concerning the conservation and sustainable use of biodiversity	Starting in Year 3, IABIN-developed or IABIN-supported information management tools being downloaded and demonstrably used in decision making

1.3 Revised GEO (*as approved by original approving authority*) and Key Indicators, and reasons/justification

8. The Global Environment Objective (GEO) has not been revised. There were several proposed changes made to the outcome and output indicators. In 2007, the IABIN Secretariat revised the monitoring framework with a reduced number of more concrete and well-defined outcome and intermediate outcome indicators; however there was no formal restructuring to record these changes.

1.4 Main Beneficiaries

9. An investment in IABIN was expected to result in global benefits considerably exceeding those that would likely accrue over the next decade through national efforts alone. The main beneficiaries of the Project were categorized into two groups: providers of biodiversity data and data users. Data providers including museums, universities, and environmental NGOs would benefit from the regional consensus on standards for communication, taxonomic information, metadata, controlled vocabularies and record structures, and related capacity building. Data users including civil society, educators/students, and decision-makers at all levels would be able to access a range of benefits from easy access to information to better implementation of the Convention for Biological Diversity (CBD) and national biodiversity strategies. At a broader level, all the countries and territories in the Americas would benefit directly and/or indirectly from this project, especially communities whose development depends on biodiversity resources, people who are vulnerable to natural disasters, students, civil society, and the scientific community, and policy makers.

1.5 Original Components (*as approved*)

10. **Component** 1($1,720,000 GEF funds), **Interoperability and Access to Data,** developed basic data standards and network infrastructure to allow users to search and access biodiversity data and information through the IABIN Catalog Service and the Thematic Networks. Under this component, the project sought agreement on the use of certain standards and protocols to ensure compatibility of diverse data sources within the region. IABIN's approach to enabling better biodiversity information access was through the development of: i) the IABIN Catalog Service; and ii) five Thematic Networks (TNs) to provide search and retrieval capabilities to data on a specific theme or area of interest.

11. **Component 2** ($2,465,000), **Data Content Creation,** aimed to provide data providers the tools, training, and physical capacity to make data available to users through the network. The IABIN Content Development Program aimed to support multilingual training, and provide technical leadership to IABIN countries as they develop data for access within the IABIN network. The Program included 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; and data and metadata quality control.

12. **Component 3** ($500,000), **Information Tools for Decision Makers,** aimed to provide visualization and data integration tools to improve the usability of the data in the decision making process. Specifically, the products of this component included tools to allow the user to

ask questions from biodiversity and socio-economic databases in an integrated manner. Under this component, socio-economic data relevant to biodiversity issues were to be identified and tools provided through the IABIN Portal to allow users to access socio-economic and biodiversity data in an integrated manner.

13. **Component 4** ($913,600), **Sustainability of IABIN,** included project coordination, support for partnerships and communications (communication products, such as the IABIN Portal, publications, meetings, etc.) and funding, on a declining cost basis, for the position of Director of the Secretariat.

14. **Component 5** ($400,000), **Administration,** covered strictly administrative costs of the Executing Agency (contracting, procurement, disbursements, audits, etc.).

1.6 Revised Components

n/a

1.7 Other significant changes

15. There have been five amendments to the Project; with only the fifth amendment requiring a level 2 restructuring. The *first* amendment (February 2006) transferred allocations from Consultants' services to a new category for Expenditures under Coordinating Institutions (CIs) Transfers; reallocated proceeds of the GEF Agreement; and updated the Bank's Guidelines for Procurement. The *second* amendment (June 2006) financed the incremental operational costs for Eligible Institutions under the Project and reallocated amounts among existing expenditure categories. The *third* amendment (December 2008) was for a reallocation of funds to allow for INBio (Coordinating Institution for Species and Specimen TN) to take on additional activities under Component 2, hence the transfer of additional funds, and to include a new procurement method (Commercial Practices instead of Consultants Services). The *fourth* amendment (February 2010) was to re-incorporate Schedules 4 (Operating Account) and 5 (Participating Countries) to the Agreement omitted in the first amendment; to further amend Schedule 5 to reflect the increased number of' Participating Countries; and to extend the Closing Date to June 30, 2011. The *fifth* amendment (restructuring paper prepared June 2011) extended the closing date until September 20, 2011 and reallocated some funds.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

16. Overall, the Project design was aligned well with the overall project and global environmental objectives. At the fundamental level, the design created a knowledge entity (the IABIN network) with clear standards and protocols that could be applied by varied users within and across countries. Importantly, the design was anchored in on-going political (e.g., Summit of the Americas mandate) and global processes (e.g., Convention on Biological Diversity, Global Biodiversity Information Facility) thus ensuring alignment with country priorities and an enhanced spirit of cooperation among the 34 participating countries.

17. The building of IABIN was an ambitious undertaking at a time when there was no successful precedent in establishing a biodiversity informatics network at this scale and scope. The architecture was web-based, and was designed to seek agreement and build on existing standards and protocols for biodiversity-related information to ensure compatibility of diverse data sources within the region. The success of the project design (and consequent interest in and demand for such an undertaking) is also measured in the considerable leveraging of funds –with the Project attracting a significant amount of resources (approximately US$23 million) in the form of co-financing that was way beyond the actual GEF allocation of US $6 million.

18. Implicit in the innovative project design was that IABIN would not manage data itself, but would build on past successes and successful national and sub-regional models, and work through network nodes, provide connectivity and resources. For this, the PAD included a review of 13 Global and regional programs, all of which providing elements that supported the exchange of biodiversity information between institutions. The review included information about the overlaps in both geographic scope and subject content of existing programs. With these inputs, the IABIN was designed to fill identified gaps, as well as positioned within a specific niche in terms of biodiversity informatics.

19. *Sequencing of components:* The project design did not properly sequence the implementation of the Thematic Networks (i.e., adoption of regional standards and development of training modules), Component 2 (capacity building and data content creation) and Component 3 (development of tools to integrate TN data). Subsequently, Secretariat resources were not used optimally in the implementation of project components two and three.

20. *Institutional arrangements:* IABIN would have benefitted from a more realistic analysis and assessment of the institutional capacity and arrangements for executing the project. The institutional set-up for IABIN proved to be cumbersome, impacted project execution, and may not be sustainable. Also, while country ownership of and engagement in project activities for this hemispheric network was good, it would have been further strengthened if the country focal points/networks were directly funded by the project in the initial stages.

21. *Monitoring indicators:* The overall design of the project was generally appropriate to the objectives. However, the project design was negatively affected from the beginning of implementation by a weak and somewhat unrealistic set of indicators. Of the 18 original indicators, several of the higher level impact indicators were difficult to measure; under the previous LogFrame format, many of the output indicators lacked clear definition, baseline, and target, which made them difficult to monitor. There were serious efforts made to revise the list of indicators resulting in a revised monitoring framework in 2007 with 9 more concrete indicators, but there was no formal restructuring undertaken.

22. *Risk assessment*: The project document did include an assessment of risk relating to partnership with United States Geological Services (USGS), coordination among the thematic networks, incentives to adopt the IABIN standards and currency of data. However, the assessment failed to capture fundamental risks such as the institutional structure with an ambiguous status of the IABIN Secretariat, the brand/identity of IABIN, and the possible lack of support from the IABIN Focal Points to promote IABIN at national level.

2.2 Implementation

23. **The Project was amended (restructured) five times** (level 2 restructuring). Several involved reallocation of funds across categories, while two of them included extensions to the life of the Project (for details, see paragraph 15). A **mid-term review** started in October 2008 (but was completed only in November 2009 due to a change in consultant). The review was timely and took stock of Project achievements, identifying issues contributing to implementation delays, and making concrete recommendations.

Major issues affecting project implementation

24. **Lack of common understanding about roles, responsibilities and lines of authority between OAS, the IABIN Secretariat and other key implementing partners.** The design of IABIN consistently stressed the subsidiarity of the IABIN Secretariat to the IEC. As the executing agency, the OAS was responsible for executing the Project in coordination with the IABIN Secretariat. However, with the hiring of the Secretariat staff as OAS contractors, these staff became OAS employees within the Department of Sustainable Development, subject to OAS rules and procedures and HR practices. At the same time, the IABIN Secretariat was also accountable to the IEC on the day-to-day implementation of the Project. This arrangement created the potential for misunderstanding the lines of authority between the OAS, IABIN Secretariat and the IEC. Occasionally, the lack of communication between the IABIN Secretariat and the OAS created confusion among the national coordinating institutions, data content grantees, and external partners.

25. **Difficulty in mobilizing financial resources to co-finance the IABIN Secretariat's Director's salary**. The IABIN Secretariat faced considerable difficulty in mobilizing financial resources required under the project agreement to co-finance the IABIN Secretariat Director's salary (the declining percentage of the Director's salary was a requirement from the GEF, which had initially declined to finance the IABIN Secretariat functions). This co-financing requirement turned out to be a serious structural constraint for IABIN's sustainability (and had partially contributed to the loss of the Director at the beginning of 2008). Fund-raising for the Secretariat functions was administratively difficult as the Secretariat did not have a legal status as an independent entity. Furthermore, while substantial co-financing was leveraged for implementing activities in IABIN, none was earmarked for the salaries of the Secretariat staff. Different options were proposed to the Council to resolve the issue (e.g., to collect dues from participating countries or charge data users to download tools from IABIN.net). However, no agreement was reached, and after the original five year term for the Secretariat, the Project decided to create and finance a Coordinator position for coordination of partners, fund-raising and dissemination. Other functions, such as the Director and the technical coordination, were assumed by the OAS and the USGS.

26. **Critical role of the U.S. in supporting and catalyzing technical achievements.** The early concept of IABIN was largely originated by key actors from the US, Brazil, Colombia, Mexico, and the World Bank. The United States, in particular, was instrumental in the establishment of IABIN, with considerable technical support from the National Biological Information Infrastructure (NBII). As the Chair of the IABIN Council, the U.S. led key discussions among the countries (e.g., via six Council meetings and regular communications

among the IEC members), facilitated the endorsement of the GEF project from the 34 countries, and helped forge partnerships with GBIF and CHM. IABIN also served to channel US expertise to the participating countries in the hemisphere. In addition, the IABIN Catalog and Invasive Species TN (I3N) have been led by the USGS experts including NBII whose time and travel were contributed as co-financing to the Project. Importantly, the Technical Coordinator of the Secretariat benefitted from the technical expertise and mentorship of the NBII experts in developing IABIN architecture, 5 TNs and Catalog, and coordination of Technical Working Group. These experts also provided technical oversight of the on-going activities as a gap-filling measure when the Technical Coordinator position was ended. The USGS also financially supported the Secretariat in its transition when funding from the GEF started to decline.

27. **Incompatibility between the World Bank disbursement policies and OAS (the Recipient) contracting policies.** Due to unplanned sequencing of the components, the implementation of Data Content sub-grants was delayed slowing down the overall disbursement rate. With as many as 124 small grants averaging US$10,000, disbursements slowed down because a major part of the payment to these sub-grantees was made when the final products were delivered in order to achieve the goal. This was problematic as the OAS contracting policies prohibits issuing contracts beyond the uncommitted amount in the Operating Account, while the replenishments to the Operating Account by the Bank are based on the actual disbursements.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

28. Reporting, monitoring and evaluation for the IABIN Project included World Bank supervision; a mid-term review (MTR); and the conduct of annual audits. The OAS prepared semester reports, procurement plans, financial monitoring reports (FMRs), terms of reference (TORs) for contracts, CI Transfer Agreements, and other project documentation and submitted the same with quality and timeliness.

29. *M&E design:* The design of the M&E for this Project, as reflected in the results framework, was inherently weakened by the high number and poor design of the outcome and output indicators –which did not realistically capture project achievements and some of which could not be directly measured. The concern over the monitoring indicators was pointed out in the ISRs in early stages of the project, but continued to plague the project throughout implementation.

30. *Implementation and utilization:* Several ISRs noted concerns about the monitoring indicators, but there was no formal restructuring regarding the indicators throughout the Project. At the Fourth IABIN Council Meeting in April 2005 in Panama, there was general agreement to improve the measurability of some indicators (e.g., Sector-related CAS Goal, GEF Operational Program, Global Objective) and for which no direct actions or activities were planned at the country level, where they needed to be achieved. A methodology for monitoring IABIN indicators was developed by the Secretariat in 2007 which reduced the number from 18 to 9 indicators. Several ISRs requested clarifications on whether restructuring was required, but the team received subsequent internal guidance (from the Development Effectiveness Unit) to revert to the original set of indicators. Furthermore, the OAS semester progress reports did not include the Project's monitoring and evaluation (M&E) framework –further limiting utilization of these

indicators (and contributing to difficulties in assessment of outcomes/ outputs at the end of the Project).

2.4 Safeguard and Fiduciary Compliance

31. **Safeguards**: The Project contributes to improved environmental management through the provision of data and information that would drive decision making relating to biodiversity conservation at local, national and regional levels. Given this, this Project was assigned to be "Category C" with no safeguards policies triggered as a result of activities implemented by this Project.

32. **Financial management and disbursement issues**: The Project sought and received exception to OP/BP 12.20 on Special Accounts with the explanation that the Recipient maintains one omnibus account (Operating account) for all transactions of the institution and separate ledger accounts for individual projects. This arrangement was satisfactory and did not prevent proper monitoring of the implementation of the project. However, there was an incompatibility between the World Bank disbursement policies and the OAS' contracting policies –which was identified only during Project implementation. World Bank disbursement policies do not allow for the Operating Account to be replenished until the account is drawn down by actual disbursements. On the other hand, the OAS' contracting policies did not allow for the issuance of contracts until the full financial commitments were credited into the Operating account. This disconnect between the policies of the two agencies proved to be a problem in the smooth implementation of the project.

33. **Procurement issues:** Conforming to the Bank's procurement policy, the Bank requested an ex-post review be done every fiscal year and that the OAS send a list of procurements under the thresholds for the current year. There was a change in the procurement arrangement for the CIs (reflected in the first amendment) that caused a major delay at the beginning of the project. During Project preparation, CIs were expected to be hired as consultants. However, during Project implementation, it was recognized that the CIs were required to provide substantial co-financing, and therefore a co-executing status was more appropriate. As a result of this change, the start of their activities under Component 1 was delayed by one year to formalize the co-executing arrangements for the five Thematic Networks. In another instance, during Project implementation, there was a change in procurement methodologies for development of value-added tools (Component 3) from a contracts-based management of project funds to a grants-based management of funds –resulting in delays to the project. During Project implementation, it was recognized that the development of these value-added tools required the selection of the most innovative products related to Component 3, rather than selecting the best firm/consultant for pre-defined tools. For this reason, a grants-based management of funds was more appropriate.

2.5 Post-completion Operation/Next Phase

34. Significant advances have been made in the development and integration of standardized biodiversity information with GEF Phase I funding. A follow-up project is under development (with OAS and IDB) entitled: *Using IABIN Data and Tools to Facilitate National and Regional Decision-Making Processes for Conservation and Sustainable Development.* Under this proposal, funding is being sought to ensure efficient access to these IABIN Thematic Network (TN) data

and tools for use in key national and regional conservation and sustainable development processes and decisions across the region. The Humboldt Institute in Colombia is a possible partner that would house the Project.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

35. **Relevance of objectives.** The Project development objective (PDO) and global objectives remain highly relevant in the context of the continued pressure and resulting degradation of the world's biodiversity. The main purpose of IABIN, to create an information-rich enabling environment for conservation and sustainable use of biodiversity in the Americas, fits perfectly with the GEF definition of an enabling activity for biodiversity conservation.

36. In terms of *global priorities*, the IABIN Project supports the implementation of measures necessary for achievement of goals, targets, and objectives of the Convention on Biological Diversity (1992), and works hand-in-hand with the CHM (Clearing-House Mechanism). IABIN is also of potential value in the implementation of a wide range of other international conventions and programs including the United Nations Convention to Combat Desertification, RAMSAR Convention on Wetlands, the Convention on Migratory Species, etc.

37. **Relevance of design.** The relevance of project design was high in several respects. *First*, the Project design was premised on the approach of achieving hemispheric information sharing on biodiversity by removing barriers (e.g., developing data standards and protocols, training and capacity building, etc) that limit the sharing of such information. A review of existing biodiversity information networks helped to position and design IABIN without duplication of efforts and filling a niche in terms of providing wider access to quality biodiversity information currently scattered around the Americas. *Second*, the Project built on existing political processes (e.g., Summit of the Americas mandate) as well as global processes (e.g., CBD). This helped to position IABIN as a region-wide network that was aligned closely with country priorities and included enhanced cooperation among the 34 participating countries. *Third*, the quality of cooperation with other development partners has been very strong both from a technical assistance point of view (especially from the United States Geological Services) and the significant amount of financial resources leveraged from other donors to support the project.

38. **Relevance of project implementation.** The relevance of project implementation was very high in terms of the creation of the internet architecture for information sharing relating to biodiversity conservation (including data content creation, standardization of existing data, protocols), and the formation of five thematic networks. In addition, the Project financed targeted training to build capacity among people in key institutions (including government, NGO, research organizations, and academia) as well as small grants to encourage digitization of data. Furthermore, value-added information tools were developed to support sound decision making relating to biodiversity conservation.

3.2 Achievement of Global Environmental Objectives

39. **Project objectives were achieved to a large extent.** Considerable progress has been made in achieving the Global Environmental Objectives of (i) developing an internet-based, decentralized network to provide access to biodiversity information currently existing in individual institutions and agencies in the Americas; and (ii) providing the tools necessary to draw knowledge from that wealth of resources to support sound decision-making concerning the conservation and sustainable use of biodiversity,

40. Over its life of seven years, IABIN has generated over 5 million biodiversity records from over 100 institutions; trained over 1000 specialists from museums, botanic gardens, academic institutions, and NGOs in data digitization, integration, and analysis; and raised awareness of status and trends in biodiversity and habitats, identifying where gaps exist and where attention is needed. Through its activities, IABIN has improved the means of gathering and analyzing data, data transformation into knowledge, and transferring this information to the relevant parties for action and decision making. More specifically, the Project made significant contributions towards achievement of the project objectives in the following areas:

41. *Strengthening access to information for conservation and sustainable use of biodiversity*. Significant progress has been made under this Project in establishing regional standards and the internet architectures under the five selected Thematic Networks (TNs) which has enabled access to biodiversity information spread out in the Americas. A multilingual thesaurus was developed to allow users to discover a range of resources through keywords related to their search queries in all three supported languages. The data that was made accessible through Catalog include collections, information tools, software, documentation from IABIN TNs, published literature, species profiles, web sites, publications, and legislation related to IABIN participating countries. Metadata and data were geo-referenced and searchable by location.

42. *Enhancing quality of biodiversity-related information through data standardization and digitization.* Biodiversity informatics standards and protocols for the 5 TNs and catalogue were standardized throughout the OAS Member States. These include regional standards and protocols for registry services, interface description, access protocols, data coding, data transport, document format, and graphic format, and metadata for bibliographical data. Each TN made significant progress in standardizing data and datasets. For example, the Ecosystem TN developed a standardized classification database for terrestrial, marine and fresh water ecosystems with mapping layouts and cross-references to local ecosystem classifications. About 128 small grants awarded to institutions through the network have helped to digitize biodiversity data with regional standards to be shared through IABIN architectures. Each year, more than 5 percent of the data available through IABIN represented newly digitized data. In addition, quality assurance of those newly digitized data was performed in terms of geographic location, resource type, and properties.

43. *Building partnerships for strengthening quality and scope of biodiversity information in the Americas.* The IABIN Project had an ambitious target of facilitating at least 4 new multinational partnerships per year involving access to biodiversity information within the

Americas. Through its effective networking, the Project was able to exceed this target –building as many as 18 new partnerships.[1] In addition, through IABIN, there was an estimated total of 145 institutions from 23 countries as well as regional/international institutions which participated in the Thematic Networks.

44. *Boosting support for local and national decision-making through the development of appropriate information tools.* The Project developed six value-added information tools to support decision-making using the data provided by IABIN DIAG (IABIN Data Integration and Analysis Gateway) through the integration, overlay and visualization of data shared through IABIN. These tools helped place millions of species, specimen, invasive, and pollinator data on a geospatial platform, as well as ecosystem and protected areas data, coordinating with virtually every engaged Government, NGO and academic institution in the hemisphere.

45. *Building capacity through training*: Each Thematic Network has developed training modules and training materials in English and Spanish, and delivered to targeted staff in key institutions throughout the region. For example, the Invasive Species Thematic Network has held training workshops on information standards, database management, and invasive species risk and pathways assessment. The Pollinator Thematic Network conducted several training workshops on how to digitize and share specimen or observation data, and pollinator-plant association records with the network and others. In all, approximately 1047 people were trained in technical content on biodiversity conservation issues and access to related databases, information and records built through IABIN.

46. *Demonstrated use of IABIN-supported data and information management tools*: One of the main achievements of this Project was to demonstrate the use of scientifically sound data from IABIN outputs in decision-making related to biodiversity conservation and sustainable use of natural resources. In the Bahamas, for example, the National Invasive Species Strategy was developed based on the tools and information made available by I3N-Bahamas. In Uruguay, an invasive species database (InBUy) developed with support from I3N has contributed to the creation of an official invasive alien species list for Uruguay and of a National and a Coastal Geographic Information System, and to awareness raising about the threat to biodiversity at both national and regional scale. Other examples of the use of IABIN products are found in El Salvador, Mexico, Brazil etc. The various value-added tools developed under Component 3 were developed late in the Project, thus limiting the evaluation of their use in decision-making at the time of writing this ICR.

47. *Leveraging of additional funds for IABIN.* The IABIN Project helped to leverage a significant amount of financial resources from other donors totaling approximately US$23 million, and complementing the GEF resources of US$6.0 million. This included both cash and

[1] Amazon Protected Areas Network, American Association of Geographers, Andean Development Corporation, Catalog of the Oberlin College Library, Central American Commission for Environment and Development, Conservation Commons, Encyclopedia of Life, ESRI, GEOSS, Inter-American Development Bank, IUCN-Sur, MolConnect, Pan American Institute of Geography and History, RAMSAR, ReefFix, USGS-EROS, Water Center for the Humid Tropics of Latin America and the Caribbean, and Western Hemisphere Migratory Species Initiative.

in-kind contributions from the U.S. Government, various foreign multilateral institutions, and non-governmental organizations in borrowing countries (see Annex 1).

3.3 Efficiency

48. A financial rate of return is not typically calculated for GEF-financed biodiversity conservation projects, and therefore, n**o formal economic analysis was completed for project implementation.** As required for a full-sized GEF project, an incremental cost analysis was done during the project preparation (see Annex 3 for details).

3.4 Justification of Overall Outcome Rating

Rating: Moderately Satisfactory

49. **The overall outcomes are rated as moderately satisfactory.** The PDO/GEO remains highly relevant, and has been achieved through the Project activities. IABIN has been an important input to Target 19 (*Biodiversity Knowledge Improvement and Transfer)* of the CBD that aims to improve, share widely, transfer and apply knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends etc. The design was largely relevant, working to standardize and digitize existing data, protocols and information available region-wide; and focused on overcoming barriers that limit the sharing of biodiversity-related information across countries and organizations. The scale and scope of this biodiversity informatics Project was unprecedented, and was grounded in existing political and global processes. Using innovative design, and situated in a specific niche compared to similar networks, the Project has been able to effectively support the development of an Internet-based, decentralized network to provide access to biodiversity information which existed in individual institutions and agencies in the Americas. It also financed the development of tools to support sound decision-making concerning the conservation and sustainable use of biodiversity. While overall the Project largely accomplished its development objectives, there were some challenges in terms of the lack of coordination and institutional confusion on roles and responsibilities which affected project implementation and delayed achievement of the objectives. Also, a weak monitoring framework limited the ability to measure Project outcomes. For these reasons, the Project is rated as Moderately Satisfactory.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

50. While the focus of the Project was mainly on biodiversity conservation, its data centric emphasis supported the implementation of Article 17 of the Convention on Biological Diversity (CBD) by promoting technical and scientific cooperation, and thus contributed directly to implementation of the CBD's Clearing-House Mechanism (CHM) as well as other areas critical to development and poverty alleviation.

(b) Institutional Change/Strengthening

51. The very multinational, multi-institutional nature of the undertaking was a difficult point of departure for any project. This was reflected in the difficulty of establishing the institutional arrangements to house IABIN. Organizations responsible for the project included 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 OAS as the Executing Agency and Recipient of the grant funds in representation of the IABIN Council, IABIN's Secretariat (based at The City of Knowledge, Panama City), the Coordinating Institutions (CIs) of the Thematic Networks, and the Governments and non-Governmental institutions of the Americas who are both data-providers and information users.

52. While most of these functioned as originally planned, the IABIN Secretariat did not. As stipulated in the PAD, the IABIN Secretariat Director's salary was to be financially covered on a declining basis (20% a year) with the difference being covered through fund raising. The fund-raising, however, was not successful (see paragraph 25) and the Director was let go in 2007. Eventually, the OAS assumed the Secretariat functions which allowed for a smooth closing of the project.

(c) Other Unintended Outcomes and Impacts (*positive or negative, if any***)**

53. In 2003, when this Project was conceived and designed, no-one could have predicted the phenomenal pace at which information technology would change over the next decade. To its credit, the IABIN was dynamic and flexible and over its 7 years of implementation, successfully adapted to the world of changing technologies. It also was innovative in developing additional programs using technology and on topics not included in the original design of the Project.

54. With the advance in geo-referencing technology, for example, the IABIN Catalog and TNs added focus on geo-referencing data, providing necessary tools and building capacity. Additionally, with leveraged funds from the Development Grant Facility (DGF), IABIN established the Connectivity Program for Central America to encourage the integration of biological data with socio-economic and geospatial data. In 2007, IABIN developed the GeoSUR Program (with funding from CAF) to replicate the successful experience of the Connectivity Program throughout the region. In 2011, this program received an award at the First Latin American Geospatial Forum for its achievements in developing a regional spatial data network to support better decision making.

55. With increasing global recognition about the impacts of climate change on vectors, IABIN also developed a forecast model of dengue fever risk for Leon, Nicaragua, which integrated ecological, climatic, socioeconomic and demographic data to create a forecast model for dengue risk. Building on its success, a similar system has been proposed to cover the Central America region. Other programs that IABIN has developed with additional funding included the *Andes Amazon Protected Areas Database* financed by the Gordon and Betty Moore Foundation, the *Ecosystem Conservation Priorities in the Neotropics by Integrating Biodiversity and Geospatial Data* project funded by JRS Biodiversity Foundation.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

N/A

4. Assessment of Risk to Development Outcome

Rating: Moderate

56. Overall, the Project's objectives remain highly relevant. The Project has built important networks and established a regional consensus on data standards and protocols. It has also developed training modules to support these, and initiated the development of tools and methodologies for the digitization and use of data for biodiversity conservation. However, there is still a **moderate level of risk** and this section examines the potential factors that might hinder the Project's PDO outcomes from being maintained.

57. *Sustainability of institutional arrangements within IABIN:* The institutional set-up for IABIN was complex, sometimes leading to confusion (between OAS, IABIN Secretariat, IABIN Executive Committee, national CIs) over roles, responsibilities and lines of authority in Project execution. The enabling environment continued to deteriorate, with the IABIN Secretariat's Director's departure in Year 4 (due to non-availability of matching funds to cover the salary shortfall); and by 2009, the IABIN Secretariat was closed altogether. While the project has developed strong foundations in standards and protocols that should permit CIs to carry on the work of the network, the sustainability of IABIN activities remains a concern without further adjustments to the governance, legal structure, and capacity of the Executing Agency and IABIN participants.

58. *Continuity of hosting sites*: The structure of the decentralized network that comprises IABIN includes relying on several organizational/ institutional websites to host the data, information, catalogues etc. Changes in the availability of these hosting sites can potentially impact the functionality of IABIN, and access to its data, products and tools – and would require alternate solutions/ sites. In 2012, for example, the National Biological Information Infrastructure (NBII) under the U.S. Geological Survey's Biological Information Management and Delivery Program was closed –which impacted the funding that facilitated the NBII Node partnerships and the development and maintenance of applications and systems. The IABIN Catalog was hosted by NBII and is now no longer available; however, the metadata search capability has been somewhat inherited by IABIN DIAG. The Technical Working Group supported strongly by NBII experts now has new partners such as Encyclopedia of Life (EOL) and continues to be active.

59. *Availability of financing for follow-up project:* Under the IABIN project, a significant amount of standardized conservation data has been developed and integrated, and the products are ready for use with associated IABIN tools to support national and regional decision making processes. The OAS has put in a request to the GEF (with the Interamerican Development Bank through their Geo Spatial Database initiative) for a follow-up project (*Using IABIN Data and Tools to Facilitate National and Regional Decision-Making Processes for Conservation and Sustainable Development)* which will focus on ensuring efficient access to IABIN data and tools for application to key national and regional conservation and sustainable development processes across the region. The availability for funding for such a follow-up project is currently unclear.

5. Assessment of Bank and Borrower Performance

5.1 Bank

(a) Bank Performance in Ensuring Quality at Entry

Rating: Moderately Satisfactory

60. The design of this Project was based on the best available knowledge on biological informatics at that time (in 2003). The Bank team benefitted from highly technical consultations with leading biological institutions (both governmental and non-governmental) in the seven sub-regions, which facilitated discussions with more than 500 institutions, including the leading biological information networks.[2] These discussions contributed to shaping the technical framework of IABIN and initiated the process of defining appropriate components, standards and protocols for the Network.

61. The Bank team undertook an analysis of biodiversity information networks to extract lessons learned and best practice at the time (summarized in Annex 10 of the PAD) and to ensure that the IABIN project design had an appropriate niche, building on synergies across the region. Appropriately also, the Bank team recognized the importance of anchoring the Project within existing political and global processes to maximize country ownership; and of promoting the standardization of existing data, information and protocols relating to biodiversity conservation in the region. Embedded in the design was a defined focus on capacity building and development of information tools to support decision-making. Overall, the innovative design of the Project enabled flexibility in terms of adapting to the rapidly changing information technologies over the years –which ultimately resulted in the achievement of the development objectives.

62. There were, however, some shortcomings related to the poor design of indicators within the M&E framework, and issues related to the complex institutional arrangements which in turn impacted Project implementation. The need for sequencing of project components; and for harmonization between the Bank and Recipient's disbursements and contracting processes was not recognized during Project preparation, and often resulted in implementation delays.

(b) Quality of Supervision

Rating: Moderately Satisfactory

63. *Supervision Inputs and Management Attention*: Over the life of the Project, the technical inputs brought by the Bank team were very strong, with task team leaders as well as team members bringing a sound background in biodiversity, conservation, and biodiversity information management. This contributed to the innovative design of this highly technical

[2] These included the US National Biological Information Infrastructure (NBII), Mexico's World Network of Biodiversity Information (REMIB), Colombia's Information System of the Marine Environment (SIAM), Biodiversity Information System (SiB) by Humbolt Institute, Information System Atta by Instituto Nacional de Biodiversidad (INBio), and Brazil's Reference Center on Environmental Information (CRIA) as well as Global Biodiversity Information Facility (GBIF) and CBD's Clearing House Mechanism (CHM).

bioinformatics project, as well as helped to identify solutions to address implementation challenges. Due to the movement of staff across the Bank, the Project did have four Task Team Leaders, which somewhat limited the continuity of supervision follow-up, and client dialog. There was, however, an effort to have at least one team member work on the Project all the way from preparation through Project closing, to maintain institutional continuity. The Quality Assurance Group (QAG) review (carried out close to the MTR stage) found Bank management to have been active in raising key issues and in following up with the Recipient, but felt it should have picked-up on overly optimistic ISR ratings.

64. *Responsiveness to Supervision Problems*. The Bank team was good at identifying several of the implementation problems (e.g., weak indicators, coordination among institutions) early into the Project implementation. The team was proactive in making reasonable suggestions to help address them by facilitating discussions among the OAS, the IEC, and the Secretariat multiple times; participating in Council meetings and IEC meetings as observer yet providing guidance necessary for their decision-making; making recommendations to re-define and clarify governance structure; providing guidance to the Secretariat to revise the indicators with a clear monitoring framework; participating in TN's training and providing suggestions to improve monitoring of training activities; leveraging trust funds to support various activities; and working to accelerate disbursements for small grants. But there was modest progress in resolving several of these issues. For example, there was no formal restructuring undertaken to record the revised indicators; the issue of coordination and institutional responsibilities continued to limit project implementation; and the resourcing for the IABIN Secretariat Director's salary was not resolved. Also, the Bank team was sometimes slow in responding to requests for no objections by OAS – which sometimes contributed to implementation delays.

65. *Candor and Realism in Supervision Reporting:* Most of the ISRs (and comments from Management) were very realistic and did a good job of pointing out key concerns and problems affecting project implementation and sustainability. While the individual ratings (such as for M&E, or procurement) were realistic taking into account concerns during implementation, the overall Project ratings seemed overly generous (scoring mainly "Satisfactory"). Part of this perceived disconnect between the narrative of the supervision reports and the overall ratings may lie in the Bank team's assessment that the development objectives and outcomes of the Project were still attainable, despite implementation challenges. Furthermore, in the ISRs, the strong technical achievements of the Project were overshadowed by the attention to the institutional friction.

(c) Justification of Rating for Overall Bank Performance

Rating: Moderately Satisfactory

66. Considerable effort by the Bank team was dedicated to the initial preparation process, with country ownership at the highest level among the 34 participatory governments. The Project objectives and design were highly relevant in the region in terms of building a network, and accompanying tools and products to enhance information sharing on issues relating to biodiversity conservation. The innovative and flexible design of the Project was commendable, given the scale, scope and context within which it was conceived. And, despite its institutional

complexity, the Project ultimately reached its development objectives, with several of its major outcomes being achieved.

67. At supervision, the Bank team provided strong technical inputs (with considerable experience in biodiversity conservation and information technology) to the implementation of the various products, tools and training. In addition, the Bank team was proactive in identifying issues leading to implementation delays, and providing guidance. The MTR was particularly constructive providing recommendations for improving implementation progress; and the 15 month Project extension was instrumental in helping to complete all project activities.

68. However, in hindsight, the Bank did not fully recognize some of the complexities of the institutional arrangements; and the adequate institutional and procurement arrangements during the project preparation; and the issues relating to the difference in disbursements and contracting policies between agencies. Furthermore, the Bank made modest progress in revising the monitoring indicators (no formal restructuring undertaken); and the rating on Project implementation in ISRs did not always reflect problems appropriately. For these reasons, the overall performance is rated as Moderately Satisfactory.

5.2 Borrower

(a) Government Performance

Rating: Moderately Satisfactory

69. Government performance for this Project –which worked at the hemispheric level with 34 individual countries –is difficult to provide an overall rating for. In each of the 34 countries which have endorsed the Project, designated National Focal Point (NFP) actively participated in the Council meetings and discussed the progress and challenges of the Network. However, except for a few country governments, the level of involvement and commitment of NFPs remained low. This was partly because IABIN-related activities were additional to the regular work of NFPs, and there were not enough support/incentive to actively engage in IABIN.

70. Furthermore, coordination and consensus building across 34 countries is never an easy task –and particularly so at both a technical and political level because they address issues of ownership, benefit sharing, and willingness to share information with neighboring countries. The IABIN Executive Committee (IEC) comprised of representatives from eight IABIN NFPs plus an inter- or non-governmental organization, guided the operations of IABIN, executed the policy decisions of the Council, and often made decisions on behalf of the Council. These IEC members, especially the US, played a critical role in Project implementation as well as promotion of the Network at large.

71. Given the decentralized architecture of the IABIN, its success has ultimately rested very considerably on the hundreds of non-governmental actors (NGOs, universities, museums, research institutes, individuals) who played critical roles in the generation and use of the biological data, and thus constituted the key players within IABIN. With the high level commitment from the participating country governments, and their support of the participation of the various non-governmental actors within their countries, the IABIN was able to successfully move forward in achieving its intended outcomes. Despite this, however, with the lower

involvement of NFPs in Project implementation, the overall "Government" performance is rated as Moderately Satisfactory.

(b) Executing Agency or Agencies Performance

Rating: Moderately Satisfactory

72. The executing agency for this Project was the OAS. Overall, it played an important role acting as the key agent steering the Project in terms of achieving deliverables, overseeing implementation and coordination of project activities, and handling procurement and financial management procedures. It also supported the IABIN Executive Council (IEC) and facilitated communication on key decisions. The Project also benefitted from the detailed and timely reporting on project activities by the executing agency, although integrated reporting on Project performance indicators was lacking.

73. The fiduciary procedures of the OAS were essentially sound, and they demonstrated strong fiduciary capacity to manage the IABIN project, despite some disconnect with Bank procedures. For e.g., the OAS procurement policy prohibits issuing contracts beyond the uncommitted amount in the Operating Account, while the replenishments to the Operating Account by the Bank are based on the actual disbursements.

74. When towards the end of the Project the Secretariat was closed down, the OAS stepped in to take on the role. With the release from duty of the Data Content Manager and the non-renewal of the TN Coordinator's contract, there was a void with respect to technical expertise. The USGS played an important role in providing the expertise to manage the highly technical aspects of Thematic Networks integration.

75. Serving as the executing agency for a hemispheric biodiversity informatics Project was no easy task, but the OAS was able to effectively manage the Project –leading to the accomplishments of most of the Project's intended outcomes. In terms of weaknesses, the lack of common understanding about the roles, responsibilities and lines of authority between OAS and IABIN Secretariat and other key implementing partners created some confusion among the CIs, data content grantees, and external partners. Additionally, friction amongst staff, and confusion in institutional roles resulted in implementation delays. For these reasons, the performance of the Executing Agency (OAS) is rated as Moderately Satisfactory.

(c) Justification of Rating for Overall Borrower Performance

Rating: Moderately Satisfactory

6. Lessons Learned

76. The IABIN Project presents tremendous possibilities of replicability both thematically and geographically, in the development of potential biodiversity information networks in Asia or Africa. Broadly, the critical success factors which contributed significantly to achieving project results included the adoption of technology developed by other initiatives (e.g. GBIF); interest in biodiversity data sharing by the organizations in the region; existence of institutions that manage specimens' collections at a regional level and initiatives that provided important collective

experience on relevant topics; and the existence of standards, protocols and international software tools. The flexibility of the Project design was especially critical –for it allowed IABIN to adapt to the rapidly changing information technology over the last decade (and which could not have been anticipated at the time of project conception). The specific lessons derived from this project can be categorized into the following areas:

Institutional

77. **The governance of regional projects has inherent challenges.** Therefore, institutional roles and responsibilities of such Project which involves multiple institutions in multiple countries should be clearly laid out and understood by all the key players prior to project effectiveness. Additionally, the Secretariat of a continent-wide (involving 34 countries) biodiversity information-sharing network is critical for its long term success and also for coordinating and monitoring the work of the thematic networks, technical decision making, and to be spearheading the search for continued financial and political support for the project. Also, in hindsight, it might have been better if IABIN had been established as a legally independent entity (e.g., non-profit registered in one of the member countries), or housed in an existing institution/mechanism whose core mission entailed biodiversity informatics (such as GBIF or CHM) in order for it to have appropriate legal status, institutional sustainability and financing.

78. **Country ownership is critical to success**. The IABIN Project was built on existing political (e.g., Summit of the Americas mandate) as well as global processes (e.g., CBD), and therefore benefitted from high country ownership. Higher involvement of national focal points in project activities (for example in the selection of collections to be digitized, in the development of computer technology, among others) would have helped to achieve even greater impact of this Project, specifically at the country level.

79. **Role of champions critical to Project implementation and sustainability.** Building the IABIN was an ambitious undertaking, relying on the commitment of 34 governments and the involvement of numerous institutions across the region. The OAS played a critical role in supervising the complex implementation arrangements, even while helping to ensure the delivery of outputs, coordinating project activities, handling fiduciary procedures, and reporting on progress. When IABIN was unable to attract permanent sources of funding by the close of the Project, the OAS committed to continuing to manage the day-to-day affairs of IABIN and the webpage through its Department of Sustainable Development. Furthermore, OAS has actively pursued funding from numerous different sources, for a second phase of the Project. In sum, it was important that the partner for such a project had the institutional mandate and reach across all of the participating countries.

80. **Emphasis on capacity building helps sustainability**. The IABIN Project specifically supported the capacity building efforts in institutions throughout the region, recognizing the value of information as an important resource for the conservation of biodiversity, giving credit to the work they do and adding value to the biological collections. Training was a key element within the development of the five Thematic Networks. The attention to capacity building and training in data creation tools, data quality and use of tools developed through this biodiversity informatics network project has contributed to the sustainability of the Project.

81. **Clarification of appropriate implementation arrangements for activities can help identify possible incompatibilities in fiduciary processes among agencies**. It is essential to work out the appropriate procurement arrangements for specific activities during project preparation to help identify potential incompatibilities in fiduciary procedures and avoid delays in the project implementation. In the case of the IABIN Project, the differences in the OAS contracting policy and the World Bank's disbursement policies were realized only during Project implementation when the OAS needed to accelerate the rate of contracting. It would have been useful to identify and address these issues in advance for smoother operation.

Technical

82. **Flexible design helps project adapt to technological changes. When this project on building an internet-based biodiversity information network wa**s conceived and designed in 2003, almost no actor in IABIN could have anticipated the amazing speed at which the world of data management, data access and web informatics would change during the lifetime of the project. It is to the credit of the flexible design –which early on abandoned any notion of data centralization and embraced new data exchange protocols as they became available –that the Project was able to adapt fairly well to new technologies and new developments in connectivity.

83. **Technical expertise and support plays critical role in guiding technical aspects of project design, and partners have an important role to play in this process.** Amongst the various actors in IABIN, the USGS played a very important role in ensuring the quality of the technical components within the Project –by contributing time and travel of key experts. These experts provided technical expertise and mentorship to the Technical Coordinator of the Secretariat to develop the IABIN architecture, the five Thematic Networks and Catalog, and the coordination of Technical Working Group. Through their inputs, USGS experts also helped to manage the highly technical aspects of Thematic Networks integration.

84. **Evaluate technical capacity of institutions early**. For the IABIN Project, it was important to identify at the outset those institutions that did not have in house informatics capacity and provide access through data hosting centers. Not doing this evaluation early proved to be an obstacle during project implementation. Additionally, assessing the quality of available data (having detailed metadata from the institutions as early as possible in the digitization process) was seen to be critical to avoid hampering Project outcomes. Also, in order to avoid disruptions and retrofitting it was fundamental to define the policies and procedures for data quality control at the outset of the project.

85. **Identify the users of the products**. In order to establish project priorities it is important to work with counterpart agencies to identify what their information needs are. Knowing the users, their limitations (technical, infrastructure) and consequently their needs, is an important criteria for deciding which data digitization projects should be funded.

Dissemination

86. **Have an effective outreach strategy**. For a multi-country and multi-stakeholder project such as IABIN, an effective public education and outreach strategy should be part of the project design. Such a strategy would ensure that the varied project stakeholders/audiences are well

appraised on project progress and that outputs from the project reach the ultimate beneficiaries. This would serve to strengthen ownership of the project by the various countries and also enhance sustainability of project outcomes.

87. **Disseminate widely and legitimize knowledge generations**. Concrete outreach efforts must be made to disseminate the achievements and products of the thematic networks with the target audience. Legitimizing the knowledge generated through the Project and the technical, administrative and scientific capacity developed at participating institutions allowed them to be recognized as potential data providers for future projects. By making users aware of the information/ tools developed, the Project was able to demonstrate the use of scientifically sound data from IABIN outputs in decision-making related to biodiversity conservation and sustainable use of natural resources.

7. Comments on Issues Raised by Borrower/Executing Agencies/Partners

(a) Borrower/executing agencies

88. Significant issues raised by OAS (see Annex 7), which served as the executing agency for the Project, and the World Bank team responses are discussed briefly below:

- *Changes in procurement procedures*: The OAS suggests that implementation delays were due to changes in procurement procedures at the World Bank, and cites two specific amendments. The World Bank team wishes to clarify that during Project implementation, an improved understanding of (i) the functioning of the CIs (as co-executors rather than consultants for activities under Component 1); and (ii) the development of value-added tools requiring the selection of innovative products necessitated a change in the procurement methodologies (see paragraph 33). The Bank procurement guidelines themselves remained unchanged.
- *Revisions to indicators*: The OAS asserts that the Project "performance indicators were revised 3 times at Bank request, but new indicators had little impact on project supervision". The World Bank team wishes to clarify that there was a revised monitoring framework proposed in 2007 –but no formal restructuring was undertaken –and subsequent ISRs reported requesting the OAS to provide more comprehensive reporting utilizing the revised monitoring framework.
- *Executing Agency costs*: The OAS indicates that the Executing Agency received little or no (overhead fee) which hampered effective project implementation. The Project allocated 8.8% of the total grant for Operating Costs to cover recurrent expenditures incurred by the Recipient (OAS) during implementation such as for transportation and per-diem costs of its staff, Project administration costs, operation and maintenance of office equipment, and non-durable goods.

(b) Cofinanciers

(c) Other partners and stakeholders

Annex 1. Project Costs and Financing

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Component 1: Interoperability and Data Access	1.72	1.71	99%
Component 2: Data Content Creation	2.47	2.26	92%
Component 3: Information Tools for Decision Making	0.50	0.51	103%
Component 4: Sustainability of IABIN	0.91	0.84	92%
Component 5: Project Administration	0.40	0.50	125%
Total Baseline Cost	**6.00**	**5.82**	**97%**
Physical Contingencies	0.00	0.00	
Price Contingencies	0.00	0.00	
Total Project Costs	**6.00**	**5.82**	**97%**
Project Preparation Facility (PPF)	0.65	0.63	
Front-end fee IBRD	0.00	0.00	
Total Financing Required	**6.65**	**6.45**	**97%**

(b) Financing

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower (OAS and Governments)	In-kind	6.38	1.67	26%
Global Environment Facility (GEF)	Grant	6.00	5.82	97%
US, Govt. of	Cash, In-kind	6.35	6.41	101%
Foreign Multilateral Institutions (unidentified)	Cash, In-kind	1.38	1.09	79%
Non-Government Organization (NGO) of Borrowing Country	In-kind	14.82	11.62	78%
		34.93	20.79	60%

Annex 2. Outputs by Component

Project Component 1: lnteroperability and Access to Data

This component's objective was to develop basic data standards and network infrastructure that would allow users to search and access biodiversity data and information through the IABIN Catalog Service and the Thematic Networks.

1.1 IABIN Catalog Service

The objective of the IABIN Catalog Service was to 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. This activity was led by the National Biological Information Infrastructure of the US. Key outputs included:

- Adoption of standards for metadata for datasets (FGDC BDP), metadata for publications/sites (Dublin Core);
- Development of metadata creation tools and training materials using the adopted standards and protocols;
- Development of the IABIN Catalog Search System which accessed approximately 254,000 records of biological databases (metadata), collections, websites, published literature, species profiles, publications, legislation, and images relevant to the Americas;
- Establishment of the IABIN Technical Working Group and hosting meetings regularly with participation of IABIN Thematic Networks and biological informatics experts in the region to discuss technical topics including IABIN standards, pilot projects, sustainability, IABIN infrastructure, data integration across TNs, and data content creation; and
- Development of advanced web services such as the IABIN Trilingual Thesaurus to provide more accurate search results to its users.

1.2 Thematic Networks

IABIN supported the development of five Thematic Networks (TNs) that would provide search and retrieval capabilities to data on a specific theme or area of interest. The implementation of the TNs helped fulfill the objectives of IABIN and complemented those of other networks and parallel initiatives, generating support for mutual efforts.

1.2.1 Species and Specimens Thematic Network (SSTN)[3]

The SSTN's objective was to define and implement the architecture, tools, standards and protocols to access species and specimen information located in institutions throughout the region by using distributed access standards, consequently allowing the user to consult and use

[3] Species TN and Specimen TN were merged to achieve efficiency (managed by the same CI—INBio) and better integration of species and specimen data.

specimen and species data, integrated with ecosystems networks. Key outputs of SSTN under Component 1 included:

- Adoption of Plinian Core Standard for Species, Darwin Core Standard and the Access to Biological Collections Data (ABCD) Schema for Specimen collections and observation data;
- Development of a multilingual Species and Specimen Portal based on GBIF's Data Portal, making available over 5 million specimen records from 54 institutions and 31,000 species records from 14 data providers;
- Development of a multilingual Data Entry Tool (Ara) which allows the user to digitize, generate, manage, analyze, and share information on species (e.g., species descriptions, conservation, demography, taxonomic information, references, and distribution) and specimens (collections and observations);
- Development of English and Spanish training materials; and
- Development of e-Learning courses on the use of the SSTN Portal, Ara, Tapir protocol.

1.2.2 Ecosystems Thematic Network

The objective of the Ecosystem Thematic Network (ETN) was to implement an electronic and institutional network dedicated to regional ecosystem information that supports the decision making process. Key outputs of ETN under Component 1 included:

- Development of standard formats and databases for terrestrial, freshwater, and marine ecosystems with a hierarchy structure similar to the Global Earth Observation System of Systems (GEOSS).
- Development of the Ecosystem TN Portal that enabled access to records of 788 terrestrial ecological systems of Latin America and the Caribbean and 640 of the United States.
- Development of an on-line tutorial of the ETN Portal and tools.
- Development of data entry form (ETN standard Format) with a tiered structure that allows increasing level of detail in the characterization of an ecosystem.
- Development of Map Viewer for terrestrial, freshwater, and marine ecosystems.
- Crosswalks between the classes of national classifications and the reference classification of ecosystems.
- Establishment of GeoSUR to promote the use of geospatial standards and implementation of geoservers in Latin America and the Caribbean.
- Regional Geospatial Initiatives in Latin America and the Caribbean Meeting to coordinate actions and define a regional action plan in coordination with GeoSur (Abril 2009)

1.2.3 Invasive Species Thematic Network

The objective of the Invasive Species Thematic Network (I3N) was to encourage the creation and standardization of national and sub-national databases, promote their interoperability to provide direct access to databases currently scattered and inaccessible, and create value-added products. Key outputs of I3N under Component 1 included:

- Adoption of Dublin Core Metadata Standard;
- Adoption of Integrated Taxonomic Information System (ITIS) or Missouri Botanical Garden as taxonomic authority;
- I3N Portal and search tool (trilingual) that enables cross-country search and display;
- Templates for I3N database and country web system (trilingual) including user guide (trilingual) and help desk;
- Data indexing to provides a search tool that allows users to search all of the online I3N data sets simultaneously;
- Template for developing national strategies on invasive alien species;
- Development of country I3N databases for Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Jamaica, Paraguay, Uruguay, Venezuela;
- Development of Risk Assessment and Pathways Analysis Tools that supports prevention, early detection, and control of invasive species;
- Creation of I3N list-serv;
- Development of concepts/informatics training module in English, Spanish and Portuguese.

1.2.4 Pollinators Thematic Network

The objective of the Pollinators TN (PTN) was to facilitate the integration of pollinator species information at the regional level and to promote their interoperability to provide effective sharing of such information. Key outputs of PTN under Component 1 included:

- Development of Darwin Core Extensions for the standard for plant-pollinator interactions;
- Development of the Pollinator Contacts Database (over 200 records), searchable by taxa, discipline, name, country/region of expertise, country/region of residence;
- Development of the Pollinator Portal which accesses to occurrence and interaction data including 1.1 million of specimens in collections, 29k of pollinator-plant interaction data for Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Panama, Paraguay, and USA;
- Development of Pollinator Data Digitizer, Biodiversity Data Digitizer, manuals for each tool in 3 languages; and
- Creation of list-serv IABIN-PTN.

1.2.5 Protected Areas Thematic Network

The objective of the Protected Areas Thematic Network (PATN) was: i) to promote the more effective sharing of information on protected areas within and between the countries of the region, building on and contributing to existing global experience in this area; and ii) to provide the tools by which countries can assess the effectiveness of their protected area system and to share best practices and lessons learned. Key outputs of PATN included:

- Development of the PATN web portal with map viewer and guidelines document in three languages;
- Development of two types of web services: 1) spatial data in the form of OGC standard web mapping services (WMS), web feature services (WFS) and custom tile services, and 2) RESTful data application programming interface (API) to programmatically search and retrieve data;
- PATN database built on the existing World Database on Protected Areas (WDPA) technology and standard;
- Development of data digitizing tools on Geospatial data, protected areas catalog system, and new web-based data entry and edit tool; and
- Development of automated protected area data upload tools to allow easy integration of protected areas data into the IABIN PATN.

Project Component 2: Data Content Creation.

The incorporation of standards within IABIN needed to be accompanied by development of a formal Content Development Program. The IABIN Content Development Program supported multilingual training, and provided technical leadership to IABIN countries as they developed data for access within the IABIN network. While Component 1 created the network infrastructure and the contents and standards to access data and information through the IABIN Catalog Services and five TNs Networks, Component 2 improved the availability of critical data and metadata. Outputs under this component are listed below:

IABIN Catalog:

- Metadata training sessions held in Colombia (2008) and USA (2009) for a total of 40 people.
- 14 data content grants awarded to support data and metadata creation, web service development, and data-centered information technology activities.
- Review of newly digitized data and metadata.

SSTN:

- Two regional workshops to train the trainers for managing the developed software (28 participants from 23 American countries).
- 36 data content grants for specimen data awarded to 34 institutions from 13 countries, digitizing about 1,300,000 specimen records.
- 12 data content grants for species data awarded to 12 institutions from 7 countries in the Americas, digitizing about 37,000 species records.
- Quality control of newly digitized data.

I3N:

- Training workshops on I3N tools and templates held in 18 countries.
- 21 data content grants awarded to 17 institutions from 15 countries in the Americas.
- Quality control of newly digitized data.

ETN:

- Training on the use of standard format of terrestrial ecosystems .
- Two metadata training sessions in coordination with GeoSUR.
- 24 data content grants awarded to 18 institutions from 8 countries in the Americas.
- Quality control of newly digitized data.

PTN:

- 4 training courses on the use of the PTN Data Digitizer, PTN Web Portal, and PTN Contacts Database.
- 18 data content grants to 15 institutions from 11 countries in the Americas.
- Quality control of newly digitized data and help desk support for grantees.

PATN:

- Training workshop for participants from 18 countries (September 2008).
- 7 data content grants awarded to 7 institutions from 7 countries.
- Review of new PA datasets.

Project Component 3: Information Tools for Decision-Making

An important objective of IABIN was to make biodiversity information useful to decision-makers in the public and private sectors. The IABIN Portal was intended to host a series of value-adding applications that would demonstrate to decision makers how data and information can be effectively used in the decision making process. Specifically, the intended products of this component included tools that would allow the user to ask questions from biodiversity and socio-economic databases in an integrated manner.

IABIN and its partners have developed the following 6 information products for decision making:

- An Application for the Integration, Visualization, Sharing and Analysis of IABIN Thematic Network Data—IABIN Data Integration and Analysis Gateway (DIAG)
- Modeling system for the scenario actions of development and possible hazards to the biodiversity;
- An internet-based GIS ecosystem assessment and reporting toll (EAR) for conservation decision-making;
- Developing the functionality of the IABIN ecosystem thematic network database to enhance the ETN classification framework and geospatial portal;
- System for decision making based on conservation categories and biodiversity uses; and
- Providing means for a better understanding of biodiversity: improving primary data and using it for threat assessment and in situ conservation planning in South America.

Project Component 4: Sustainability of IABIN

4.1 IABIN Secretariat

The IABIN Secretariat was established in Panama under the agreement with City of Knowledge as its host. The Secretariat was composed of the Executive Director, TN Coordinator, and Data Content Manager. The Secretariat managed the day-to-day operation of the Network and actively engaged in fundraising. The Project leveraged co-financing of about US$23 million. Additional funds were leveraged from JRS Foundation ($200K), Moore Foundation ($634K), the World Bank's Development Grant Facility (DGF)($800K) and Trust Fund for Environmentally and Socially Sustainable Development (TFESSD)($250K), and Corporación Andina de Fomento (CAF)($50K).

4.2 Partnerships and Communications

This sub-component intended to further develop inter-governmental and inter-institutional relationships as well as relationships with existing programs. Key outputs included:

- IABIN Council meetings and IABIN Executive Committee (IEC) meetings alternated every year. Key decisions were agreed upon in these meetings.
- Partnerships have been established with more than 18 international institutions/programs.
- Created and maintained the IABIN Portal.
- Produced brochures, newsletters, and research papers.
- Participated and promoted IABIN through international fora such as GBIF, CBD, Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), 10th Conference of the Parties (COP 10), OAS Ministerial on Sustainable Development Meeting, Biodiversity Information Standards (TDWG), etc.
- Reflected indigenous people's aspect in IABIN where appropriate, e.g., vocabulary in Guarani included in Paraguay I3N database, NBII and I3N led a workshop at the National Tribal Conference on Invasive Species (2006).

Component 5: Project Administration

The recipient and executing agency of the Project was the General Secretariat of the Organization of American States (GS/OAS). Principal documents have been prepared and submitted to the Bank regularly including the Annual Operating Plan, procurement plan, semester reports, financial management reports, and audit reports. Mid-term review produced an assessment report, a vision report, and a sustainability report.

Indicators Table

Indicator	Baseline	Original Target	Actual Value at Completion
Results (Outcome) Indicators, by Project Component			
- About 4 new multinational partnerships per year facilitated by IABIN involving access to biodiversity information within the Americas, starting in Year 2 (At least 16 in total)	2 (GBIF, CBD)	4 per year and at least 16 in total	**Exceeded.** 18 in total (Amazon Protected Areas Network, American Association of Geographers, Andean Development Corporation, Catalog of the Oberlin College Library, Central American Commission for Environment and Development, Conservation Commons, Encyclopedia of Life, ESRI, GEOSS, Inter-American Development Bank, IUCN-Sur, MolConnect, Pan American Institute of Geography and History, RAMSAR, ReefFix, USGS-EROS, Water Center for the Humid Tropics of Latin America and the Caribbean, and Western Hemisphere Migratory Species Initiative)
- Starting in Year 3, IABIN developed or IABIN-supported information management tools being downloaded and demonstrably used in decision making	0	N/A	**Achieved**. Developed a variety of tools under each TN. IABIN's GeoSur was awarded by the First Latin American Geospatial Forum for its achievements to support better decision making. Examples of the use in decision making include I3N's contribution to the national invasive species strategies and actions in Bahamas, Uruguay, El Salvador, Mexico, Brazil and more.
Output Indicators, by Project Component			
Component 1			
- IABIN Catalog is developed and user-base expands to reach 10,000 users by Year 3, and continues to expand by 20% a year thereafter	0	10,000 users by Year; 20% increase per year thereafter	**Achieved**. 9,957 views in the 3rd quarter of 2008. 400 unique visitors in 2009, 1582 in 2010 (295% increase). (Due to change in analytics technology, results were measured in different units.)
- Metadata tools and training materials available in multiple languages	0	N/A	**Achieved.** Metadata tools and training materials are available in multiple languages.
- Each TN is operational by end of Year 2 with established protocols, standards and tools which have been adopted by a wide range of organizations in the region	0	N/A	**Partially achieved.** All TNs became operational by early Year 3 with protocols and standards adopted.

Indicator	Baseline	Original Target	Actual Value at Completion
- Number of institutions and number of countries participating in TNs increasing by 20% in Year 3 (baseline=Year 2) and by 10% in Years 4 and 5	N/A (Year 2)	20% increase in Year 3 and 10% in Years 4 and 5	**Not available**. % increase is not available as there is no baseline data. However, an estimated 145 institutions are participating in TNs (including those from 23 countries and regional/international institutions).
- Use of datasets and websites developed by each TN increasing by 20% per year after the TN is operational for one year	N/A	20% increase per year after TN operational for one year	**Partially achieved.** No data per year available. Average 108% up in the last reporting period.
Component 2			
- IABIN Catalog content increases by 10% a year, and number of institutions contributing metadata increases by 10% a year (baseline = end of Year 2)	150,000 data contents (Year 2)	10% increase per year	**Partially achieved**. No data in 2006 and 2007. +33% in 2008, no change in 2009, +27% in 2010.
- Number of datasets in the region consistent with IABIN interoperability standards increase by 20% a year (baseline = end of Year 2)	16	20% increase per year	**Not available.** Yearly data on number of datasets N/A. However, at least 128 datasets in total have been integrated.
- Each year, 5% of data available through IABIN is newly digitized data (in particular addressing known data gaps)	0	5%	**Exceeded**. More than 5%. A significant data (over 5 million in total) have become accessible through IABIN.
- At least 100 people trained per year	0	100 per year	**Achieved.** Yearly data N/A. Overall approximately 1047 people trained in total. (= average 149 per year).
Component 3			
- At least 3 decision-support tools developed that integrate information from more than one TN	0	At least 3	**Exceeded**. 6 decision-support tools developed
- Downloading of these tools increasing by 10% per year once they have been available for one year	0	10% increase per year	**Not available.** No data on the use due to the late completion of the tools.

Indicator	Baseline	Original Target	Actual Value at Completion
Component 4			
- Visits to IABIN Portal increase by at least 20% per year the first year (and 10% thereafter) indicating effective coordination and maintenance (baseline = pre-project visits of 18,000/month)	18,000/ month	20% per year (Year 1) and 10% thereafter	**Partially achieved.** 60,000 hits/month in 2005, 108,000 hits in May 2007. No consistent (or more recent) data available due to several changes in the host server of IABIN Portal and change in technology to track visits.
-Additional funding identified and obtained for continued and effective functioning of IABIN by end of year 2 (to cover costs covered on a declining basis by GEF)	0	Not specified	**Partially achieved.** No additional funding had been identified for the Secretariat. However, each TN is going to be supported by CIs' own funds.
- Collaborative agreements established with at least two international initiatives and/or networks each year	2	2 agreements per year	**Exceeded.** 18 partnerships established. See the first Outcome Indicator.
- IABIN Council Meetings and/or IEC meetings held every year	0	1 every year	**Achieved**. Council meeting and IEC meeting alternate every year.
Component 5			
- Project M&E is rated satisfactory or better by the World Bank and by the IABIN Council	N/A	Satisfactory	**Not achieved**. Majority of Bank ISRs for the Project rated the M&E as less than satisfactory.

Annex 3. Economic and Financial Analysis

A formal ex-post economic analysis has not been prepared.

Incremental Cost Analysis: As required for a GEF project, an Incremental Cost Analysis was used for the project's economic and financial analysis at appraisal. Benefits under the Baseline Scenario in biodiversity conservation in the Americas were assumed to be increased in terms of improving access to databases at institutional level, data creation at institutional level for various biological information datasets, and maintaining sustainability of databases. The total Baseline costs were estimated at US$28.04 million.

The Project was estimated to provide multiple benefits at both national level and regional level – providing a network in the region to exchange information relevant to conservation and sustainable use of biological diversity and creating region-wide compatible datasets to help fulfill the mandate of the Clearing-House Mechanism of the Convention on Biological Diversity; and developing value added application to contribute to a greater understanding and better decision-making of conservation and sustainable use of biological diversity. The total incremental cost calculated at appraisal was US$34.93 million, of which US$6 million was to be financed by the GEF.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Douglas J. Graham	Senior Env. Specialist	EASVS	TTL
Keiko Ashida Tao	Operations Analyst	LCSEN	
Armando Eduardo Guzman Escobar	Senior Disaster Risk Management	LCSUW	
Dianelva Montas	Program Assistant	CSBGP	
Fabiola Altimari Montiel	Senior Counsel	LEGLA	
Irani G. Escolano	Consultant	LCSPT	
Loretta Sprissler	Social Development/Indigenous Specialist	LCSES	
Luis Schwarz	Senior Finance Officer	CTRLA	
Morag Van Praag	Sr. Financial Officer		
Nada Beainy	Intern	LCSES	
Reynaldo Pastor	Chief Counsel	LEGLA	
Vincent Abreu	Consultant	LCSES	
Yabanex Batista	JPA	LCSES	
Yurie Tanimichi Hoberg	Senior Economist ARD	ARD	
Supervision/ICR			
Alejandro Alcala Gerez	Senior Counsel	LEGLA	
Fabiola Altimari Montiel	Senior Counsel	LEGLA	
Keiko Ashida Tao	Operations Analyst	LCSEN	
Yabanex Batista	JPA	LCSES	
Diomedes Berroa	Senior Operations Officer	LCSPT	
Peter M. Brandriss	Operations Analyst	EASSD	
Carmen Brinckhaus	Consultant	CTRDM	
Alfredo Alexander Coles Coghi	Consultant	LCSUW	
Nelvia Hayme Diaz	Program Assistant	SDNRM	
Irani G. Escolano	Consultant	LCSPT	
America Teresa Genta Fons	Lead Counsel	LEGLA	
Douglas J. Graham	Senior Env. Specialist	EASVS	TTL
Sophia Guerrier-Gray	Paralegal	LEGLA	
Armando Eduardo Guzman Escobar	Senior Disaster Risk Management	LCSUW	
Glenn S. Morgan	Regional Safeguards Adviser	LCSDE	TTL
Fabienne Mroczka	Financial Management Specialist	LCSFM	
Alexandre Borges de Oliveira	Senior Procurement Specialist	LCSPT	
Waleska Magalhaes Pedrosa	Program Assistant	LCC5C	

Gunars H. Platais	Senior Env. Economist	LCSEN	TTL
Claudia Sobrevila	Senior Environmental Specialist	AFTEN	TTL
Emilio H. Rodriguez	Consultant	LCSPT	
Luis Tineo	Senior Operations Officer	GPOBA	
Rosa G. Valencia De Estrada	Consultant	LCSPT	
Joao Nuno Vian Lanceiro da Veiga Ma	Senior Procurement Specialist	LCSPT	

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY02		39.34
FY03		37.67
FY04		182.68
FY05		1.70
FY06		0.00
FY07		0.00
FY08		0.00
Total:		261.39
Supervision/ICR		
FY02		0.00
FY03		0.00
FY04		0.00
FY05		87.16
FY06		46.77
FY07		90.84
FY08		58.84
FY09		97.96
FY10		87.31
FY11		73.65
FY12		25.74
Total:		568.27

Annex 5. Beneficiary Survey Results
(if any)

Annex 6. Stakeholder Workshop Report and Results

Key actors and partners of IABIN met at the 7th IABIN Council meeting held at the OAS in September 2011. The meeting examined the progress, challenges, lessons learned from the Global Environment Facility (GEF) Project "Building the Inter-American Biodiversity Information Network." The participants included IABIN Focal Points from over 16 OAS member states, the Coordinating Institutions (CIs) of IABIN Thematic Networks, including NatureServe, International Union for the Conservation of Nature (IUCN), the National Institute for Biodiversity of Costa Rica (INBio), the United States Geological Survey (USGS), the Pollinator Partnership, and new partner organizations and experts in areas related to bioinformatics, conservation and sustainable development including and the Conservation Biology Institute and Encyclopedia of Life.

The final products which showcased the five thematic networks and their integration by the IABIN Data Integration and Analysis Gateway were presented, finalizing Phase I of the Building IABIN Project. Participants reviewed the value added tools for decision making and the data content developed under this hemispheric network. IABIN Focal Points and Coordinating Institutions (CIs) recognized the importance and achievements of the efforts made under the GEF-funded Building IABIN Project. Based on these achievements, the participants strategized on how to best utilize and plan future development of the tools and products under this network which has awarded over 120 seed funds grants to over 100 museums, universities, herbaria, government research institutes and civil society organizations to digitize biodiversity data following regionally accepted standards. The questions the participants discussed were: "What are our objectives for IABIN Phase II – What difference do we want to make?" There was a rich discussion over the key questions that IABIN can help answer by providing data and tools to decision-makers, the definition of the most important audiences for IABIN – users of the data – that the Network should be working closely with, what are the best opportunities, environmental decision-making processes, and existing initiatives that we should become involved with to meet our objectives, and how should IABIN be structured and governed to be successful in Phase II.

Next Steps: At the conclusion of the meeting, the participants agreed to continue working for the second phase of IABIN to i) continue to advance objectives of Phase I, ii) contribute to sustainable development to have real impact of the ground, iii) ensure mechanism that will allow all countries to benefit from the data and tools, iv) build capacity, to communicate and market the utility of this network, and v) measure the successful implementation of the IABIN project.

During the interim phase between Phase I and Phase II, it was agreed that IABIN Executive Committee would provide leadership to keep IABIN moving forward through this interim phase. The OAS would continue to manage IABIN so that each country would have time to consider how to structure IABIN in the future. It was agreed that when Phase II funds become available, there should be a plan on how to structure the IABIN network, e.g., a coordinating body that has staff and expertise to address the following functions: administrative, development, marketing, training, scientific, and technical. Also discussed was the need for a well-defined set of Network Components, e.g., Secretariat, Council, Executive Committee, Focal Points, Country Representatives, Thematic Networks, and Technical Committee (made up of the TNs and other technical partners); and to have consistent and scheduled communication between these components of the IABIN structure. A Working Group would be identified to structure Phase II and to raise the necessary funding.

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

Assessment of the operation's objective, institutional arrangements, design, implementation, and operational experience

This ICR details the implementation of the GEF/WB "Building IABIN" project, a US$35 million, 6.3 year effort of which US$6 million has been awarded by the GEF and US$28.9 million parallel financing from 78 regional / national institutions.

Responding to the importance in the Americas of protection of biodiversity, 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 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, a single point of access to the integrated resources of the network is a key component of IABIN. Since IABIN's inception in 1996, all 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 international, NGO, and private sector communities. The IABIN Executive Committee (IEC) comprises representatives from 8 countries and an IGO/NGO member, currently the Global Biodiversity Information Facility. The IABIN Secretariat was established in December 2004 and closed in December 2009. It managed the day-to-day activities of IABIN. The IEC chose the City of Knowledge in Panama City, an NGO, as the Host organization for the IABIN Secretariat.

The IABIN Gateway, found at www.iabin.net, is becoming a gateway to biodiversity information in the Americas as well as a mechanism for facilitating interconnection of data from different institutions and agencies concerned with biodiversity conservation. The Gateway provides simple user interfaces for sharing knowledge. IABIN is also developing a searchable catalog of biodiversity data and information resources that allows users to identify and locate content available through the network: biodiversity datasets, publications, museum collections, value-added information (e.g. hotspots, ecoregions, invasive species) etc.

Institutional Arrangements: The GEF Grant became effective in September 2004, and had an original closing date of December 2009, extended twice until June 2010 and then September 30, 2011. Organizations responsible for the project include the Implementing Agency, an Executing Agency, the IABIN Secretariat, the IABIN Council and the IABIN Executive Committee (IEC), the Coordinating Institutions (CIs) of the Thematic Networks, the IABIN Focal Points, and the governments and institutions of the Americas who are both data-providers and information users.

Governance of IABIN

Initial governance design: The initial proposal for IABIN governance was based upon a report provided by John Busby, founder of the Environmental Resources Information Network (ERIN)

and consultant to IUCN on the development of the Biodiversity Conservation Information System. Busby proposed that IABIN be designed as a "managed network", a hybrid between a centralized "hub and spokes" network and a completely distributed network ("many to many" relationships). Implied in the design is acknowledgement that IABIN would not manage data itself, but would work through, and provide connectivity and resources for, network nodes.

IABIN's Rules of Procedure: IABIN's Rules of Procedure (RoP) were adopted at the First IABIN Council Meeting in 1999, and were modified in the Second IABIN Council Meeting in January 2002. Under the RoP IABIN consists of two policy making/supervisory bodies, the National Focal Points and the IABIN Council, as well as three supporting bodies, the Intergovernmental Convener, the technical working groups, and the network secretariat.

IABIN Council: The IABIN Council and IEC (IABIN Executive Committee) play a major decision-making role in project implementation. The Council has met according to schedule and has maintained an Executive Committee, made up of 8 Countries and 2 NGOs to manage affairs of the Council between meetings. The Rules of Procedure stipulate that Focal Points are to undertake national level consultations. No standards or guidelines have been established within IABIN for national level consultation. Effective integration of IABIN with national institutions and processes varies by country but was facilitated by the Data Content Grants.

Fundraising and Governance: The Project Operations Manual stipulates that the Focal Points will assist in securing pledged co-financing for the Building IABIN project. Focal points, in general, should be key to building effective partnerships for a strong IABIN, and could be better supported to advocate on behalf of IABIN through technical assistance and clear procedures.

Thematic Network Implementation. The structure of the thematic networks was conducive to achieving the desired results and has sustainability. The themes address the needs of IABIN stakeholders and have been expanded to include migratory species through the WHMSI (Western Hemisphere Migratory Species Network). The organization and timing of the project components were realistic but the data content grants were sequential to the establishment of the TNs and the Coordinating Institutions were essential in the process of the RfPs and data quality control. The resources were sufficient to achieve the tasks as a phase 1 initiative.

Relevance of Thematic Networks: A frequent observation of the TNs is the absence of climate change from IABIN's portfolio. The Summit process may have lacked the political consensus at the outset to address climate change, but it is now very clearly a priority as noted at the 2010 Ministerial meeting on Sustainable development. The selection of TNs was a pragmatic one, based upon both relevance and ability to deliver results. The project has shown good judgment in adapting to evolving circumstances, e.g., in combining Species and Specimens into a unified TN when it became apparent that duplication and overlap was unavoidable. Each of the TNs has provided important lessons for further work in bioinformatics in the region, and the broad reach afforded through the thematic networks links processes and institutions together to create a whole greater than the sum of the parts. The most important task to demonstrate the relevance of the Thematic Networks is to ensure that by the conclusion of the project key value-added tools that link information across TNs to support decision-making are available.

Assessment of the outcome of the operation against the agreed objectives

The objectives, design, and implementation of the "Building IABIN" are considered to be of a high overall relevance. IABIN made progress on a number of fronts:

- 128 (average 10k) data content creation grants were awarded or are in process between 2006-2011. http://www.oas.org/dsd/IABIN/Component2.htm
- All data have been quality controlled and integrated into a geospatial database and gateway called the IABIN DIAG. http://www.databasin.org/iabin
- The IABIN Council and Executive Committee (IEC) members were kept informed of project execution and network activities through Semester and Workshop Reports, and by keeping IABIN.net and http://www.oas.org/dsd/Bio-Proj-Sum.htm up-to-date.
- IABIN webpage. www.iabin.net is operational in Spanish and English
- 6 projects under Component 3: Information Products for Decision Making are completed and two projects are well advanced and should be completed in the upcoming months (see http://www.oas.org/dsd/IABIN/Component3.htm).
- All TNs developed training modules, with many training materials in both English and Spanish. PATN and PTN developed the training materials in Portuguese.

Achievement of Global Environmental Objectives: The project was able to attain the outcomes envisioned at project design. Biodiversity informatics standards and protocols for the 5 TNs and catalogue as well as the IABIN DIAG were implemented throughout the Americas Hemisphere with all 34 Member States of the OAS becoming interoperable. The project has been instrumental in increasing the awareness of the potential of biodiversity data to be mounted on a geospatial platform to perform environmental and social assessment.

Evaluation of the OAS Executing Agency own performance during the preparation and implementation of the operation

An IABIN Secretariat of 3 staff established at the City of Knowledge in Panama in 2005 created ambiguity in project administration and was costly and inefficient. The IABIN directors salary was funded in first year in total and thereafter on a diminishing basis of 20%/year, the shortfall of which was to be made up through fundraising.[4] In year 3 this shortfall was met by USGS. In year 4, the necessary funds had not been raised and the Director was let go in 2007. The other 2 staff of Secretariat stayed on for another year and a half, and the office was closed in December, 2009. Overall the IABIN Secretariat had a cost to the project of roughly US$1m. The design of IABIN consistently stressed the subsidiarity of the IABIN Secretariat to the IEC. The assumption of the responsibility for execution of "Building IABIN" project however put the management of the Secretariat directly under the OAS; Secretariat staff became OAS employees within the Department of Sustainable Development. This created the potential for conflict as lines of authority became blurred between the World Bank, OAS, and IEC.

[4] The PAD stipulated that the project cover 80%, 60% and 40% of the salary of the Director respectively in the third, fourth and fifth years of project implementation. The US Geological Survey provided the remaining portion in the third year of the project, as well as assuming the costs for additional training and educational needs for the IABIN Thematic Networks Coordinator and Data Content Manager.

The IABIN Director departed in Year 4, and the position has been left vacant since then, because the project had not raised the matching funds required. Without an IABIN Director, the professional staff of the Secretariat had to work independently without direct daily supervision and support. This situation deteriorated further when the data content manager refused to comply with the ToRs. Ultimately all the tasks of both the data content manager and thematic network coordinator and responsibility for the webpage were moved to GS/OAS under direct supervision of the executing agency. With this new management regime the project progressed efficiently. Lesson learned: do not create new independent secretariats or bureaucracies as they are not sustainable and difficult to manage from afar.

The GS/OAS was responsible for the production of semester reports, AOPs, Procurement plans, FMRs, TORs for contracts, RfPs, CI Transfer Agreements, and all other project documentation that was overall produced on time and with high quality. Comments were rarely received from the Bank on any of this documentation. Semester reports were sent to the 34 Country IABIN Council members, in both Spanish and English, and were also posted on the web. The iabin.net webpage contained all documentation and quick access to the TNs and tools for decision making.

IABIN has, to date, been unable to attract permanent sources of funding through any of the mechanisms such as an endowment, donor contributions or country allocations. The OAS will continue to manage the day-to-day affairs of IABIN and the webpage as requested by the Member States through its Department of Sustainable Development. The CIs have agreed to manage their data and value added tools and maintain/ update when possible.

Evaluation of the performance of the Bank, any cofinanciers, or of other partners during the preparation and implementation of the operation

Over the life of the Project, the level of involvement of the World Bank varied –being extremely strong in the initial and final phases, with instances of very low responsiveness in critical phases of implementation. Several delays stemmed from changes in either the World Bank procurement rules, changes in procurement officers who interpreted rules differently, or slow pace of Bank no objections necessary to expedite project progress. The most noteworthy of such delays occurred in year 2 when the entire contracting process for the CIs changed at the request of the Bank from contracts to Coordinating Institution Transfer Agreements.[5] This change in procedures delayed the project 1 year and exacerbated the sequencing problem because CIs had to be in place before data content grants (component 2) could be initiated. Likewise significant new data needed to be generated before value added products for decision making tools (component 3) RfPs could be initiated. Bank no objections required to contract consultants, or ratify amendments to these CI Transfer Agreements, frequently took several weeks and even months. No comments were received on the lengthy semester reports submitted every 6 months. Performance indicators were revised 3 times at Bank request, but new indicators had little impact on project supervision.

Different requests by the Bank to repost expenditures between procurement categories for a variety of reasons caused significant problems in the OAS financial management system. These requests also required changes to the Legal Agreement through several amendments that were time consuming. For e.g., in amendment #5, the OAS was forced to repost the Secretariat contracts under the consulting category undoing what we had been instructed to do in

[5] See Procurement issues (para.33) under 2.4 Safeguard and Fiduciary Compliance for clarification.

amendment #1 (post them as operating expenses). At the end of the project, at the request of the Bank, all of the meetings under category 3, had to be reposted to category 5, because meeting/ workshops were not an eligible expenditure under category 3 (non consulting technical services). Significant changeover in Bank staff supporting the project at multiple key points throughout implementation exacerbated these challenges, resulting in difficult learning curves for Bank staff, additional work by OAS and USGS, and delays in project activities.

Current GEF policy that the Implementing Agency receives 10% management/overhead fee while the Executing Agencies receive little or none hampers effective project implementation as all the procurement/disbursement/audit/legal/semester and AOP documentation is prepared by the Executing Agency. As the Implementing Agency puts no counterpart co-financing resources into the project, this creates a dependency on the part of the Implementing Agency that creates perverse incentives that have been well documented, and is hugely expensive. Lessons learned would indicate that the monopoly of Implementing Agency status be changed to allow a more open, transparent process where the most effective agency be chosen that can bring efficient project management to the table without duplication.

Summary of proposed arrangements for future operation of the project

A significant amount of standardized conservation data has been developed and integrated through the support of IABIN GEF Phase I funding. These products are now ready for use with associated IABIN tools to support national and regional decision making processes. A follow-up project is under development entitled: *Using IABIN Data and Tools to Facilitate National and Regional Decision-Making Processes for Conservation and Sustainable Development.* GEF II funding will be focused to make IABIN data and tools increasingly relevant for National and Regional Planning Processes, implementation of international conventions, and continued support for scientific inquiry and conservation applications.

Processes and decisions include:

- Development of biodiversity baselines for each nation along with environmental indicators.
- Identification of critical conservation areas throughout Latin America and the Caribbean. These critical conservation areas will be aggregated from national conservation assessments, using the IABIN data and tools as an important regional context for the representation of biodiversity and conservation values.
- Support the development, implementation and monitoring of National Biodiversity Strategy and Action Plans through easy acquisition of baseline biological and ecological information.
- Integration of strategic ecosystem service values that are critical for sustainable development across the region with the biodiversity and conservation values.
- Identification of significant change agents across the region that could result in landscape integrity for these biodiversity and ecosystem service values.
- Support the implementation of national, regional and project level environmental assessments and monitoring programs.

Governance and Politics include:

- Establish new relationships and agreements with strategic international organizations to guide the development and implementation of this project.
- Establish new relationships with national Ministries to ensure the appropriateness of data, tools and other products required to carry out processes at the national level.
- Implement functional structures and approaches that will be needed to address transboundary conservation and development issues and projects that involve more than one country.

COMPONENT PERFORMANCE INDICATORS

These Component Performance Indicators were adopted by the IABIN Executive Committee –reflecting the need to streamline monitoring

	Objective	Indicator	Responsible	Status
1	Access to information on the biodiversity of the American Continent existing in individual institutions and agencies provided through IABIN	Visits to the Catalog and to each of the web page of IABIN and of each TN increase by at least 25% per year from baseline, after the Catalog and the Thematic Networks are operational	Coordinating Institutions and NGOs that received value added tools for decision making grants.	Completed
2	Decision-support tools in operation in >1 TN and that support that access information from sound decision-making concerning the conservation and sustainable use of biodiversity	At least 100 downloads after the tools have been operational for one year and 25% per year thereafter		Tools funded by component 3 completed and on-line; Products are operational
3	TNs and Catalog websites established and integrated into IABIN Portal.	The data of at least three TNs are integrated. The integration of the websites will take place on Year 4 through the Catalog.		Completed
4	Data and metadata content in the IABIN Catalog and TNs increases	25% increase per year from baseline in data for the Invasive Species TN (I3N)	GS/OAS with CIs	on target
		1. To have data available through their websites by the end of Year 3.		target met
		2. A 25% increase from the number of records at the end of Year 3, per year.		target met
		3. To have disbursed all the funds available for data digitizing grants by the end of Year 4		target et
		4. At least 500,000 records by the end of the project for each TN		Target met
5	Number of people trained per year on data creation tools, data quality and use of tools developed by IABIN TNs	1. To have a data-digitizing tool for each of the TNs by the end of Year 3	CIs	Achieved in year 4
		2. To have a training module and training materials developed for the data digitizing tool of each TN by the end of Year 3		achieved in year 4
		3. At least 180 people trained (in total) per year in Year 4 and Year 5 of the project.		Meeting or exceeding targets
		4. Training module and training materials for each TN downloaded by at least 100 people by the end of Year 4 and a 50% increase in Year 5.		Completed (see individual TN performance indicators)
6	Decision-support tools in operation that access information from >1 TN and that support sound decision-making concerning the conservation and sustainable use of biodiversity	At least 3 new decision-support tools in operation by end Year 4.	GS/OAS with CIs	target met
7	Funding and other resources secured for continued and effective functioning of IABIN	At least two additional sources of funding per year, which will cover the Network expenses.	GS/OAS with CIs	target met through year 6
8	New partnerships facilitated by IABIN involving access to biodiversity info within the Americas	MOUs or MOCs are signed with organizations whose scope is international (NGOs, govt., multilateral, bilateral organizations).	GS/OAS with CIs	Five MOUs in place
9	Project is rated satisfactory or better by the World Bank and by the IABIN Council	Good ratings by WB and IEC	IEC	achieved

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

Annex 9. List of Supporting Documents

World Bank documents:

- Project Appraisal Document
- Global Environment Facility Trust Fund Grant Agreement
- Implementation Status and Results Reports (ISRs)
- Aide Memoires from Supervision Missions
- Mid-Term Review
- Restructuring Paper
- Quality Assurance Group Evaluation, 2009
- World Bank Independent Evaluation Group. *The Development Potential of Regional Programs: An Evaluation of World Bank Support of Multi-country Operations*. World Bank 2007.

Others:

- IABIN Portal, http://www.iabin.net
- Ecosystem Thematic Network Portal, http://ecosystems.iabin.net/
- Species and Specimen Thematic Network Portal, http://species.iabin.net/en/index.html
- Invasive Species Thematic Network Portal, http://i3n.iabin.net/
- Pollinators Thematic Network Portal, http://pollinators.iabin.net/
- Protected Areas Thematic Network, http://iabinpatn.org/#/countries/about
- Data Integration & Analysis Gateway (DIAG), http://www.databasin.org/iabin
- Ecosystem Assessment and Reporting (EAR) Tool, http://gg.usm.edu/EAR/
- "Guidelines for Environmental Information Management in the World Bank/Inter-American Development Bank", by Ángela M. Suárez-Mayorga, Oscar Orrego S. (Alexander Von Humboldt Biological Resources Research Institute), 2008
- Red Geospacial de América Latina y el Caribe (GeoSUR), http://www.geosur.info/geosur/
- The Andes Amazon Protected Areas Database (AAPAD), http://www.oas.org/dsd/AAPAD2/AAPAD2.htm
- "IABIN: Access to Information and Intellectual Property Regulation", the OAS, August, 2006.
- "Initial/Basic Standards and Protocols for IABIN", by Boris Ramirez, IABIN Secretariat, April 2005
- "Support to Building the Inter-American Biodiversity Information Network: IABIN in the Context of Key International Programmes and Initiatives in Biodiversity Information Sharing" Report 1-10, Nippon Koei, May 2004
- "Harmonizing Metadata Initiatives Throughout IABIN" by Vincent Abreu, University of Michigan
- "The IABIN European Inventory Project: Summary of activities July-November 1999", by Roel Slootweg, Geoplan International, November 1999
- "Advanced Training in Technology for Linking Biodiversity Databases: Species Analyst Project", by Townsend Peterson, University of Kansas

MAP

I N S E R T

M A P

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AN ORIGINAL MAP OBTAINED FROM GSD MAP DESIGN UNIT

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