



## Global Environment Facility

1818 H Street, NW  
Washington, DC 20433 USA  
Tel: 202.473-0508  
Fax: 202.522.3240/3245  
Internet: [www.theGEF.org](http://www.theGEF.org)

January 7, 2008

Dear Council Member,

The World Bank as the Implementing Agency for the project entitled: ***Regional: Latin America: Multi-country Capacity Building for Compliance with the Cartagena Protocol on Biosafety***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with the World Bank procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by Council in August 2006 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by the World Bank satisfactorily details how Council's comments and those of the STAP have been addressed.

If by February 5, 2008, I have not received requests from at least four Council Members to have the proposed project reviewed at a Council meeting because in the Member's view the project is not consistent with the Instrument or GEF policies and procedures, I will complete the Secretariat's assessment with a view to endorsing the proposed project document.

We have today posted the proposed project document on the GEF website at [www.TheGEF.org](http://www.TheGEF.org). If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Monique Barbut  
Chief Executive Officer and Chairperson

Attachment: Project Document

cc: Alternates, GEF Agencies, STAP



# REQUEST FOR CEO ENDORSEMENT UNDER THE GEF Trust Fund


**GEFSEC PROJECT ID:** 2689  
**IA/ExA PROJECT ID:** P095169  
**COUNTRY:** Brazil, Colombia, Costa Rica, Peru  
**PROJECT TITLE:** LATIN AMERICA: Multi-Country Capacity Building for Compliance with the Cartagena Protocol on Biosafety  
**GEF IA/ExA:** World Bank  
**OTHER PROJECT EXECUTING AGENCY(IES):** International Center for Tropical Agriculture (CIAT)  
**DURATION:** 3 years  
**GEF FOCAL AREA:** Biodiversity  
**GEF STRATEGIC OBJECTIVES:** BD SP 3 - Capacity-building for the implementation of the Cartagena Protocol on Biosafety  
**GEF OPERATIONAL PROGRAM:** OP13; OP1; OP2; OP3; OP4  
**COUNCIL APPROVAL DATE:** August 2006  
**COUNCIL APPROVED AMOUNT\*:** \$5 million  
**CEO ENDORSEMENT AMOUNT\*:** \$4 million  
**EXPECTED AGENCY APPROVAL DATE:** February 5, 2008  
**EXPECTED SIGNING DATE:** April 2008  
**EXPECTED SUBMISSION DATE OF MID-TERM REPORT:** November 2009  
**EXPECTED GRANT CLOSING DATE:** April 2011  
**EXPECTED SUBMISSION DATE OF TERMINAL EVALUATION/ PROJECT COMPLETION REPORT:** November 2011

FINANCING PLAN (\$)		
	PPG**	Project*
<b>GEF Total</b>	260,000	4,000,000
<b>Co-financing</b>	(provide details in Section d): Co-financing)	
GEF IA/ExA		
Government	90,000	6,735,000
Others	150,000	1,265,000
<b>Co-financing Total</b>	240,000	8,000,000
<b>Total</b>	500,000	12,000,000
Financing for Associated Activities If Any:		

\* For multi-focal area projects, indicate agreed split between focal area allocations  
 \*\* May refer also to previous PDF grants  
 \*\*\*Projects that are jointly implemented by more than one IA or ExA

FOR JOINT PARTNERSHIP****		
GEF PROJECT/COMPONENT (\$)		
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)

Approved on behalf of the World Bank. This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for CEO endorsement.

  
 Steve Gorman  
 GEF Executive Coordinator  
 Date: November 26, 2007

Jocelyne Albert  
 Project Contact Person  
 Tel. and email:(202) 473-3458  
[Jalbert@worldbank.org](mailto:Jalbert@worldbank.org)

1. **FINANCING** (for all the tables, expand or narrow table items as necessary)

**a) PROJECT COST \***

Project Components/Outcomes	Co-financing (\$)	GEF (\$)	Total (\$)
1. Strengthening Technical Capacity in Knowledge Generation for Biosafety Risk Assessment and Management	6,930,000	3,680,000	10,610,000
2. Strengthening Biosafety Decision Making Capacity	1,070,000	320,000	1,390,000
<b>Total Uses of Funds/project costs</b>	<b>8,000,000</b>	<b>4,000,000</b>	<b>12,000,000</b>

\* Project Management costs have been mainstreamed in component 1. The following table provides a disaggregated Project Management cost by categories.

**b) PROJECT MANAGEMENT BUDGET/COST<sup>1</sup>**

Component	Estimated Staff weeks	GEF (\$)	Other Sources (\$)	Project Total (\$)
Locally recruited personnel* +				
Internationally recruited consultants*				
Office facilities, equipment, and communications**		28,900	1,223,507	1,252,407
Travel		83,700	68,100	151,800
Miscellaneous***		55,281		55,281
<b>Total</b>		<b>167,881</b>	<b>1,291,607</b>	<b>1,459,488</b>

\*Local and international consultants in this table are those who are hired for functions related to the management of the project. For those consultants who are hired to do a special task, they would be referred to as consultants providing technical assistance. For these consultants, please provide details of their services in c) below.

+ Both national and project management will be led by technical specialists as part of their overall responsibilities. Since the large majority of their time will be used for technical assistance, the related consultant services cost have been consolidated in the technical components of the project where they will be working. For the functional descriptions of technical specialists see below Table d.

\*\* Office Facilities, equipment, and communications costs are overwhelmingly (90%) borne by the countries themselves. Incremental costs to be financed by GEF include: (a) computers for data analysis for monitoring project impacts and outputs; (c) basic office furniture to accommodate project personnel; and (d) communication equipment, i.e. phone, fax to interlink the four countries.

\*\*\* Miscellaneous costs would normally be included as contingencies in Bank projects, but have been identified as: consumables allowance (paper, ink toner for the computer and other office supplies, the maintenance of equipment; and audit costs to comply with financial management provisions of grant reporting.

**c) CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:**

Component	Estimated Staff Weeks	GEF (\$)	Other Sources (\$)	Project Total (\$)
Personnel	1009	289,095	206,390	495,485
Local consultants*	4,285	1,286,614	1,092,899	2,379,513
International consultants*	294	199,500	230,000	429,500
<b>Total</b>	<b>5,588</b>	<b>1,775,209</b>	<b>1,529,289</b>	<b>3,304,498</b>

**d) CO-FINANCING**

Name of Co-financiers (source)	Classification	Type	At Concept (\$)	At Work Program (\$)	At CEO Endorsement (\$)*
CIAT	Multilateral Agency	in kind	3,000,000	1,415,000	1,265,000
Brazil	National Government	in kind	400,000	4,655,000	3,944,000
Colombia	Others (Not-for-profit public institution)	in kind	400,000	1,245,200	1,151,000
Costa Rica	Others (Not-for-profit public institution)	in kind	400,000	1,500,000	1,500,000
Peru	National Government	in kind	400,000	180,000	140,000
<b>Total Co-financing</b>			<b>4,200,000</b>	<b>8,995,200</b>	<b>8,000,000</b>

<sup>1</sup> For all consultants hired to manage project or provide technical assistance, please attach a description in terms of their staff weeks, roles and functions in the project, and their position titles in the organization, such as project officer, supervisor, assistants or secretaries.

Reflect the final commitment amount of co-financiers and attach documents from co-financiers confirming co-financing commitments. Describe any difference of final commitment compared to those expressions of interest at concept stage or at work program inclusion. \*\*Mexico withdrew from the project (see below).

**CONSULTANTS HIRED WITH GEF FUNDS FOR PROJECT TECHNICAL ASSISTANCE:**

<b>Consultant</b>	<b>Estimated SW</b>	<b>Role/ Functions</b>	<b>Position Title</b>
<b>Regional Coordination</b>			
Project Coordinator	78	Supervision and Technical Assistance of Project Implementation at CIAT, Brazil, Colombia, Costa Rica and Peru	Project Coordinator
Monitoring and Evaluation	168	Monitoring and evaluation for project impacts and lessons	M&E Assistant
Financial Analysis	180	Finance and audit support	Financial Assistant
Technical capacity on biosafety risk assessment	156	Supervision and Technical Assistance of Component 1	Supervisor
Environmental risk assessment	156	Technical Assistance on sub-component environmental risk assessment	EA Assistant
Socio-economic impact assessment	146	Supervision and Technical Assistance on sub-component Socio-economic impact assessment	Supervisor
GIS analysis	146	Technical Assistance and baseline generation on GIS mapping population	GIS Assistant
Effects on non-target organisms	146	Technical Assistance and methodology adaptation on effects on non-target organisms	Biosafety Assistant
Gene flow analysis	146	Technical Assistance and methodology adaptation on effects on gene flow analysis	Gene Flow Assistant
Thematic leaders	96	Regional coordination of thematic areas across countries	Supervisor
Subproject external reviewers	20	Peer review and concept analysis of proposal on thematic areas across countries	Sub-Project Assistant
<b>Brazil</b>			
Technical Support - National Coordination	156	Supervision and Technical Assistance	National Coordination
Environmental risk assessment	75	Baseline data	EA Assistant
Environmental risk assessment	75	Crop management strategies and operation guidelines	Operations Assistant
Effects on non-target organisms	50	Training	Training Assistant
<b>Colombia</b>			
Technical Support - National Coordination	234	Supervision and Technical Assistance	National Coordination
Environmental risk assessment	144	Supervision and Technical Assistance on compilation and generation of baseline data	Supervisor
Environmental risk assessment	144	compilation and generation of baseline data	EA Assistant
GIS analysis	144	Supervision and Technical Assistance on GIS - referenced database	Supervisor
GIS baseline information	48	GIS - compilation and	GIS Assistant

		generation of referenced database	
Biological baseline information	72	Supervision and Technical Assistance on SIB compilation and generation of baseline data	Supervisor
Biological baseline information	72	SIB compilation and generation of baseline data	M&E Assistant
Effects on non-target organisms	144	Supervision, Technical Assistance and methodology adaptation on effects on non-target organisms	Supervisor
Environmental risk management	144	Supervision and training on crop management strategies and operation guidelines	Supervisor
Socio-economic impact assessment	36	Supervision and Technical Assistance on Socio-economic baseline data and analysis	Supervisor
Socio-economic impact assessment	36	Socio-economic baseline data and analysis	Operations assistant
<b>Costa Rica</b>			
Technical Support - National Coordination	288	Supervision and Technical Assistance	National Coordination
Technical Support - Financial Analysis and Evaluation	380	Supervision and Technical Assistance in Financial Analysis	Financial Assistant
Environmental risk assessment	92	Supervision and Technical Assistance on sub-component environmental risk assessment	Supervisor
Environmental risk assessment	92	Technical Assistance on sub-component plan evaluation	EA Assistant
Environmental risk assessment	144	Technical Assistance on sub-component population Genetics	Lab Assistant
Environmental risk assessment	156	Technical Assistance on sub-component Greenhouse and Field Operations	Field Assistant
Gene flow analysis	116	Technical Assistance on molecular biology	Gene Flow Assistant
Gene flow analysis	156	Technical Assistance on gene flow analysis	Field assistant
Environmental risk management	96	Supervision and crop management strategies and operation guidelines	Supervisor
Effects on non-target organisms birds	48	Supervision and Technical Assistance and methodology adaptation on effects on non-target organisms	Supervisor
Effects on non-target organisms birds	48	Technical Assistance and methodology adaptation on effects on non-target organisms	Biosafety Assistant
Effects on non-target organisms insects	104	Supervision and Technical Assistance and methodology adaptation on effects on non-target organisms	Supervisor
Effects on non-target organisms insects	88	Technical Assistance and methodology adaptation on effects on non-target organisms	Biosafety Assistant
GIS analysis	96	Supervision and Technical Assistance and methodology adaptation on GIS analysis	Supervisor

GIS analysis	48	Technical Assistance and methodology adaptation on GIS analysis	GIS Assistant
Socio-economic impact assessment	80	Supervision and Technical Assistance	Supervisor
WEB Page	20	Design and maintenance	Web Assistant
<b>Peru</b>			
Technical Support - National Coordination	218	Supervision and Technical Assistance	National Coordination
Environmental risk assessment	78	Supervision and Technical Assistance on sub-component environmental risk assessment	Supervisor
Environmental risk assessment	78	Technical Assistance on sub-component environmental risk assessment	EA Assistant

## 2. RESPONSE TO REVIEWS

### a) COUNCIL

#### **Comments from Council Member from France**

*“Favourable opinion”*

#### **Comments from Council Member from Germany**

*“(A) In support of some concerns of the STAP Roster Review*

*We support the view of Dr. Ariel Alvarez Morales that proper biosafety systems should enable the governments to deal with future applications for the release of pharmaceutical producing GE plants (which are already tested in Chile) and transgenic animals, notably fish (which already has been developed in Cuba). It is not advisable to follow the approach suggested for example by the biotechnology industry group CropLife that advocates the setting up of biosafety systems only for agricultural plants. Governments must be able to build up biosafety capacity BEFORE the actual applications for deliberate releases of various GMOs are submitted to them. The response of the project applicants that "plants producing pharmaceuticals are outside the scope of the CP" is wrong. Art. 5 of the Cartagena Protocol exempts GMOs that ARE pharmaceuticals from the risk assessment procedure. Considering the international standards of drug approvals, plants producing pharmaceuticals will never be pharmaceuticals themselves. They need to be processed to ensure a constant quality and content of the medical substances. We strongly recommend to expand the capacity building activities of the project to other GMOs that are likely to be released in the next years.”*

#### **World Bank Response:**

The project objective is to strengthen the capacity in the participating countries to implement the Cartagena Protocol (CP) on biosafety. Specifically the project aims to strengthen the technical capacity in knowledge generation for biosafety risk assessment and management; strengthen the biosafety decision-making capacity; and increase public awareness on biosafety, mostly through training for communicators. Plants producing pharmaceuticals are outside the scope of the CP, which are regulated by other International Treaties, thus are not considered under this project. Work on transgenic animals, although recognized as important in the LAC countries, is still under early experimental phases. The legal framework regulating these organisms is not present or is in a preliminary stage in the participating countries. In contrast, all 4 participating countries have legal frameworks for regulating transgenic plants, have some experience in their implementation and because of that, have been able to identify the main bottlenecks to fulfill this task. Due to broader adoption of such transgenic crops, these countries have increased responsibilities to comply with the CP. In addition, the focus on transgenic crops in the four countries is warranted because they are the center of mega biodiversity in agricultural. Although the broad scope of transgenic organisms and the need for proper regulation are recognized, the limited project resources do not allow for work beyond plants; the quality, impact and sustainability of the deliverables outputs would suffer. We appreciate the Council member’s recommendation to expand the scope to include *“other GMOs that are likely to be released in the next years”* and will assess the project activities during implementation when more information becomes available and if the countries request that they are included in the scope of the project.

*“(B) Too narrow scope of potential partner organisations*

*The project proposal states that "widespread public mistrust of GMO crops" is prevalent also in Latin American countries; the project should amongst other goals contribute to increase*

*the confidence of stakeholders representing consumer and environment interest.<sup>2</sup> According to our experiences, this mistrust especially in Latin America is to a large extent a result of the dominance of biotechnology and biosafety experts representing the interests of and/or funded by the biotechnology industry and non-party governments. The suggested further partners almost exclusively fulfil these criteria.<sup>3</sup> If the goal is to increase the confidence of civil society groups and the public in general and this should be achieved through a biosafety capacity building project then a selection of a much broader group of potential partners is highly advisable. For example we strongly recommend the inclusion of the International Project on GMO Environmental Risk Assessment Methodologies<sup>4</sup> as a potential partner. This project funded by the Swiss development cooperation supports a Latin American Regional Group and has conducted extensive biosafety activities in Brazil, especially on Bt cotton.<sup>5</sup>”*

**World Bank Response:**

We appreciate the Council member’s recommendation to expand the scope of project intervention to increase the confidence of multi-stakeholder groups including civil society groups and public in general. We endorse this suggestion, and have strengthened the awareness raising component (Component 3) and have included a robust communication strategy and plan. The expanded component has been renamed as “Communication” with specific activities including application of a communication based assessment to identify main stakeholders, identify their understanding and knowledge about key issues and develop a plan to raise awareness and knowledge. Initial analysis has already been started along with an e-consultation with all major stakeholder groups including environmental NGOs and civil society groups (See Annex 11 of the Project Document). A project web site has also been established. Furthermore, the project has already involved the Bank’s Communication Specialists to help design the Communication Strategy and Plan and will continue to benefit from them as well as experts from other agencies including the International Project on GMO Environmental Risk Assessment Methodologies during project implementation.

Furthermore, inclusion of expertise on GMO Environmental Risk Assessment Methodologies has been a key aspect of the project. Several of the project partners are collaborators in the GMO ERA group (e.g., Brazil Project National Coordinator). Under this collaboration between project partners and GMO ERA, three of the five National Coordinators participated in the workshop on Environmental Risk Assessment Methodologies conducted in Brazil on June 2006 organized by GMO ERA. Project activities have been strengthened to establish collaboration with other groups like International Project on GMO ERA, and to build and expand the work plan agenda and promote linkages with other groups.

*“C) Too narrow focus on scientific issues as basis for decision-making*

*It is generally accepted that risk assessments of GMOs has to be science-based - understood as applying the methodologies of natural sciences. It is also useful if the project contributes to enhance the capacities of the countries to generate science-based information to support the national decision-making procedures. But we cannot agree with the idea promoted by the project proposal that decision-making has to be science-based itself. In the international biosafety discussion the phrase "science-based decision-making" has been coined by those stakeholders who reject the concept of allowing governments to base their decisions on the precautionary principle and on socio-economic and other, political considerations. Both, the application of the precautionary principle and the taking into account of socio-economic*

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<sup>2</sup> pages 6 & 49

<sup>3</sup> pages 14 & 60

<sup>4</sup> The GMO ERA Project is a pioneering initiative driven by public sector scientists, most of whom have strong expertise in environmental science, as well as biotechnology and socioeconomics. The project is identifying and developing scientific methodologies and tools that can be used for environmental risk assessment (ERA) and management of transgenic plants, in accordance with the Cartagena Protocol on Biosafety and other international agreements. <http://www.gmo-guidelines.info/>

<sup>5</sup> Volume 2: Methodologies for Assessing Bt Cotton in Brazil, edited by A. Hilbeck, D.A. Andow and E. M. Fontes

*considerations are supported by the Cartagena Protocol. Consequently, we support the idea of the proposal to enhance the capacity of the countries to perform socio-economic analyses as a basis for decision-making. The proposal tends to imply that socio-economic analyses are in mostly cost-benefit analyses. This is not the case, the Cartagena Protocol consequently does not speak of cost-benefit analyses at all. We would suggest that the project proposal is revised to ensure an appropriate reflection of the content and spirit of the Cartagena Protocol and to present a differentiated view regarding the concepts and relationships between science-based risk assessment on the one side and decision-making taking into account socio-economic considerations and applying the precautionary principle, if necessary, on the other side.”*

**World Bank Response:**

Decision- making based exclusively on science (technical) based information has been broadened to include socio-economic aspects in the Project Document (see para 2 on page 1, para. 27 on page 8), Sub-components 1.2 and 2.2 in the main text and Annex 4).

b) GEF SECRETARIAT

**A) Comments received on May 9, 2006**

*“Letters of commitment from all cofinanciers should be provided.”*

**World Bank Response:**

Letters of commitment from all co-financiers who were not parties to the Negotiation have been received and are part of the CEO Endorsement package. The commitment of the parties to negotiation is included in the signed Minutes of Negotiation.

**B) Comments received on April 4, 2007**

*“Cofinancing figures regarding Colombia and Brazil are mistaken in the Request for CEO endorsement. Please correct.”*

**World Bank Response:**

Cofinancing figures have been corrected.

**C) Comments received on April 4, 2007**

*“Please provide information on what is included under "Office facilities, equipment, vehicles and communications" line in the budget.”*

**World Bank Response:**

Office Facilities, equipment, and communications costs are overwhelmingly (90%) borne by the countries themselves. Incremental costs to be financed by GEF include (a) computers for data analysis for monitoring project impacts and outputs; (c) basic office furniture to accommodate project personnel; and (d) communication equipment, i.e. phone, fax to interlink the four countries. Miscellaneous costs would normally be included as contingencies in Bank projects, but have been identified as: consumables allowance (paper, ink toner for the computer and other office supplies, the maintenance of equipment; and audit costs to comply with financial management provisions of grant reporting.

**D) Comments received on April 4, 2007**

*“Procurement Plan is not included nor details on expenditures; please provide.”*

**World Bank Response:**

The documentation on procurement included is exactly what is submitted for the Bank Board approval. The Bank requirement for a procurement plan has been satisfied and is included in

Annex 8 of the Project Document. Please note, however, that there is no ICB planned for this project. The expenditures by categories for the grant proceeds are included in Annex 7 of the Project Document.

E) Comments received on April 27, 2007

*“Details on expenditures are not provided in annexes 7 and 8; please provide a breakdown of the costs under each of the lines in table A.7.1. Management cost: Please explain why laboratory equipment is included under management cost and justify the amounts for computers and office furniture. Please clarify in the text what in the budget will be covered by the GEF grant and what by co-financing. Audits can not be covered by the GEF grant. Please delete and clarify what is included as “logistical support and project support services.”*”

**World Bank Response:**

In addition to the details presented in Annexes 5, 7 and 8, a detailed Cost Table by component and category is included in this re-submission to CEO Endorsement package. Regarding laboratory equipment, we want to thank you for pointing out the error. It has been reposted to the investment component where it belongs. The logistical support and project support services is somewhat misleading. This category would, in Bank operations, be covered under a “contingencies and audit” category. For this project, we have included the costs associated with audits, disbursement and procurement to comply with financial management provisions of grant reporting, and a small consumables allowance for office supplies.

F) Comments received on May 9, 2007 (through e-mails)

*Please explain Bank’s added value to this project.*

**World Bank Response:**

The World Bank finances over \$1b in investments in the agriculture sector in Latin America. These investments include agricultural technology, rural development, extension services, and agriculture research. The Bank, through the Development Grant Facility, supports the Consultative Group on Agricultural Research centers. Over the past 10 years, the Bank has supported these centers, including CIAT, CIMMYT, CIP—all in Latin America—in their efforts to understand the agronomic, economic and social impacts of a broad range of new agricultural technologies. Specifically with regard to biosafety, the Bank is implementing two of the first generation of biosafety projects under the Cartagena Protocol, including one in Colombia and another in India.

Hence the request from the four governments to the Bank for assistance in implementing the Cartagena Protocol is a logical part of the Bank’s lending program in agriculture, and its support for leading agricultural research departments in the four countries.

G) Comments received on August 17, 2007

*“Q. 1. Component 1: some aspects of the subcomponent on socioeconomic impact assessments seem to go beyond the Protocol and therefore need to be reformulated. Article 26 of the CPB refers to “socio-economic considerations arising from the impact of LMOs on biodiversity, especially with regard to the value of biodiversity to indigenous and local communities”. Therefore, art. 26 limits the scope of socio-economic considerations to those that may arise as a result of the effects of LMOs on biodiversity (e.g. loss or degradation or specific species or ecosystems). The proposal however, especially par. 29 and pars. 25 and 37 of annex 4, seems to refer to socio-economic issues in general, e.g. costs and benefits of LMOs, including benefits such as increased agricultural production, improved nutrition, etc, resulting from LMOs or losses due to poor performance of specific GM products. In addition, if this component is to be implemented within the context of the Protocol, the surveys referred to in pars. 34 and 37 of Annex 4 may need cover case studies where, for*

*example, LMOs have affected biodiversity in such a way that the socio-economic conditions of indigenous and local communities have been affected.”*

**World Bank Response:**

Changes have been made in the Project Document to ensure that the scope of the socio-economic studies remains within the boundaries of Article 26 of the Cartagena Protocol on Biosafety (CPB) to the Convention on Biological Diversity (CBD) allowing the Parties to take into account socio-economic considerations arising from the impact of LMOs on biodiversity and encouraging the parties to cooperate on research and information exchange on any socio-economic impacts of LMOs.

We agree that the surveys may need to cover case studies where LMOs of the selected model crop species have affected biodiversity in such a way that the socio-economic conditions of indigenous and local communities have been affected. The BT-cotton commercially cultivated in Brazil, Costa Rica, and Colombia is possibly one such case.

**H) Comments received on August 17, 2007**

*“Q. 2. Component 1: The text does not provide details on specific activities under component 1(subprojects) as the subprojects will be selected during project inception. In lieu of providing a detailed description of each activity supported under the subprojects, please provide the selection criteria that will be used to identify eligible activities to be supported under the subprojects.”*

**World Bank Response:**

The types of eligible activities are described in the project’s Operational Manual (OM). The subprojects will be selected according to specific evaluation criteria described and agreed to by all project countries in the OM. Criteria include the following.

- Consistency of the sub-project with the GEF Strategy for Financing Biosafety.
- The capacity of the implementing agencies to implement the sub-project
- The demonstrated successful collaboration of implementing agencies with the competent biosafety authorities
- The collaboration between environment and agriculture community in the subproject
- The extent to which the subproject produces information on the effect of LMOs on biodiversity
- The contribution to filling gaps in the knowledge and skill base for regulatory decision making processes
- The extent to which the subproject enhances inter-institutional capacity exchange at the national and multi-country level.

Additionally a “negative list of activities” is included in the OM to ensure full compliance with Bank safeguard policies. Subprojects will be screened by an environmental expert for safeguard compliance.

The relevant parts of the OM are attached as an additional annex to the revised “Request for CEO endorsement”.

**I) Comments received on August 17, 2007**

*“Q. 3. Component 1: There is a typo on pars 32, 33 and 34 that are duplicated in pars 35, 36 and 37.”*

**World Bank Response:**

Thank you for finding these typos. They have been corrected.

J) Comments received on August 17, 2007

*“Q. 4. Component 3: Please make specific reference to art. 23 of the CPB, to promote public awareness concerning the safe transfer, handling and use of living modified organisms. The activities and expected outcomes, including the communication strategy should include promotion of public awareness of Biosafety in general, in addition to communicating the project specific products and identifying public perceptions towards the project and the project related issues.”*

**World Bank Response:**

The objectives of this component are to strengthen public awareness on Biosafety and to effectively communicate project objectives and outcomes to the general public (Project Document, paragraph 33). Within the framework of the project and in accordance with Article 23 of the CPB, a communication based assessment and a communications strategy will be established to achieve public awareness objectives based on the evidence that will be produced by the project activities. We repeat for your information the expected outcomes of component 3 as stated in para 36 of the main text of the Project Document:

- (a) Clear identification of the main stakeholders, their perceptions, attitudes and behaviors toward the project and its objective, and, if needed, toward the main implementation agencies involved in the process;
- (b) Strengthened dialogue with stakeholders through effective mechanisms to obtain feedback;
- (c) Policy makers communicating coherently on the project related issues and increased awareness of the use of biosafety risk assessment methodologies;
- (d) Increased awareness of the use of biosafety socio-economic impact assessments; and
- (e) Clear understanding of the project objectives by the general public in order to obtain their support.

K) Comments received on August 17, 2007

*“Q. 5. Financing Plan.*

*A table showing project costs by component and category has been sent. Nevertheless there seem to be inconsistencies that need clarification, i.e. total sum of consultant services is 1, 434,500 in the table but 2, 160,209 in the Request for CEO endorsement.*

*Regarding the “incremental operating cost” (\$475,600) it is not clear what is the difference between this cost and the management cost and why this amount is recorded as part of component 1 in the doc but as a cost shared by all components in the table. It results in an apparent inconsistency of cost of component 1 in the table and in the Request (\$3,696,000 in the Request for CEO Endorsement doc, but 3,219,900 in the table).*

*In addition the management cost as such is not identified in the table.”*

**World Bank Response:**

The categories in the table have been sub-divided to clarify the consultant services costs. With these sub-categories, the consultant services costs between the table and the CEO Endorsement template are consistent. The CEO Endorsement template has also been updated.

The project does not have a separate Project Implementation Unit (PIU). Technical staff from the project executing agency will assume the management role of the project as part of their overall responsibilities. Since the large majority of their time will be used for technical assistance, the related consultant services cost have been consolidated in the technical components of the project where they will be working. The “incremental operating cost” category has been renamed to “management costs” and is now presented under component 1,

as in the Project Document. The component costs in the revised table are consistent with the CEO Endorsement template.

During discussion with GEFSEC a further question was raised on travel costs in the project and the GEF contribution towards it. Management travel costs are estimated at USD 151,800 of which GEF would contribute USD 83,700 and the co-financing would be USD 68,100. Total travel cost in the subprojects is estimated to be around USD 774,000, of which GEF would contribute USD 65,000 and the co-financing will cover USD 709,000.

L) Comments received on August 17, 2007

*“Q. 6. Financing Plan.*

*A second table with indicative costs of the grant allocated to sub-projects has been provided. It includes operating costs; please explain what is included under that line and why that is not covered by the management costs.”*

**World Bank Response:**

The operating costs under the sub-projects include reasonable expenditures to implement sub-project activities such as utilities, communications (including Internet connectivity) and supplies. These costs will be minimal and defined at the time of sub-project approval during project implementation.

M) Comments received on October 5

From the Review Sheet: “A revised document that adequately addresses all remaining issues has been received. PM recommends CEO endorsement.”

N). Comments received on November 8, 2007

From the Review Sheet: “The CEO will not endorse the project at this time. After Work Program inclusion one of the principal participating countries withdrew from the project. This is considered a significant deviation from the original proposal. Therefore, the budget has to be reduced accordingly. Upon receipt of a revised proposal with an adjusted budget adapted to the remaining participating countries, the proposal will be resubmitted to the CEO for endorsement”.

**World Bank Response**

A meeting to clarify the project was held between the GEF CEO and the World Bank. Based on the guidance received in this meeting, the communications component and part of the capacity building work were removed from the project proposal and transferred to a regionally focused MSP project. The remaining proposal has a requested GEF contribution of USD 4m.

C) REVIEW BY EXPERT FROM STAP ROSTER (IF REQUIRED)

**World Bank Response:**

Issues raised by STAP were adequately responded at the time of Work Program submission.

### **3. JUSTIFICATION FOR MAJOR CHANGES IN THE PROJECT, IF ANY<sup>6</sup>**

The project has been revised to address the comments from the GEF Council and the GEF CEO. The main change has been to focus on the communications through a related Medium Size Project. The MSP will finance activities to raise awareness and knowledge as requested by the GEF Council member. In particular, the MSP was designed to increase the confidence of stakeholders representing consumer and environment interests. Given the sensitivities and general lack of knowledge about transgenics, we agree with some of the Council members that these activities aimed at communicating directly with stakeholders and the general public will also go a long way to achieving the Cartagena Protocol's objectives and in reducing potential reputational risks to the GEF. Ultimately the aim of this component is to increase awareness of the issues surrounding transgenics and to give decision-makers the analytical tools and information needed to make their decisions. In addition to the MSP, the budgets for two components of the FSP were adjusted slightly during appraisal in light of Council comments.

After the Council had approved the project for Work Program inclusion, the Mexican participants notified us of their decision to withdraw from the project. Among the reasons they gave were that the scope of the project does not cover human health issues – priority issues for Mexico – and the lack of capacity to deal with the extra workload that the project required. Since this is a regional project, with the majority of activities undertaken under a regional umbrella, most project activities remained the same.

### **4. REQUIRED ATTACHMENTS**

- a) Project Appraisal Document
- b) Report on the Use of Project Preparation Grant
- c) Confirmed letters of commitments from co-financiers (with English translations)
- d) Agency Notification Template on Major Project Amendment and provide details of the amendment, if applicable.

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<sup>6</sup> Provide justifications for any major amendments in the project, including an increase of project amount exceeding 5% from the amount approved by the Council. Justification for such amendments and the project document will be circulated to the Council for a four-week review period. For procedures to the approval for major amendments, refer to the Council paper: [Project Cycle Update: Clarification of Policies and Procedures for Project Amendment and Drops/Cancellations. GEF/C.24/Inf.5](#)

Document of  
The World Bank

Report No: 37716

PROJECT DOCUMENT

ON A

PROPOSED GRANT FROM THE  
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF US\$4.0 MILLION

TO THE

INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE

FOR A

LATIN AMERICA: MULTI-COUNTRY CAPACITY-BUILDING FOR COMPLIANCE WITH  
THE CARTAGENA PROTOCOL ON BIOSAFETY  
(BRAZIL, COLOMBIA, COSTA RICA, PERU)

November 20, 2007

Sustainable Development Network  
Latin America and the Caribbean Region

## CURRENCY EQUIVALENTS

Currency Unit = US\$

## FISCAL YEAR

January 1 – December 31

## ABBREVIATIONS AND ACRONYMS

ARI	Advanced Research Institutions
BCH	Biosafety Clearing House
CAFTA	Central American Free Trade Agreement
CARICOM	Caribbean Community and Common Market
CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CENARGEN	Genetic Resources and Biotechnology Research Center (of EMBRAPA)
CGIAR	Consultative Group for International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIBCM	Center for Cellular and Molecular Biology Research
CIDA	Canadian International Development Agency
CIDES-UCR	Centro de Investigación en Desarrollo Sostenible-University of Costa Rica
CIP	International Potato Center
CONAM	National Environment Council (Peru)
CP	Cartagena Protocol
CPAA	Genetic Resources and Biotechnology Research Center (of EMBRAPA)
CTAA	Food and Technology Research Center (EMBRAPA)
CTNB-CR	National Technical Commission of Biosafety – Costa Rica
DFID	United Kingdom Department for International Development
EMBRAPA	Brazilian Agricultural Research Corporation
EU	European Union
FTAA	Free Trade Area of the Americas
GEF	Global Environment Facility
GIS	Geographic Information System
GMO	Genetically-modified Organism
GTZ	German Technical Cooperation Company
IABIN	Inter-American Biodiversity Information Network
IARC	International Agricultural Research Centers
IAvH	Instituto Alexander von Humboldt (Colombia)
IBRD	International Bank for Reconstruction and Development
ICA	Colombian Institute of Agriculture
IDB	Inter-American Development Bank
IFR	Interim Financial Reports
IICE-UCR	Instituto de Investigación en Ciencias Económica – University of Costa Rica
INBio	National Institute for Biodiversity (Costa Rica)
INIEA	Instituto Nacional de Investigación y Extensión Agraria (Perú)
IPR	Intellectual Property Rights
LAC	Latin America and the Caribbean

LMO	Living Modified Organism
M&E	Monitoring and Evaluation
NAFTA	North America Free Trade Agreement
NC	National Coordinator
OECD	Organization for Economic Cooperation and Development
OM	Operational Manual
PCU	Project Coordination Unit
PDF-B	Project Development Facility-Block B
PMC	Project Management Committee
PROINNOVA -UCR	Innovation Office of University of Costa Rica
RR	Roundup Ready™
RTC	Regional Thematic Coordinator
SC	Steering Committee
STAP	Scientific and Technical Advisory Panel
USAID	United States Agency for International Development
WB	World Bank

Vice President:	Pamela Cox
Sector Director:	Laura Tuck
Sector Manager:	Ethel Sennhauser
Task Team Leader:	Willem Janssen

**Latin America: Multi-country Capacity-building for Compliance with the  
Cartagena Protocol on Biosafety  
(Brazil, Colombia, Costa Rica, Peru)**

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## **A. STRATEGIC CONTEXT AND RATIONALE**

### **Summary:**

1. This document describes a proposed biosafety capacity-building operation in four Latin American countries, grant-funded by a full-sized Global Environment Facility (GEF) contribution of US\$4.0 to the Colombia-based International Center for Tropical Agriculture (CIAT). The project's estimated total budget is US\$12.0 million, including a US\$4.0 million GEF grant and US\$8.0 million of in-kind contributions. The global environmental objective of the project is to strengthen capacity in four participating countries - Brazil, Colombia, Costa Rica, and Peru - to implement the Cartagena Protocol (CP) on Biosafety. To allow this to occur, the project would strengthen the institutional capacity of agriculture and environmental ministries, as well as specific biosafety-related agencies in the participating countries, to implement their national biosafety regulations in compliance with the CP and the Precautionary Approach, as stated in the Protocol itself. The proposed project is one of two projects, the second project being a GEF Medium Sized Project (MSP) on Regional Capacity-Building on Public Awareness and Communication Activities for Compliance with the Cartagena Protocol on Biosafety, which are being developed to address the biosafety knowledge and capacity gap. Both of these projects will be executed by the Colombia-based International Center for Tropical Agriculture (CIAT) in collaboration with participating countries and communication experts in the region.

2. The project does not promote the use of Genetically Modified Organisms (GMOs). This project will not finance planting of transgenic crops nor will be requesting/processing licenses for planting them. Neither will the project have any third party agreements related to the potential use of project data vis-à-vis the use of GMOs<sup>1</sup>. The proposed project is technical in nature, multi-country in scope, and would generate knowledge-based mechanisms and methodologies for environmental biosafety risk assessment and management, and socio-economic impact assessment (as per Article 15 Risk assessment, and Article 16 Risk management of the Cartagena Protocol). The project approach takes into account the needs of developing countries in the centers of crop biodiversity. It departs from other ongoing GEF-funded World Bank-implemented biosafety projects in Colombia and India<sup>2</sup> that are mainly targeting the establishment of suitable legal frameworks and the biosafety clearing house mechanisms (BCH). It will not address legal, policy, and political dimensions of implementation of the Protocol.

3. The project will work in an integrated way through a consortium of partner countries and their corresponding National Coordinating (NCs) Agencies, building institutional alliances with their respective national entities in order to leverage complementary skills. Each NC would engage other participating entities to ensure high level of knowledge and inter-disciplinary competencies in GMO technology, as needed in the project countries. The consortium approach mentioned above provides an opportunity to increase biosafety knowledge and exchange information and experiences among countries that are at different levels of engagement with biodiversity and biosafety issues. The project would generate mechanisms and methodologies for environmental risk assessment/management and socio-economic impact analysis. Such project-generated new knowledge will then be made available in an organized, accessible form to competent authorities, biosafety practitioners, organized civil society and the general public, principally through the MSP in compliance with Article 22 of the Cartagena Protocol. Additionally, such methodologies would be adapted to tropical/subtropical environments that are rich in biodiversity, and where farmers play a key social role in conserving biodiversity and generating ecosystem services.

### **1. Country and Sector Issues**

4. Latin America has been adopting GMOs at a faster rate than any other region of the world. This rapid adoption rate is the commercial outcome of the manifest delivery to the region's

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<sup>1</sup> In the present proposal, the three terms are used as equivalent. All other terminology used corresponds to the definitions provided and used by the Cartagena Protocol.

<sup>2</sup> Capacity-building for the Implementation of the Cartagena Protocol on Biosafety in Colombia (P077171); and GEF Biosafety Project – India (P079865).

agricultural economy of benefits linked to the initial products of biotechnology. Just under half of all countries currently growing commercial, transgenic crops are in this region; in 2005, Latin America grew 32% (28.8 million hectares) of the total global area of transgenic crops, second only to the United States (48 million ha). Concern is mounting about the accelerating adoption of GMOs in Latin America without sufficient and scientifically-sound biosafety assessment, management, or decision-making instruments. The region is falling behind in its capacity to implement biosafety regulations in compliance with international standards and treaties.

5. Biodiversity Significance: Tropical Latin America and the Caribbean (LAC) Region are among the world's richest areas of biodiversity, as recognized by the Convention on Biological Diversity (CBD). This region harbors the center of origin of landrace/weedy/and wild relatives<sup>3</sup> of many important crops--around one-third of all crop plants grown world-wide were domesticated from the biodiversity of this region. Mesoamerica, the Andean region and the Amazon were the centers of origin or diversification of maize, beans, potato, sweet potato, tomato, cassava, groundnut, pineapple, cotton, cacao and chili pepper, among others. All four countries selected for project participation – Brazil, Colombia, Costa Rica, and Peru – contain centers of mega-biodiversity, as defined by the CBD.

6. Potential, negative impact on biodiversity of the accelerating, unregulated use of GMOs could have major medium- and long-term implications for the regional and global environment, for human/animal health, and for international trade and competitiveness. Health and environmental concerns are reflected in widespread public mistrust of GMO crops, but also other pragmatic realities are driving this situation: The global economy has prompted the formation of trading blocs, currently including Mercosur, Andean Pact, CARICOM, CAFTA and NAFTA with FTAA<sup>4</sup> under negotiation. While these blocs shape regional commerce, they thereby also determine the fate of biotechnology-derived products per se, as well as the export aspirations/opportunities and expansion of countries still lacking capacity to comply fully with the CP.

7. Despite their biodiversity, importance in the global biosafety arena and expanding commercial cultivation of transgenic crops, LAC countries have received little attention. This is in contrast to Asia and Africa, which have received major funding from the developed world in recent years to establish functional biosafety systems (e.g., USAID is currently supporting two mega-projects on biosafety for these regions valued at about US\$30 million each). Establishing biosafety capacity is complex, not only due to the unique and difficult problems facing mega-diverse countries in addressing environmental risk, but also because of the range of technical topics and research areas involved, encompassing the biological, socio-economic, health, legal and political. This situation, together with the latest developments in international agreements on biosafety designed both to protect biodiversity, the environment and animal/human health and to regulate trans-boundary movement and use of these crops, creates an urgent and relatively high-risk situation which needs to be addressed at the national and regional levels.

8. Agriculture in Latin America faces major challenges to increase crop productivity using efficient systems that reduce inputs, are environmentally friendly, provide social equity and increase revenues to small farmers, thereby reducing hunger and poverty. Alternative agricultural systems and consumer preferences worldwide are shaping domestic and international food trade with direct economic effects on the most deprived sectors of society in this region. This complex, evolving situation calls for knowledge-based systems which permit the coexistence of diverse agricultural systems - subsistence agriculture, productive systems supported by conventional breeding and/or biotechnology, organic farming for specialty high-price markets and others - consistent with social diversity, while ensuring economic growth and environmental protection. It is incumbent on the

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<sup>3</sup> Landrace plants are older, often farmer-developed strains of a species, ideally-suited to the environment where they live, and bred through traditional methods of natural selection without the influence of modern breeding practices.

<sup>4</sup> CARICOM (Caribbean Community and Common Market); CAFTA (Central American Free Trade Agreement); NAFTA (North American Free Trade Agreement); FTAA (Free Trade Area of the Americas).

public sector in Latin America to establish systems for unbiased, technical analysis upon which to base decision-making about the acquisition of new agro-technologies. It must also provide an objective, open, consultative climate for decision-making which heeds societal concerns and needs in developing countries which are centers of crop biodiversity.

9. **Participating Countries:** The four countries participating in this project have demonstrated sustained, substantive commitment to the project since its initiation, pooling funds for co-financing at the PDF-B stage and providing Letters of Endorsement from the GEF Focal Points. Criteria for country selection included: (a) high levels of biodiversity of important crops and their wild relatives; (b) geographic distribution of wild/weedy relatives of economically important crops; (c) levels of development and implementation of biosafety policy including active GEF-funded projects and World Bank projects in agriculture and rural development; (d) complementary strengths and expertise related to implementing the Cartagena Protocol; and (e) potential, strategic, future role they might play in biosafety management in their respective sub-regions. All four countries had already developed and implemented biosafety legal frameworks prior to the Cartagena Protocol and all have ratified the CBD (Annex 1, Table 1) and the Cartagena Protocol (Annex 1, Table 2).

10. **Cartagena Protocol:** The Cartagena Protocol (CP) was adopted in 2000 as a supplementary agreement to the Convention on Biological Diversity (CBD) of 1992, and entered into force on September 11, 2003 after ratification by 56 countries. In the case of LAC countries, 80% of the Andean, 50% of Central American countries (Annex Table 1a), including Brazil, Colombia, Costa Rica and Peru have also ratified the protocol. The protocol seeks the safe transfer, handling and use of living modified organisms—LMOs, also commonly known as transgenic crops or GMOs—to prevent adverse effects on the conservation and sustainable use of biological diversity, also taking into account the risks to human health and focusing on the trans-boundary movement of these crops.

11. Although the CP sets a framework for the biosafety aspects of all living organisms resulting from modern biotechnology, the most important field of application in the near-term is the biosafety of agricultural crops modified by modern biotechnology. Quality implementation of the Protocol has a direct impact on the agricultural innovation and technology transfer policies of developing/evolving agricultural economies, affecting the partner countries in this proposal as well as the global economy and environment. Capacity building in the technical aspects of risk assessment remains a major area of concern of the CP<sup>5</sup>. Human resource development, database development, baseline information about crops (especially in mega-diversity areas) and expertise in methodologies for risk assessment are cited explicitly by the CP as priority areas for development.

12. **Project Strategy:** Acknowledging CP compliance requirements and biosafety technical weaknesses identified by target country representatives during PDF-B execution, and given the paramount importance of prompt action, the project will address key capacity issues in biosafety risk assessment and management, and socio-economic impact assessment, within a period of three years. The institutional vehicle will be a strategic collaboration among the four selected LAC countries, all of which will be represented by competent entities with complementary expertise, knowledge and experience serving as Centers of Excellence. These entities can be considered models of best practice with the potential to influence biosafety behavior in other parts of Latin America. Partner countries agree that a multi-country approach is likely to be more cost effective, achieve more rapid impact, and be more sustainable than alternative methods, since it would both utilize and enhance existing country capacity. The project paradigm is thus built on centers of biodiversity in the Andean, Mesoamerican and Tropical American regions and on maximizing economies of scale by exploiting the comparative advantages of participating countries and entities as either Net Donors/Providers (NP) or Net Recipients (NR) of capacity within the project's multi-country structure.

13. The Colombia-based International Center for Tropical Agriculture (CIAT) is both project grant partner and implementing agency. CIAT has both the international and regional reputation and

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<sup>5</sup> Report of the Ad Hoc Technical Expert Group on Risk Assessment, December 2005, Rome, Italy

well-established technical and convening capacity for the proposed multi-country project. The Center will collaborate with an array of prominent entities in each country on biosafety analysis and decision making process in that country—these prominent entities are called Centers of Excellence (see Table 6.1). In order to facilitate the organization and collaboration, each country will designate a national agency as National Coordinator (NC), which will serve as the liaison in each country with the Project Regional Coordination and are responsible for the Country Project Implementation. The national agencies designated as the National Coordinators and endorsed by the GEF Focal Points in their respective countries include: the Environment Research Center of EMBRAPA (Brazilian Agricultural Research Corporation, Ministry of Agriculture, Brazil); The Institute of von Humboldt (affiliated to the Ministry of Environment, Colombia); The University of Costa Rica (Costa Rica); and The National Environment Council (CONAM, Peru). Linkages already have been defined and agreed in principle with other prominent research entities in each country. Additional partnerships to leverage both expertise and funding are under discussion or contemplated with other prominent entities/groups referred to as participating entities or national collaborating institutions (see Section C). See also Annex 6 for implementation arrangements.

14. Working in an integrated manner through the participating countries and their respective National Coordinators, the project would create a competent pool of regional biosafety technical personnel and practitioners while establishing standardized, quality biosafety databases and methodologies for biosafety management and socio-economic impact assessment. This will be accomplished by using as models five selected crops – maize, potato, cassava, cotton and rice<sup>6</sup>. Databases, methodologies and systems/programs generated by the project would be based on the adaptation of existing knowledge and would generate data from research with the model crops according to needs. The knowledge generated from project actions would be communicated through a second proposed GEF MSP via training and outreach to competent authorities and practitioners, opinion-makers, the private sector, and civil society, including producer organizations, environmental interests, and the general public.

## **2. Rationale for Bank Involvement**

15. The World Bank’s rural development strategy – Reaching the Rural Poor: A Renewed Strategy for Rural Development – highlights enhancing agricultural productivity and competitiveness as one of the key pillars for rural poverty alleviation. The WDR 2008 “Agriculture for Development” states that “An important opportunity to contribute to the pro-poor agricultural development agenda will be missed if the potential risks and benefits of transgenics cannot be objectively evaluated on the basis of the best available scientific evidence and taking into account public risk perceptions” and that “countries and societies ultimately must assess the benefits and risks for themselves and make their own decisions”. In this regard, the Bank is committed to helping developing countries assess, explore, and safely use biotechnology and other new technologies when the appropriate regulatory frameworks are in place. Towards that end, the Bank has been supporting agricultural research capacity in some 30 projects since 1995. These experiences have provided the Bank unique sets of skills in supporting developing countries in the safe use of agriculture technologies.

16. Furthermore, in the comparatively new field of biosafety, the Bank has already accumulated significant initial experience as an implementation agency for GEF on capacity-building pilot projects related to the “National Biosafety Framework” (NBF) in Colombia and India. The lessons from these ongoing operations and specifically the synergies resulting therein on biosafety were fully integrated during the preparation of this project. In addition, the World Bank is currently assisting with preparation of a GEF regional biosafety operation in West Africa<sup>7</sup>. The Bank has also had extensive involvement spanning several decades with the Consultative Group on International Agricultural

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<sup>6</sup> Selected on the basis of: (a) regional economic importance and socio-economic needs; (b) centers of diversity of sexually compatible wild relatives for all of them are in this region; (c) relative commercial weight of crops developed by the public and private sectors, respectively; (d) need for collaboration on knowledge generation and gaps in smart breeding for output traits (mostly private sector) versus input traits (public sector); and (e) potential implications for local/regional biodiversity.

<sup>7</sup> Proposed GEF West Africa Regional Biosafety Project (Benin, Burkina Faso, Mali, Senegal and Togo).

Research (CGIAR) that has the global mandate for crop improvement in several crops of interest to the four project countries. CIAT (project implementing agency) and CIP (a participating entity) are affiliates of the CGIAR group of international institutes. The Bank also has an important role as facilitator and neutral party in the biosafety arena as well as in the biodiversity theme.

17. Biosafety is now embedded in the policies and strategies of many countries where the Bank has significant investment portfolios in agriculture, environment and related sectors; consequentially, biosafety issues are assuming increasing prominence in those portfolios. More generally, the Bank's broad experience in providing knowledge support on policy issues (agricultural policy, trade policy, intellectual property rights issues and international convention compliance) validates its role as a partner in upgrading national biosafety capacity in the four countries. Likewise the Bank staff also brings important expertise and international experience in the project theme and has a demonstrated strong leadership in the design and preparation of innovative projects in environment and rural development sectors.

18. Many countries in Latin America have the advantage of already having established biosafety regulatory frameworks but there is a clear need to strengthen safeguards. The participating countries themselves acknowledge that their biosafety legal frameworks for the regulation, management and deployment of LMOs, while crucial, are not enough. The countries defined these obstacles during project formulation as not only weak technical capacity in biosafety risk assessment, risk management, and biosafety socio-economic impact analysis, but also inadequate availability and dissemination of accessible information to support planning and policy-making on biosafety and to address widespread public concern about transgenic crops.

### **3. Higher level objectives to which the project contributes**

19. The project supports the sector development strategies and agendas of the four participating countries (Annex 1). Furthermore, Country Assistance Strategies (CAS) for the four partners show marked similarity across development pillars and sector goals as well as both direct and indirect consonance with the proposed project (see Annex 1):<sup>8</sup>

- *Brazil*: As cited by the CAS (2003), the economic and social context of Brazil creates a mandate for growth based on equity and sustainability, supported by improved productivity, stronger institutional capacity, and a focus on key environmental focal points including sustainable use and conservation of the rainforest biome. Technological innovation supporting the welfare of all Brazilians, but especially the poorest, is sought. An explicit goal of government's agricultural strategy is to provide incentives for the development and adoption of technological solutions for production and export expansion.
- *Colombia*: The CAS (2002) cites the peace agenda as the mandate for forging ahead with Government's reform program including the environmental and social sectors, with focused support for rural development and natural resources management. Government's agricultural strategy rests on preparing the sector to take on the challenges of regional/global trade agreements, strengthening the science, technology and innovation components of agricultural production, and responding to global demand while guaranteeing the conservation and protection of biodiversity and ecosystems.
- *Costa Rica*: CAS (2004) pillars support government's emphasis on strengthening trade and competitiveness, the economic diversification agenda and continuing the country's pioneering leadership in environmental management. Government remains firmly committed to preserving biodiversity through progressive environmental policies.

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<sup>8</sup> **Brazil**: latest CAS 27043, November 10, 2003; **Colombia**: latest CAS 25129, December 24, 2002 and CAS Progress Report 32999, September 9, 2005; **Peru**: latest CAS 24205, August 19, 2002 and CAS Progress Report 30292, November 9, 2004; and **Costa Rica**: latest CAS 28570, April 20, 2004.

- *Peru:* The Peru CAS (2002) supports government's programs and institutional reforms for renewing growth and reducing poverty, while strengthening emphasis on partnerships with IDB and the Andean Development Corporation to advance its strategic pillars: increased competitiveness, greater social equity and public sector reform. Government's agricultural strategy calls for incentives, modern agricultural technologies and shifting to higher-value, intensive agriculture. Peruvian biodiversity law requires that biosafety be factored into all related policies, planning and sector programs.

20. The project is also consistent with the Bank's regional rural sector strategy<sup>9</sup>. The LAC Region has been characterized by market-liberalizing reform and sector-led models of development, reducing barriers to competition in domestic markets and accelerating the process of trade integration with the global economy. Agriculture is one of the sectors where integrating environment and economic policies is most obvious. The strategy recommends intensifying smallholder agriculture and increasing productivity, ensuring sustainable management of the resource base on which smallholders depend and providing better risk management tools. The strategy notes explicitly that the GEF should continue to play an instrumental role in facilitating better mainstreaming between conservation and development; promote donor coordination; develop channels for communication and consultation with other potential partners; and seek partnerships to learn, transfer experiences, and develop common ground among partners on approaches.

### **GEF Operational Program Goal**

21. The proposed project fits within the GEF focal area on Biodiversity and the GEF Operational Program (OP) 13 on Conservation and Sustainable use of Biological Diversity Important to Agriculture. The project would improve country institutional capacity to implement knowledge-based mechanisms and methodologies for environmental biosafety risk assessment and management, and socio-economic impact assessment of key crops in their region of origin, thereby improving the quality and health of the global environment without affecting existing genetic resources. Further, due to the cross-cutting nature of the biosafety issue, the project also fits under OP1 Arid and Semi-arid Zones, OP2 Coastal, Marine and Freshwater Ecosystems, OP3 Forest Ecosystems, and OP4 Mountain Ecosystems.

22. The project is also consistent with the GEF Biodiversity Strategic Priority no. 6 on Capacity-Building for Implementation of the Cartagena Protocol on Biosafety in supporting the development and/or strengthening of the national biosafety clearing house (BCH), biosafety knowledge generation and validation, training and capacity building, and promoting public awareness and a stronger biosafety policy environment. CP Article 22 asks that parties cooperate in capacity building with an emphasis on scientific and technical training in the proper, safe management of biotechnology, in the use of risk assessment and risk management for biosafety, and the enhancement of technological and institutional capacities in biosafety. Indeed, the basis for financial assistance to countries through the GEF is to build capacity to implement the CP.<sup>10</sup>

## **B. PROJECT DESCRIPTION**

### **1. Lending Instrument**

23. The proposed total project budget is estimated at US\$12.0million. A GEF grant of US\$4.0 million is proposed, with counterpart financing from the four countries and CIAT (in-kind counterpart funds) of approximately US\$8.0 million.

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<sup>9</sup> Reaching the Rural Poor in Latin America and the Caribbean Region, World Bank report no. 24530, July 31, 2002.

<sup>10</sup> The project will also support, towards the end of its implementation, Strategic Priority 4, Generation and Dissemination of Best Practices for addressing current and emerging biodiversity issues, having identified and adapted innovative approaches and tools for risk assessment, databases for knowledge-sharing on biosafety, and produced science-based materials for training and communication purposes.

## 2. Project Global Environmental Objective and Key Indicators

24. The Global Environmental Objective (GEO) of the project is to strengthen the capacity in the four participating countries to implement the Cartagena Protocol (CP) on biosafety. Specifically it aims to strengthen the technical capacity in knowledge generation for biosafety risk assessment and management; and strengthen the biosafety decision-making capacity. The proposed project is one of two projects (the second project being a GEF medium sized (MSP) Regional Capacity-Building for Compliance with the Cartagena Protocol on Biosafety project) which are being developed to address the biosafety knowledge and capacity gap.

25. Key outcome indicators are:

- By EOP, at least 80% of participating entities in the project countries have been using the available biosafety risk assessment and risk management strategies and methodologies developed by the project.
- By EOP, inter-institutional and inter-country cooperation on biosafety risk assessment among the project countries have improved through diverse mechanisms.
- By EOP, biosafety competent authorities in project countries are using the biosafety risk assessment tools and/or information as reference in planning and in making biosafety decisions.

## 3. Project Components

26. The project has two components: (a) Strengthening technical capacity in knowledge generation for biosafety risk assessment and management; and (b) Strengthening biosafety decision-making capacity (Annex 4). The costs of each component and subcomponent are summarized in Table 1 and described in detail thereafter.

**Table 1: Project Cost by Component and Source (US\$' million)**

	Components by Financiers (in US\$ '000)	GEF Financing	%	Other Cofinancing	%	Total	%
<b>1</b>	<b>Strengthening Technical Capacity in Knowledge Generation for Biosafety Risk Assessment and Management</b>	<b>3.68</b>	<b>33</b>	<b>6.93</b>	<b>65</b>	<b>10.61</b>	<b>88</b>
	1.A Strengthening of Technical Capacity for Environmental Risk Assessment and Management	3.21	33	6.38	66	9.59	80
	1.B Strengthening of Technical Capacity for Socioeconomic Impact Assessment	0.47	47	0.55	53	1.02	8
<b>2</b>	<b>Strengthening Biosafety Decision Making Capacity</b>	<b>0.32</b>	<b>23</b>	<b>1.07</b>	<b>77</b>	<b>1.39</b>	<b>12</b>
	<b>Total PROJECT COSTS</b>	<b>4,000.0</b>	<b>33</b>	<b>8.00</b>	<b>67</b>	<b>12.0</b>	<b>100</b>

### *Component 1: Strengthening technical capacity in knowledge generation for biosafety risk assessment and management (Total: US\$10.61 million of which US\$3.68 million is from GEF)*

27. The objective of this component is to strengthen regional technical capacity using selected, target crops (cassava, cotton, maize, potato and rice) as models for establishing the know-how on developing environmental risk assessment/management methodologies, and socio-economic impact analysis adapted to tropical conditions rich in biodiversity and where farmers play a social role conserving/generating diversity of some of these crops. This objective will be achieved by financing small, demand-driven subprojects proposed and implemented by Participating Entities. A subproject is a set of activities with the objective of providing scientific information in the context of the project. A subproject may consist of field work, lab work, surveys, compilation, and analysis and testing of data and training. The types of eligible activities will be consistent with the GEF Strategy for Financing Biosafety and are described in detail in the project's Operational Manual (OM). Subproject selection will be principally based on the following evaluation criteria:

- The capacity of the implementing agencies to implement the sub-project
- The demonstrated successful collaboration of implementing agencies with the competent biosafety authorities
- The collaboration between environment and agriculture community in the subproject
- The extent to which the subproject produces information on the effect of LMOs on biodiversity
- The contribution to filling gaps in the knowledge and skill base for regulatory decision making processes
- The extent to which the subproject enhances inter-institutional capacity exchange at the national and multi-country level

28. A subproject agreement will be signed between CIAT and the Participating Entities, spelling out the terms and conditions for the funding, execution, ownership, and operation of the approved subprojects. The following subcomponents will be financed:

*1.1 Strengthening technical capacity for environmental risk assessment and management*

*1.2 Strengthening technical capacity for socio-economic impact assessment*

29. Expected outputs include: (a) documentation and adapted databases for assessing and monitoring gene introgression/persistence, and for mapping the distribution of crops/landrace/weedy, wild populations; (b) crop management strategies and operational guidelines to minimize transgene flow; (c) adapted, standardized methodologies for large-scale monitoring of gene flow; (d) regionally-adapted and standardized methodology for evaluating effects on non-crop (non-target) organisms; (e) adapted methodologies and tools for socio-economic impact assessment of LMOs in the tropics; and (f) project-generated knowledge described in (a) – (e) above downloaded to and accessible in, depositories and project websites country based and at CIAT, and participating country BCHs.

30. The project will not finance the planting of transgenic crops nor will be requesting/processing licenses for planting them. Neither will the project have any third party agreements related to the potential use of project data vis-à-vis the use of GMOs. Not all studies proposed will require transgenics. But where available, the collection of data from existing transgenic plots will enhance the effectiveness of the information generated. Regarding the latter, the plots used are already grown on experimental and/or commercial basis in project countries, in compliance with National Biosafety regulations. The project would collect data from these existing fields to adapt methodologies and management strategies to the country and crop-specific situations. Details are included in Annex 4.

***Component 2: Strengthening biosafety decision-making capacity (Total: US\$1.39 million of which US\$0.32 million is from GEF)***

31. The objective of this component is to implement Articles 10 (decision procedure) and 22 (capacity building) of the Cartagena Protocol, specifically their emphasis on regional approaches. It will build biosafety capacity for decision-making entities (competent authorities) and for practitioners (public and private research community) using the knowledge generated by this project in a collaborative effort across the region. The project will finance the following sub-components:

*2.1 Training in environmental risk assessment, for competent authorities and practitioners*

*2.2 Training in socio-economic impact assessment for competent authorities and practitioners*

32. Expected outputs include: (a) decision-making entities (competent authorities, implementing entities of national biosafety frameworks) and practitioners (e.g., agricultural science professionals, transgenic crop developers and users) trained and proficient in the core principles and application of biosafety assessment and biosafety management; (b) competent authorities and practitioners trained to understand and use common methodologies to conduct socio-economic impact assessment of biosafety products for planning purposes.

#### 4. Lessons Learned and Reflected in Project Design

33. Lessons learned from the implementation of other GEF projects (Annex 2) are reflected in specific elements of project design:

- **Consultative preparation and implementation:** Rapid, effective project initiation and execution is related directly to substantial investment during preparation and beyond, in consultation, representative/inclusive decision-making and inter-country coordination of the project strategy and design. Project design and implementing arrangements are the result of an intensive, multi-country and institutional consultative process initiated in 2004 and with specific activities and implementation arrangements designed to build and maintain a consultative methodology and procedures throughout implementation (and beyond- see Annex 11).
- **Biosafety alliances:** Successful implementation and sustainability depend on the project's establishing alliances which support sound evidence-based biosafety policies, to avoid its isolation from "secular" authorities and interests. Similarly, the scope and complexity of emerging regional economic development activities and externalities related to trade and other policies – require cross country and within country partnerships. The project includes science-based training, using professionally-prepared modules, for public competent authorities and practitioners on biosafety management (Annex 4).
- **Sustainability:** Longer-term sustainability of project outcomes and compliance with the CP depend *inter alia*, on training programs which maintain biosafety capacity over time, keep biosafety as a prominent issue of national and global significance in the public mind and which ensure its incorporation in national development priorities and planning. The project fosters regional collaboration and learning within and between diverse country authorities and institution (Annex 4).
- **Public awareness-building and outreach:** Distorted information in the public domain on biotechnology and biosafety tends to stoke controversy by stifling informed public discussion. Awareness-building is therefore a critical activity. To recognize the fact that public awareness and communication issues tend to cross borders easily, a separate, regional, MSP on biosafety communication and public awareness capacity building will be implemented simultaneously.
- **Institutional arrangements:** More complex institutional arrangements – the outcome of a multi-country approach involving four countries - require that the institutional assessments defined during project preparation be deepened and refined during execution. Synergies among stakeholders in dynamic institutional circumstances are not always predictable. Stakeholder engagement is required throughout implementation to increase impact and leverage funding. Further, experience shows that an adaptive management approach between the project coordination, working groups/committees, the Bank and national entities is required, using for example, working groups organized by theme revolving participation based on needs. Project design captures these lessons in the implementation arrangements. The project will be executed by CIAT, working in collaboration with designated National Coordinators in the four countries, and supervised by a Project Management Committee (PMC) comprising key representatives of CIAT (Project Management Team, PMT), the latter working according to thematic areas reflecting respective national strengths and needs, with each thematic area having a Regional Thematic Coordinator (RTC) (Annex 6).
- **Information-sharing systems:** Intensive investment in information sharing system and mechanisms paid dividends under the GEF Colombia Biosafety project, resulting in all government agencies with project involvement following the same set of objectives and working at similar levels of expertise. The focus of shared information in this case has been on how

different agencies carry out risk assessment and how they interact with decision-makers in agriculture and environment in a coordinated fashion to release LMOs into the environment. Project implementation arrangements and the nature of component activities (C1 and C2 ) are designed to foster information sharing of standardized approaches and methodologies, and of high quality, science-based information to regulate the introduction of LMOs.

34. Other findings and recommendations from biosafety operations are also instructive and consistent with the capacity-building focus and design elements of this project. The GEF Council in November 2005, while discussing “Elements of a Biosafety Strategy,” stressed regional approaches with CIAT as the fulcrum for overseeing project coordination between established specialized agencies with complementary skills and track records. The Council also emphasized the importance of ensuring consistency with and collaboration between other bilateral and multilateral biosafety efforts (USAID, IDB, UNEP). Similarly, the GEF Evaluation Office in January 2006 found that fragmentation of assistance and coordination, weak capacity in implementing countries, the need for information “toolkits” which are responsive to country needs and consistent with the CP, and unequal commitment to biosafety between science institutions and governments were all issues hindering compliance with the CP.<sup>11</sup> Project design takes account of these lessons and recommendations.

## **5. Alternatives considered and reasons for rejection**

35. The following alternatives were considered and rejected:

- No project: Rapidly expanding adoption of transgenic crops in Latin America without systematic risk and impact assessment, safety management and tracking/monitoring systems, creates an urgent situation in a region which is among the richest biodiversity areas of the world.
- Separate projects in the four countries: Scale, cost and time inefficiencies, lost opportunities for collaboration and exploitation of comparative advantage and complementary skills, and potential lack of sustainability reduce the viability of this approach.
- Single country project as regional demonstrator: This approach would require major, long-term investment to reach International Standards (IS) and multidisciplinary technical capacity, unacceptable given the rapidly-evolving biosafety situation, scale inefficiencies and lost opportunities.

## **C. IMPLEMENTATION**

### **1. Partnership arrangements (if applicable)**

36. The project is built on partnerships between countries in order to exploit to the extent possible economies of scale and time and complementary expertise. Partner agencies at the national level include an array of prominent entities (National Coordinating Institutions/ Participating Entities) on biosafety analysis and decision making process in each country (see Table 6.1). In order to facilitate project organization and collaboration, each country will designate a national agency as National Coordinator, which will work with these Participating Entities in each country and will be responsible for Country Project Implementation as National Coordinator with the support of the Project Regional Coordination. The national agencies designated by each partner country as the National Coordinators are: the Environment Research Center of EMBRAPA (Brazilian Agricultural Research Corporation, Ministry of Agriculture, Brazil; the Institute von Humboldt (affiliated with the Ministry of Environment, Colombia; the University of Costa Rica; and the National Environmental Council (CONAM, Peru). The relative country strengths and respective areas of contribution are detailed in Annex 6 and Table 6.1.

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<sup>11</sup> Evaluation of GEF’s Support of the Cartagena Protocol on Biosafety, Jarle Harstad, GEF Evaluation Office, January 31, 2006, A Report.

## **2. Institutional and implementation arrangements**

37. The project would be implemented over three years, with the grant partner and implementing agency being the Colombia-based Center for Tropical Agriculture (CIAT). CIAT will work in an integrated manner through a consortium of partner institutions in four countries, building institutional alliances with participating entities to leverage complementary skills in evaluating and managing transgenic crops and their products. The collaborating institutions have selected their National Coordinators (NC) on the basis of their expertise and familiarity with the project, particularly during the PDF-B phase. The NCs have been endorsed by each National GEF Focal Point. Each NC will have an alternate to ensure continuity for project management and technical meetings. The consortium approach provides an opportunity to increase biosafety knowledge and exchange information and experiences among countries at different levels of engagement with transgenic crops while providing a forum to share knowledge generated by project activities.

38. Project technical oversight will be the responsibility of the Project Management Committee (PMC), to be chaired by the Project Coordinator and to consist of the National Coordinators (NCs) from all four countries. The PMC will be responsible for review and approval of all work plans, resource allocation for subprojects and supervision and monitoring of project activities. The preparation of the annual Work Plan will be an iterative process whereby the NC and Thematic Leaders will present proposals to the PMC for final approval which will be based on available resources and national priorities.

39. The NCs will be responsible for consolidating their participation in different thematic areas, and for ensuring that their participation in these areas reflects their national needs and strengths. They will also be responsible for monitoring, execution of the project and the subprojects within their country and for reporting to the PMC.

40. CIAT will be responsible for project coordination, monitoring project progress, preparation of planning materials, administrative support, budget preparation, managing project financial accounts, and for ensuring that project activities are sustainable. CIAT will carry out the day-to-day coordination of the project through a Project Coordinator, aided by CIAT Projects Office and its existing Administrative, Financial, Procurement and Human Resources Units. CIAT will, among other things, act as the overall Project signatory in all agreements with participating entities regarding subprojects (See Annex 6)

## **3. Monitoring and evaluation of outcomes/results**

41. A framework for monitoring and evaluation of project outcomes and results will be fully-developed and under implementation by the beginning of the project year 1. It provides specificity in data collection methodology, levels of monitoring and evaluation activities, data collection and reporting responsibilities, and frequency of M&E activities. It takes into account that a well-designed framework is critical to ensure timely and successful implementation of the project, and to enhance its impact for the beneficiaries by the systematic and periodic analysis of lessons learned, and their effective dissemination.

42. Project monitoring and evaluation would be the responsibility of CIAT. In each country, the NC (National Coordinator) will be responsible for monitoring and evaluation in that country. Performance indicators have been established for the Project and its components, and are presented in the Results Framework in Annex 3. The M&E Framework is based on a cascade of goals, purposes, results, and activities where higher-order activity, that is, components, become the purpose of the lower order, that is, the subcomponents. This approach will ensure the tracking of all activities to the developmental objective of the Project. The PMC will assist in keeping the national interests within the framework of implementation progress. Project design includes baseline determinations and performance (milestones) indicators to monitor the implementation of the plan. Such monitoring will consist of an internal evaluation at the component level, and one at the Project level. Monitoring will be based on periodic reports.

43. By using a management information tool and the financial management system, Project activities will be kept on track and potential problems identified and appropriately addressed. Based on the M&E framework, CIAT will design the reporting formats for each component and for national coordinators, reporting frequency and data collection instruments according to the target annual performance objectives and monitoring indicators shown in Annex 3. Semi-annual reports will cover progress in implementation, and milestones in the use of Project funds and impact. Semi-annual technical and financial reports will be consolidated by CIAT to be submitted to the Bank within two months of the end of each six-month reporting period. These bi-annual reports will also include an implementation plan and activity program for the subsequent six months of the reporting period. A midterm review will assess the overall progress of the Project. The lessons learned and recommendations for any needed improvements would be used in restructuring or realigning Project plans. Post-project impact assessments will be conducted to gauge Project outcome in qualitative and quantitative terms.

#### **4. Sustainability and Replicability**

44. *Institutional Sustainability:* The international consortium of national partners collaborating with International Agricultural Research Centers (IARCs) and prominent entities in each country is a realistic and workable mechanism to build sustainable biosafety capacity in the region. CIAT through its committed support to its biotechnology program will continue to work on biosafety issues beyond the life of the project. Over the past five years, because of their approval of the Cartagena Protocol, there has been an increasing commitment in terms of resources dedicated to biosafety issues in all the participating countries. This is reflected in the establishment of Biosafety Committees in participating countries as well as increased financing through the Ministries of the Environment and Agriculture. This trend in institutional strengthening is expected to continue after the project ends, due to increased demand to deal with biosafety issues. Establishing networks to promote inter-institutional and inter-country collaboration on biosafety and the environment are designed specifically to boost institutional sustainability of the project beyond its life and the outcomes of this project should increase the efficiency of the national programs.

45. Progress on network-building with the NCs will be monitored throughout project execution. Institutional sustainability is the expected outcome of the project's multi-country strategy and structure, which will use the technical experience and complementary expertise of country Centers of Excellence (NCs) and Participating entities. The development and strengthening of the biosafety database (web-enabled), shared among partners and others is part of the strategy to improve sustainability of the project's activities and outcomes beyond its lifetime. Incentives to sustain institutional buy-in and participation will continue to be explored during project implementation.

46. *Financial Sustainability:* The regional operational model is expected to create medium-term economies of scale in implementing the CP. Involvement of international agencies in the project is a potential opportunity for garnering their longer-term financial support. The overall consortium approach also improves the fund-raising prospects of a group of countries versus a single country and reduces intra-regional competition and duplication of effort. In addition, the project provides a base from where LAC regional biosafety capacity can be strengthened. Constructing active fund raising capacity in the partner countries, as well as effective partnerships with other stakeholders and donors, are expected to boost financial sustainability.

47. *Replicability:* The strategy of developing and strengthening the capacity of National Coordinating Agencies is expected to strengthen regional biosafety knowledge bases for the sub-regions, based on their agro-ecological and social needs. Further, the consortium will have, by end-project, established and tested knowledge-sharing mechanism(s) for replication of regional and sub-regional experiences. Methodologies and tools developed by the project will be designed for easy transfer and trained technical personnel will be available within the region. The regional approach also provides a better foundation for replicating similar biosafety operations in other countries of the region. The lessons learnt under this regional project both during project preparation and

implementation would be used in other proposed World Bank-supported regional projects for biosafety (e.g., current proposed GEF project for West Africa and those in the pipeline for other regions in Africa and Asia/Oceania). Within LAC, evaluation of project outcomes at the mid-term review and at the end of project for all components will form the basis for a replication strategy. It incorporates lessons learned and an agenda for reaching other countries outside the immediate project. The project will seek opportunities for similar, follow-on operations or structured learning events in other countries in the region, promoting standardized, best practice methodologies across the region for biosafety risk assessment and management and socio-economic impact analysis.

## 5. Critical risks and possible controversial aspects

<b>Risks</b>	<b>Mitigation Measures</b>	<b>Risk Range<sup>12</sup></b>
<p><i>Reputational risk to the Bank:</i></p> <p>Some international and regional NGOs have voiced concern about the Bank's involvement in biosafety projects in Africa and Latin America. They have also expressed concern that the proposed project will promote GMOs.</p>	<p>Project will build capacity in key institutions to conduct science-based biosafety risk assessment and management, to meet international standards.</p> <p>The consultative process will be continuous. Actions taken/planned include:</p> <p>(i) Project coordinator in CIAT and the 4 country partners to maintain dedicated web page at institutional homepages.</p> <p>(ii) Through the MSP sister project, e-discussions, meetings and workshops on biosafety are planned, engaging relevant stakeholders and civil society in the capacity-building process.</p>	<b>Moderate</b>
<p><i>Modification of Cartagena Protocol:</i></p> <p>Liability and Redress Agreement to be reviewed in 2007.</p> <p>Cartagena Protocol to have five-year review in 2008.</p>	<p>In the event of problems implementing the Project according to agreed work plans due to changes in international/national agreements, CIAT in consultation with the PMC and World Bank/GEF, would develop alternatives depending on the status of the CP. Even in the worst-case (without-CP) scenario, building country capacity for risk assessment, management, and socio-economic impact analysis remains a top priority and would proceed.</p>	<b>Moderate</b>
<p><i>Focus and coherence:</i></p> <p>Participation of multiple countries with differing interests/capacity to implement Cartagena Protocol, and participation of multiple entities within each country, could complicate implementation.</p>	<p>Initial selection of entities will be based on expertise, complementarities and work record as entry points for each country to guarantee project commitment and execution.</p> <p>Governance arrangements include a Project Management Committee with representatives of partner countries (NCs) to avoid predominance of some countries and ensure that participating entities focus on project objectives and outputs.</p>	<b>Moderate</b>
<p><i>Deficient performance of project partners:</i></p> <p>Deficient or slower-paced performance of project partners</p>	<p>CIAT, in consultation with the PMC and World Bank/GEF would develop an alternative action plan for recouping country performance, and pace of project execution.</p>	<b>Modest</b>

<sup>12</sup> Risk rating after mitigation (High, Satisfactory, Moderate or None)

may affect sequencing of project activities and financing.	Funds will flow to CIAT in the first instance, not individual countries; permitting control over the flow of funds <i>vis a vis</i> performance.	
<i>Changed commitment to project objectives:</i>  Electoral change in a partner country resulting in policy change.	CIAT, in consultation with the PMC and World Bank/GEF, would develop a strategy consistent with project objectives and activities, to educate new administration in project goals and methodologies.	<b>Modest</b>
<i>Procurement:</i>  Bank procurement Capacity Assessment (March 2006) defined as risks (i) Dispersion of procurement activities among subproject beneficiaries, and (ii) CIAT's lack of direct experience with Bank-financed procurement.	CIAT has already received procurement training/guidance from the Bank.  Project beneficiaries will receive procurement training and guidance from the Bank.  Bank will review/clear the first procurement actions per procurement method before their implementation.	<b>High</b>
<i>Financial Management:</i>  Executing subproject grants under the project is inherently risky due to its multi-country and multi-entity design.	Risk mitigation measures will include customization of accountability reports, external audits and Bank project/Financial Management supervision.  The Bank Financial Management Assessment (FMA) of CIAT in September 16, 2005 concluded that CIAT has sufficient capacity to manage project financial matters.	<b>Moderate</b>
<b>Overall Risk Rating:</b>		<b>Moderate</b>

## 6. Loan/credit conditions and covenants

48. The following is a condition of Effectiveness:

- Each Memorandum of Understanding (MOU) has been executed on behalf of the Recipient and the respective National Coordinating Agency.

49. Legal covenants will pertain to: (a) inter-institutional agreements between CIAT and the national collaborating agencies, defining their respective responsibilities under the project; and (b) monitoring and evaluation system designed/operational.

### D. APPRAISAL SUMMARY

#### 1. Economic and financial analysis

50. By their very nature, capacity building and research projects do not lend themselves to conventional economic rate of return or net present value analyses. Nevertheless, an incremental cost analysis has been carried out for the project, and general comments on the possible economic implications of the project can be made.

#### Incremental Cost Analysis

51. The proposed project is a stand-alone operation totaling US\$12.0 million, consisting of US\$4.0 million in financing from the GEF, and US\$8.0million from the four participating countries and CIAT. As shown in the detailed Incremental Cost Analysis (Annex 15), the Baseline (i.e.,

without project) scenario estimates little financing of capacity building within, and limited coordinated efforts among, the four participating countries. Without the project, the four countries would be expected to undertake the steps required to comply with their obligations under the Cartagena Protocol at a much slower rate, with little regional coordination and missed opportunities for economies of scale, causing inefficiencies and lowered effectiveness. CIAT, in particular, would lack adequate funding to organize regional biosafety initiatives and it is unlikely that there would be an integrated approach to exploit potential synergies. As a result, the potential biodiversity benefits of the Baseline scenario would be expected to be modest or negligible.

52. In the with project case, GEF involvement would provide the necessary incremental financing to maximize the global biodiversity conservation benefits of the project and to promote a replicable model for other countries in Latin America and throughout the world in the project's two main areas of work: (a) biosafety capacity-building in knowledge generation for biosafety risk assessment and management; and (b) strengthening biosafety decision-making capacity.

### **Other Economic and Financial Implications**

53. As noted above, a conventional ERR/NPV analysis is not appropriate for this type of project. However, a review was made of the proposed project design from the standpoint of economic and financial efficiency. First it was determined that the proposed project design is an efficient one to assist the participating countries in complying with their obligations under the Cartagena Protocol. For example, technical and socio-economic analyses supported under the project will take advantage of existing field trials. Second, it was also determined that proposed project costs are in line with good practice in other biosafety, capacity building and research projects, including other GEF supported biosafety projects in Latin America and elsewhere.

54. Beyond the scope of this project, which is to assist countries develop their biosafety capacity under the terms of their obligations under the Cartagena Protocol, and not to approve or disapprove the adoption of LMOs, some additional comments can be made regarding the potential economic implications of this enhanced biosafety capacity. In a without-project scenario, the rapidly expanding adoption of transgenic crops without systematic risk and impact assessment, safety management and tracking/monitoring systems entails significant economic and other risks to the biodiversity of the project's participating countries, which are among the world's richest in biodiversity, as well as economic and other risks to national strategies for expanding agricultural production and trade, and for reducing poverty. Therefore, any consideration of the potential socio-economic impacts associated with enhanced biosafety measures needs to be seen in the context of the economic gains at the farm level as well as the national level, taking into consideration both socio-economic and environmental impacts.

55. At present the number of such comprehensive analyses for LMOs in developing countries is small though steadily increasing as commercialization of LMOs increases and more data becomes available. Many of the existing economic analyses indicate that the economic and financial rates of return of LMOs are significant, assuming that appropriate safety measures are enforced to mitigate the risks<sup>13</sup>. In this context, enhanced biosafety capacity would help countries take advantage of the benefits of LMO adoption if they should choose to do so.

56. At the same time, socio-economic impact assessments do not necessarily or adequately account for the potential threats to biodiversity—especially of the wild relatives of important food crops—of unregulated dissemination of LMOs. Although a number of studies have demonstrated the positive rates of return to the commercialization of LMOs, they have not always factored in the potential risks involved in unregulated, unsafe transfer and handling of these crops. While difficult to quantify using conventional financial models, the existence values of biodiversity and genetic

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<sup>13</sup> Traxler, G. "A Review of the Evidence of Economic Benefits of GMOS in Developing Countries." Draft, 2006.

resources may be measured through alternative valuation methods that are rapidly gaining acceptance<sup>14</sup>. In this context, enhanced biosafety capacity could help countries choose to disapprove or modify LMO proposals if they decide the risks to the biodiversity resources are too high. In sum, the enhanced biosafety capacity supported by the proposed project would be economically beneficial by helping countries in their decision to approve LMO proposals (and capture the potential economic gains) or disapprove them (and avoid the potential economic losses).

## **2. Technical**

57. The technical approach is innovative in attempting to integrate and standardize country biosafety technical/analytical capacity at a regional level, and for integrating science as a pillar of policy- and decision-making, based on difficulties frequently observed in achieving that integration. The stress on technical capacity-building responds directly to intentions of the Biodiversity Convention (Article 19). The proposal departs from recent, similar, regional projects in putting more emphasis on science-based/technical peer learning between participating countries, and a more inclusive approach to the essential technical and other linkages between biosafety and biotechnology assessment, for regional agriculture.

## **3. Fiduciary**

58. CIAT will be responsible for managing the fiduciary aspects of the project through its Projects Office and Financial and Administrative departments. Principle financial and accounting responsibilities will include: (a) maintaining accounting records; (b) processing disbursements; (c) preparing project financial statements in accordance with World Bank guidelines; (d) managing bank accounts; (e) managing financial information systems; (f) preparing and submitting Quarterly Interim Un-Audited Financial Reports (IFR), and (g) preparing and submitting withdrawal applications.

### **Financial Management and Disbursements**

59. A Financial Management Assessment (FMA) of CIAT was carried out during preparation of the PDF-B grant in September 16, 2005 and conducted in accordance with OP/BP 10.02 and the Guidelines for the Assessment of Financial Management Arrangements in World Bank Financed Projects. The assessment in general concluded that CIAT had sufficient capacity to manage financial matters and administer PDF-B grant preparation funds. The entity FM assessment for the Grant itself was assessed at appraisal and the assessment in general concluded that CIAT had sufficient capacity to manage financial matters and administer the project grants.

60. Without prejudice to the results of the updated FM assessment, some project-specific actions have been identified to strengthen the FM capacity of CIAT and enable it to carry out the financial coordination of the subprojects to be implemented by the National Coordinating Agencies (NCs) : 1) before negotiations, preparation of detailed flow of funds procedures between CIAT and the NCs in Brazil, Colombia, Costa Rica and Peru will be prepared; 2) based on the above, CIAT will supervise the use of project funds in the subprojects implemented by the NCs; 3) The financial management chapter of Operational Manual (OM) will be reviewed and approved by the Bank before negotiations, and it should include details related to the above two actions.

61. The proposed GEF grant would be disbursed over a period of three and a half years with a Grant Closing Date of July 15, 2010. Irrespective of the disbursement mechanism to be implemented for this project and to facilitate project implementation, the project will have access to funds advanced by the Bank to a Designated Account in US dollars for processing disbursements for eligible expenditures under project activities. Funds deposited into the Designated Account as advances

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<sup>14</sup> Traxler, G. "The Potential Economic Benefits of Bt Cotton and Maize in Brazil, Colombia, and Mexico." Draft, 2006.

(depending on the disbursement mechanism) will follow the Bank's disbursement operating policies and procedures established for each mechanism as described in the Grant Agreement and in the Disbursement Letter, as the case may be.

## **Procurement**

62. Project procurement activities will be carried out under the general supervision of CIAT, and based on the Procurement Section of the project's Operational Manual. An assessment of the capacity of CIAT, the proposed executing agency, to implement procurement actions for the project was carried out by the World Bank in March of 2006, while it was implementing project preparation activities. The assessment reviewed CIAT's organizational structure and capacity for implementing the project. CIAT was not --at the time of the assessment-- staffed by personnel duly and directly experienced in World Bank-funded procurement. Considering the relatively low value of the planned procurement, the assessment recommends either (i) the hiring of at least a part-time procurement consultant experienced in Bank-funded procurement procedures, to provide advice and hands-on training to CIAT personnel involved in project procurement, or (ii) that the Bank must conduct a 2-3 day procurement seminar for that personnel.

63. The overall project risk for procurement is HIGH. Therefore, the following measures have been proposed: (i) CIAT and project beneficiaries (NCs) to receive procurement orientation by the Bank; (ii) Bank to review and clear the first procurement actions per procurement method before being executed; and (iii) clear guidance on procurement in the project's Operations Manual.

## **4. Social**

### **Stakeholder Involvement**

64. The immediate target audience for this project includes the national agricultural innovation system (NAIS), public authorities and civil society (including farmer groups, producer and community organizations and environmental interest groups) in the participating countries (Brazil, Colombia, Costa Rica and Peru), with the international organizations as regional facilitators. Due to the controversy surrounding biosafety, stakeholder consultation and engagement is seen as a continuous, transparent, evolving and adaptable process, responsive to immediate and longer-term circumstances and to ensuring that interested groups/entities have both opportunity and forums and sites for providing and receiving input. Annex 11 provides details of the stakeholder consultation concept/process and implementation framework.

65. Stakeholder involvement has been a core element of the debate on biosafety since the first wave of biosafety regulations emerged in the 1990s. There is probably no area of technology where stakeholder involvement is more deeply embedded in regulations and legislation. Given the ramifications of compliance with the CP, biosafety capacity-building per se, and the public controversy surrounding GMO crops, the stakeholder universe is broad and this is reflected in the reach of the related MSP's knowledge generation and dissemination objectives and functions over the course of project implementation.

66. Project development was initiated by the CIAT Agro-biodiversity Research Group through an interactive dialogue on national biosafety issues between the relevant country ministries and/or their agencies. This dialogue, a series of CIAT-sponsored courses on biosafety, and other analyses revealed that despite their biosafety legal codes, country technical capacity to implement the CP was weak and variable in and between countries. The most glaring deficiency was found to be the lack of environmental risk and socio-economic impact assessment methodologies and processes for biosafety. Countries also expressed concern about the trans-boundary movement of LMOs and their need to have confidence in neighboring countries, which led to a series of discussions between representatives of ministries of agriculture, social protection and health, and also decisions about who would act as country project focal points.

67. Formal project preparation has involved consultation with a broad group of parties. A consultation process included workshops, meetings and electronic discussions among key stakeholder groups which has been pivotal in designing and broad country ownership of the project. Entities already consulted include national research institutes from each country, government biosafety agencies, ministries responsible for natural resources, agriculture and production, and international and regional agricultural institutes. In each of the participating countries, partners include not only agriculture, biotechnology and biosafety experts but also representatives of the environmental field responsible for biodiversity conservation in those countries (e.g., Alexander von Humboldt Institute, Colombia CONAM, Peru; EMBRAPA, Brazil; and INBIO, Costa Rica (see Annex 6, Table 6.1).

68. **Consultation with Civil Society.** While most of the biosafety courses and meetings included civil society representatives with divergent views about LMO/biosafety, the general discussion preceding formal project preparation focused on responding to the needs and concerns of country authorities responsible for planning, decision-making and management within the biotechnology and biosafety spectrum, and including compliance with the Cartagena Protocol on Biosafety. A communication strategy will be implemented through the sister MSP on communication and public awareness to intensify engagement with organized civil society and producer groups over time, using information transfer, dissemination and exchange media and methodologies (Annex 11).

69. In order to analyze the stakeholders' views and opinions regarding the project and its goals a multi stakeholder consultation as part of Social Assessment got underway during the project preparation, which will be continued during implementation. As part of this process an e-consultation was carried out in December 2006 in the four participating countries. The analyses show an overall high level of stakeholder agreement with the objectives of the proposed project. The detailed results of the stakeholder consultation are summarized in Annex 11. Additional stakeholder consultation is planned through the sister MSP. These include e-consultations, publication sharing, meetings with biosafety and environmental NGOs and private sector groups, and further consultations with relevant government institutions in each of the four countries.

70. As project preparation has advanced, consultations have been amplified to incorporate, for example, the International Project on GMO Environmental Risk Assessment Methodologies (GMO ERA) in which several of the project partners are collaborators as part of the GMO ERA group. Three of the four national coordinators of the Project participated in the June 2006 workshop on Environmental Risk Assessment Methodologies in Brazil, with the goal of establishing links between the project, other biosafety initiatives and civil society bodies. Within the Bank, a Biosafety Consultation on October 16, 2006 - broadly publicized - attracted a diverse audience including NGOs, Bank and external environmental specialists, economists and representatives of international organizations to discuss inter alia, the proposed project.

71. The overall goal of these consultations is to foster a pluralistic approach to stakeholder participation and knowledge-sharing. It is also an important reason for organizing the work agenda around thematic areas. In terms of design, the project will focus on the key elements for successful stakeholder engagement which tend to fall by the wayside in the rush to participate in the discourse. Much of the information publicly available now has no technical basis, which has tended to confuse perceptions of biosafety and biotechnology and increase the element of controversy. Further, CIAT has designed a project website linked to sites in all partner countries and including an online newsletter and planning an information-sharing event with the media and key NGOs to establish the foundation for sustaining a consultative approach throughout project implementation.

72. **Biosafety Clearing Houses (BCH).** Where relevant, the project will share information with national Biosafety Clearing Houses (BCH), placing data in a parallel system of depositories in the participating countries, and sharing information in a manner not prejudicial to the intellectual property rights of knowledge generators. Some project countries have a fully functional Biosafety Clearing House (BCH) and others have recently received additional training in BCH. A regional node will further improve information sharing and dissemination among a wide diversity of interested

parties/stakeholders, including civil society. Information in the above depositories will be linked with the national BCHs of project countries.

## 5. Environment

73. The project’s global environmental objective is to strengthen the capacity of the four participating countries to implement the Cartagena Protocol (CP) on biosafety, by strengthening technical capacity in knowledge generation for biosafety risk assessment and management and strengthening biosafety decision-making capacity. This would ensure an adequate level of protection in the field of the transfer, handling and use of transgenic crops in centers of crop diversity. The project is thus expected to have positive environmental impacts if implemented as planned and would have no significant, adverse environmental effects during implementation.

## 6. Safeguard policies

<b>Safeguard Policies Triggered by the Project</b>	Yes	No
<a href="#">Environmental Assessment (OP/BP/GP 4.01)</a>	[ x ]	[ ]
Natural Habitats ( <a href="#">OP/BP 4.04</a> )	[ ]	[ x ]
Pest Management ( <a href="#">OP 4.09</a> )	[ x ]	[ ]
Cultural Property ( <a href="#">OPN 11.03</a> , being revised as OP 4.11)	[ ]	[ x ]
Involuntary Resettlement ( <a href="#">OP/BP 4.12</a> )	[ ]	[ x ]
Indigenous Peoples ( <a href="#">OD 4.20</a> , being revised as OP 4.10)	[ ]	[ x ]
Forests ( <a href="#">OP/BP 4.36</a> )	[ ]	[ x ]
Safety of Dams ( <a href="#">OP/BP 4.37</a> )	[ ]	[ x ]
Projects in Disputed Areas ( <a href="#">OP/BP/GP 7.60</a> )*	[ ]	[ x ]
Projects on International Waterways ( <a href="#">OP/BP/GP 7.50</a> )	[ ]	[ x ]

74. The Quality Assurance Team (QAT) recommended a Category “C” rating in its review of the Project Concept Note (January 27, 2005).

75. This rating was re-confirmed by the Quality Enhancement Review (March 7, 2006). The project’s explicit goal is to prevent/reduce the potential environmental risks of modern biotechnology through activities designed to build capacity to implement the CP. The project will not finance the planting of genetically-modified crops. The project does not trigger the Indigenous Peoples Policy (OD 4.20) since project activities do not impinge negatively on their physical and material wellbeing.

## 7. Policy Exceptions and Readiness

76. The proposed project does not require any exception from IBRD or GEF policies. This project complies with all applicable Bank and GEF policies.

\* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

## Annex 1: Country and Sector or Program Background

### LATIN AMERICA: Regional Capacity-Building in Biosafety

1. Latin America has adopted Genetically Modified Organisms (GMOs) at a faster rate than any other region of the world. This rate of adoption increasingly risks creating regional disparities in agricultural competitiveness, in turn leading to new adoptions based on insufficient scientifically-sound biosafety decision-making, assessment and/or management instruments. Some 41% of all countries currently growing commercial, transgenic crops are in this region<sup>15</sup>. In 2004, Latin America grew 30% (23 million hectares) of the total global area of transgenic crops, second only to the United States (48 million ha). Rapid growth is the outcome of the manifest delivery of economic benefits for the agricultural economy of the region, by the initial products of biotechnology<sup>16</sup>. However, public perceptions of and indeed, the broad public debate about biotechnology and its products, reflects widespread mistrust. Distorted information in the public domain on biotechnology and biosafety tends to stoke up controversy by stifling informed public discussion in many countries, outright rejection of LMO products at the outset of a more organized process of environmental risk assessment and socio-economic impact analysis for this region. This situation is made more complex by private corporate agencies promoting the use of LMO technology within a biased, misleading and simplistic discourse which suggests that LMO technology is the future/solution for agriculture in the developing world.

2. Agriculture in Latin America faces major challenges to increase crop productivity using efficient systems that reduce inputs, are environmentally friendly, provide social equity and increase revenues to small farmers, thereby reducing hunger and poverty. Alternative agricultural systems and consumer acceptance worldwide are shaping domestic and international food trade with direct economic effects on the most deprived sectors of society in this region. This complex, evolving situation calls for knowledge-based systems which permit the coexistence of diverse agricultural systems - subsistence agriculture, productive systems supported by conventional breeding and/or biotechnology, organic farming for specialty high-price markets and others - consistent with social diversity, while ensuring economic growth and environmental protection. The public sector in Latin America must establish systems for unbiased, technical analysis upon which to base decision-making about the acquisition of new agro-technologies. It must also provide an objective, open, consultative climate for decision-making which heeds societal concerns and needs in developing countries which are centers of crop biodiversity, as in this region.

3. **Biodiversity:** Tropical Latin America and the Caribbean (LAC) Region are among the richest biodiversity areas of the world as recognized by the Convention on Biological Diversity (CBD), harboring the center of origin of landrace/weedy/wild relatives<sup>17</sup> of many important crops. Around one-third of all crop plants grown world-wide were domesticated from the biodiversity of Tropical America. Mesoamerica, the Andean region and the Amazon were the centers of origin or diversification of maize, beans, potato, sweet potato, tomato, cassava, groundnut, pineapple, cotton, cacao, and chili peppers, among others. All four countries selected for project participation – Brazil, Colombia, Costa Rica and Peru – have major centers of mega-biodiversity, as defined by the CBD. The lack of knowledge of the impact on biodiversity of the accelerating and unregulated use of LMOs

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<sup>15</sup> A transgenic crop plant contains a gene/genes which have been artificially inserted instead of the plant acquiring them through pollination. The inserted gene sequence (known as *transgene*) might come from another, unrelated plant, or from a completely different species. Plants containing transgenes are often called genetically modified or GM crops, although in reality all crops have been genetically-modified from their original wild state. Several commercially important crops such as maize, soybean, tomato, cotton, potato and rice have been utilized for incorporating transgenic traits; the traits targeted for genetic transfer to plants could be classified broadly as herbicide tolerance, insect resistance, disease resistance, product quality improvement, and ability to grow in harsh environments.

<sup>16</sup> Based on 8 years of data since the first, large scale dissemination of this technology (in Argentina), economic impact studies have shown a significant benefit at the farm level as well as at the level of national farming economies (Trigo et al. 2003)<sup>16</sup>.

<sup>17</sup> Landrace plants are older, often farmer-developed strains of a species, ideally-suited to the environment where they live, and bred through traditional methods of natural selection without the influence of modern breeding practices.

maintains decision-makers and mega-diversity countries in some uncertainty regarding the medium- and long-term implications for the regional and global environment, and for human and animal health in particular.

4. Despite of their biodiversity and expanding commercial cultivation of transgenic crops, LAC countries have received little attention, in contrast to Asia and Africa which have received major funding from the developed world in recent years to establish functional biosafety systems (e.g., USAID is currently supporting two mega-projects on biosafety for these regions valued at about US\$30 million each). Latin America is already falling behind in its capacity to implement biosafety regulation in compliance with international standards and treaties, and with associated international trade implications.

5. This situation, together with the latest developments in international agreements on biosafety designed to protect the environment and animal/human health, and to regulate trans-boundary movement and use of these crops, creates an urgent and relatively high-risk situation which needs to be addressed at the national and regional levels. Urgency also stems from pragmatic, market realities. The global economy has resulted in the formation of trading blocs<sup>18</sup> which are shaping regional commerce including the fate of biotechnology-derived products. Establishing biosafety capacity in the LAC region is complex due to the diversity of technical topics and research areas involved which encompass the biological, socio-economic, health, legal and political arenas.

6. ***Cartagena Protocol:*** The Cartagena Protocol (CP) was adopted in 2000 as a supplementary agreement to the Convention on Biological Diversity (CBD) of 1992, and entered into force on September 11, 2003 after ratification by 56 countries. All four project countries had developed and implemented a biosafety framework prior to the Cartagena Protocol and all have either ratified the CBD (Annex 1, Table 1) and the Cartagena Protocol (Annex 1 Table 2).

7. The Protocol objective is to contribute to ensuring an adequate level of protecting in the field of the safe transfer, handling and use of living modified organisms (LMOs, also commonly known as transgenic crops or genetically-modified organisms, GMOs) resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking into account the risks to human health, and specifically focusing on the trans-boundary movement. The Protocol Article 7 establishes an “Advance Informed Agreement” (AIA) procedure, subject to Articles 5 and 6, for ensuring that countries are provided with prior written notification and the information needed – health, environmental, socio-economic - to make informed decisions before agreeing to the first importation of material intended for introduction into the environment. Assessment of transgenic crops is usually done case-by-case, requiring an interdisciplinary approach.

8. Compliance with the CP and global trade norms requires an established national capacity as well as technical assessment and research methodologies and protocols for environmental and health safety analyses, all of which are weakened that need to be strengthened in developing countries. The safety dossiers of commercial transgenic crops are usually generated in temperate environments, requiring their subsequent validation as a prerequisite in the tropics since population and environmental dynamics are different and sometimes more complex. Additionally, current investments of the public sector in biotechnology in developing countries advance. In regard to human health, OECD formulated guidelines in 1993 that were adopted internationally for the safety assessment of transgenic crops. The concept of substantial equivalence, i.e., that food derived from transgenic crops can be compared with the appropriate conventional counterpart, should be used as the ‘starting point’ of a deeper safety evaluation. As emphasized in 1999 by OECD, the concept of substantial equivalence is not itself a substitute for a safety assessment but a principle, which is intended to be a useful tool to those engaged in safety assessment. While not officially part of the “Codex Alimentarius Commission” structure, FAO and WHO have provided expert scientific advice on general food safety aspects of foods derived from transgenic crops since 1991.

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<sup>18</sup> In Latin America, currently Mercosur, Andean Pact, CARICOM, CAFTA and NAFTA, with FTAA under negotiation.

9. **Protocol Priorities:** Human resource development, database development, baseline information about crops (especially in mega-diverse areas) and expertise in methodologies for risk assessment are identified by the CP as priority areas for development. Although the CP sets a framework for the biosafety aspects of all living organisms resulting from modern biotechnology, the most important field of application in the near-medium term is the biosafety of agricultural crops modified by modern biotechnology. Quality implementation of the CP has a direct impact on the agricultural innovation and technology transfer policies of developing agricultural economies such as the partner countries in this proposal, and for the global economy and environment. Capacity building in the technical aspects of risk assessment remains a major area of concern of the CP<sup>19</sup>.

10. **Partner Countries:** The four regional participants were selected for the following reasons: (a) high levels of biodiversity of important crops and their wild relatives as well as lesser-known crops with high food or trade value; (b) geographic distribution of wild/weedy relatives of economically important crops such as maize, beans, rice potato, sweetpotato, tomato, cassava, groundnut, pineapple, cotton, cacao and chili peppers, among others; (c) relative levels of development and implementation of biosafety policy including active GEF-funded projects and World Bank projects in agriculture and rural development; (d) complementary research strengths and expertise related to implementing the Cartagena Protocol; and (e) potential, strategic, future role they might play in biosafety management in their respective sub-regions (Costa Rica for Central America, Colombia and Peru for the Andean Region, and Brazil for the Southern Cone).

11. The following summarizes for each participating country, aspects of the agriculture sector, governments' strategic direction and CAS pillars, and background on biosafety.<sup>20</sup>

12. **Brazil:** The past decade has seen Brazil consolidate its position as a front-ranking agricultural producer and major food supplier to international markets, the benefits of currency devaluation, low production costs, rapid technological advances and domestic/foreign investment in expanded productive capacity. Brazil is a highly competitive exporter of soybean, soy meal, sugar, poultry, beef, coffee, tobacco and orange juice. Government has dramatically expanded support to the sector in recent years. Brazil is one of the few countries in the world with capacity to significantly expand farmland. An important element of government's current agricultural strategy is to provide incentives for the development and adoption of the latest technology to expand production and exports.

13. More broadly, as delineated in the 2003 Country Assistance Strategy (CAS), the economic and social context in Brazil mandates a strategy for growth based on equity and sustainability, supported by improved productivity, stronger institutions, and a focus on key environmental focal points including sustainable use and conservation of the rainforest biome. Innovation supporting the welfare of all Brazilians, but especially the poorest, is targeted. Government's Multi-year Plan 2004-2007 known as "Brazil for Everyone" calls, inter alia, for greater harmony between development and the environment, and for managing natural resources as a critical element in reducing poverty, since natural resources constitute up to 80% of the assets of the poor especially in the North and Northeast regions of the country, and the preservation and controlled use of the natural resource base is linked directly to equity and sustainability.

14. Brazil has the highest biodiversity of any country on earth and is already facing the ecological consequences of continuous expansion of the agricultural frontier. In general terms, Brazil has adopted precautionary policies towards the approval of GM crops for release, despite the fact that significant public investment is going into their development; and in certain crops such as soybean, a relatively high proportion of material used is transgenic, as high as 100% in some states such as Rio Grande do Sul. The cautious approach is attributed to strong pressure from environmental groups in

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<sup>19</sup> Report of the Ad Hoc Technical Expert Group on Risk Assessment, December 2005, Rome, Italy

<sup>20</sup> **Brazil:** latest CAS 27043, November 10, 2003; **Colombia:** latest CAS 25129, December 24, 2002 and CAS Progress Report 32999, September 9, 2005; **Peru:** latest CAS 24205, August 19, 2002 and CAS Progress Report 30292, November 9, 2004; and **Costa Rica:** latest CAS 28570, April 20, 2004.

Europe and Japan towards the planting of such crops by developing, exporter countries such as Brazil; the precautionary tone of the Cartagena Protocol concerning trans-boundary movement of LMO; and donor assistance, which has tended to focus more on biosafety risks than the potential advantages of such crops.

15. Brazil revised its first national biosafety law (Law 8.974/95 of 1995), substituting Law 11.105/05 approved in March 2005, which differs from the initial framework by separating biosafety risk analysis and technical capacity responsibilities of the National Biosafety Committee (CTNBio) from the political and socio-economic decisions now taken by a commission of nine Ministers of State involved in LMO/GMO approval and commercial release. The new law is expected to reduce ideological disputes, and facilitate the deployment of LMO/GMO technology following approval for environmental release and for human/animal consumption, with proper environmental and health safeguards. The National Focal Point remains the Ministry of Foreign Affairs.

16. **Colombia:** Agriculture remains the foundation of the Colombian economy even though its growth has slowed since the 1980s; a function of lower world commodity prices, rising input costs, under- investment and greater regional competition for export markets. Coffee is the principal agricultural crop but its export position was overtaken by petroleum in the mid-1990s. The country's varied climate and topography permit cultivation of diverse other crops including cacao bean, sugarcane, cotton, bananas and cut flowers, the latter an important success story in government's diversification push. Prominent food crops include rice, beans, cassava, potato and plantain. The private sector, considered well-managed and capable of expanding agricultural output, has since the 1970s assumed most of the responsibility for research, training, credit, processing and marketing activities; producer groups have remained a major force in sector coordination of agricultural policies and programs.

17. Government's current agricultural strategy rests on preparing the sector to take on the challenges of regional/global trade agreements by: improving producer support mechanisms; restructuring the sector to increase productivity to international standards; promoting the creation of new, technology-based sectors and strengthening the science, technology and innovation components of agricultural production; and, responding to global demand while guaranteeing the maintenance, protection and sustainable development of existing ecosystems/biodiversity and the broader environment<sup>21</sup>. Government's peace agenda has been the driving force behind recent national development plans and implies forging ahead with the established reform program in, among others, the environmental and social sectors, with focused support for rural development and natural resources management. Government's strategy calls for mainstreaming environment in key sectors of the economy.

18. Government has demonstrated commitment to biosafety issues, as a lead country in formulating and signing the Cartagena Protocol, by implementing institutional, legal, environmental and public information measures since 1991, including under the 1998 law on Biosafety and Genetically Modified Organisms (LBOGM), creating a National Technical Advisory Biosafety Committee, and corresponding regulations for the introduction, production, release and trading in agriculture and livestock LMOs. The Ministry of Agriculture, through the Colombian Agricultural Institute (ICA) authorizes the use, manipulation, export and import of LMOs for agriculture, fishery, commercial forestry and agro-industry. When the LMO is for environmental use, responsibility is with the Ministry of Environment and Territorial Development, and in the case of food and health, with the Ministry of Social Protection. This law also specifies the legally-binding mandates with respect to permits for releasing LMOs into the environment.

19. **Costa Rica:** The economy of Costa Rica depends on agriculture, tourism and electronics with principal agricultural products being coffee, banana, beans, potato, beef and timber. The country

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<sup>21</sup> National Strategy for Strengthening Trade-Related Capacities, Ministry of Trade, Industry and Tourism, Colombia, August 2003.

faces the challenges of exploring the nexus between agriculture and the environment. The CAS pillars support Government's strategic emphasis on strengthening trade and competitiveness, the economic diversification agenda and continuing the country's pioneering leadership on environmental management. The Ministries of Agriculture and Environment are strongly committed to finding solutions to stimulate productive, sustainable agriculture which reduces poverty among smallholders and incorporates conservation practices fully integrated into rural landscapes. To date, Costa Rica has been exceptionally successful in exploiting the linkages between environmental protection and poverty reduction, e.g., setting aside 25% of land to protected areas and putting in place innovative ways to pay its citizens for good environmental practices.

20. Government is demonstrably committed to preserving biodiversity through progressive environmental policies. The country is a global leader on the environmental and has developed markets for global and local environmental services, contributing to rural development, fostering conservation of biodiversity, preservation of forest eco-systems on private land, and the production and sale of environmentally friendly products. Costa Rica established in 1990 a National Technical Commission on Biosafety under the Phytosanitary Protection Law 7664 and its regulations, administered by the Ministry of Agriculture and Livestock. The authorized plantation of GM crops in Costa Rica is permitted only for seed production; crops per se, have not yet been released for commercial production or for the consumption of human/animal food. However, Costa Rica has invested significant resources in GMO development and accumulated substantial knowledge on their management, sees itself as a leader in the region and sees GMO technology as having major potential economic, social and environmental benefits.

21. *Peru*: Agricultural production in Peru has lagged population growth. Output per capita started to decline in the 1950s, rose to its former levels again by 1970, then fell steadily through the 1980s and on. This was accompanied by a decline in the share of agricultural production being exported. Only 2.8% of potentially arable area is actually used for agriculture. The main commercial crops are coffee, sugarcane, cotton and rice. Potato, corn, barley, wheat, manioc, sweet potato, fruit and vegetables are grown by small producers using traditional, subsistence methods. Some 35% of the total workforce is in agriculture. Although in aggregate, production per capita fell, a few important products stood out, e.g., rice output increased 8% per year in the 1980s and 1990s as well as poultry and egg production, which grew at similar rates. The Ministry of Agriculture has interpreted these positive results as indicative more generally, of what could be done with better incentives and modern agricultural technologies. The Peru CAS supports government's programs and institutional reforms for renewing growth and reducing poverty, while strengthening emphasis on partnerships with IDB and the Andean Development Corporation to advance its strategic pillars which include increased competitiveness with greater social equity.

22. In biosafety specifically, the Peruvian Government's National Strategy for Biodiversity (approved September 2001) requires that biosafety considerations be factored into all related policies, planning and sector programs, and stipulates the development of mechanisms to regulate the manipulation of genetic resources, promoting biotechnology as an important tool for both the development and control of living modified organisms (LMOs). Further, legislation currently pending approval by the Peruvian Congress explicitly justifies support to biotechnological innovation on grounds of national food security; global export competitiveness; prudent utilization of Peru's mega-biodiversity, moving away from extensive agriculture/de-forestation to higher-value, intensive agriculture; increasing nutritional value and health properties of food crops and other plant materials; and industrial, pharmaceutical and soil recuperation applications.

### **Project Strategy**

23. The availability of a functioning legal biosafety framework for the regulation, management and deployment of LMOs is undoubtedly core strength of participating countries, but this is clearly not enough. Each country is facing certain capacity limitations and obstacles - technical, legal, policy and political - which hinder its ability to comply fully with CP requirements. In consultations leading

to project formulation, partner countries/stakeholders consistently identified as priorities, strengthening technical capacity in risk assessment and risk management of new transgenic products and in disseminating technically sound and understandable information, both to support planning and policy-making on biosafety and to dispel widespread misunderstanding concerning the nature and risks of transgenic crops.

24. This project departs from other, current biosafety operations in Colombia, India and elsewhere by adopting a multi-country approach, generating international standardized mechanisms for risk assessment and risk management, and socio-economic impact assessment,. The project's immediate target audience is the national agricultural innovation system (NAIS), competent authorities (as defined by the CP) and biosafety practitioners. It targets both the public and private sectors in the rural and urban domains. It is expected that, at completion of this three-year capacity-building project, all four countries will have a more transparent and predictable regulatory environment, and sufficient capacity and effective coordination between the responsible agencies/entities to assess and manage risks associated with the use and trans-boundary movement of LMOs.

25. The institutional vehicle will be a multi-country targeting tropical region, strategic collaboration between four selected LAC countries, represented by competent entities with complementary expertise serving as centers of knowledge/experience, and models of best practice. Given the issues involved and the rapidity with which the situation is evolving, the partner countries agree that a regional approach is likely to be more cost effective, achieve more rapid impact, and be more sustainable than alternative methods, since it would both utilize and enhance existing regional capacity. The project paradigm is thus built on centers of biodiversity in the Andean, Mesoamerican regions and Tropical America on maximizing economies of scale by exploiting the comparative advantages of participating countries and entities as either Net Donors/Providers (NP) or Net Recipients (NR) of capacity, within the project's regional structure.

26. The proposed project would support implementation of the CP by creating a competent pool of regional technical personnel and practitioners, establishing high quality biological and socio-economic databases for biosafety applications, and methodologies for biosafety environmental risk management and socio-economic impact analysis using as models five targeted crops – maize, potato, cassava, cotton and rice – selected based on: (a) economic importance in the region and local socio-economic needs; (b) centers of biodiversity or sexually-compatible wild/weedy relatives for all of them in the region; (c) the relative commercial weight of crops developed by the private and public sectors, respectively; (d) the need for collaboration on knowledge generation and gaps in smart breeding for output traits (mostly private sector) versus input traits (public sector); and (e) the potential implications for local and regional biodiversity, in particular the role of small farmers as key players for creating and maintaining diversity for most of the crops selected.

Documentations, databases, methodologies and systems/programs generated by the project would be based on adaptation of existing knowledge and of certain data generated from research with the model crops addressing specific needs of developing countries in centers of crop biodiversity in LAC. The main capacity building initiative of the project is the creation of this multi-country competent human resource pool.

27. ***Proposed Working Arrangements:*** The project will strengthen and consolidate the technical capacity of participating countries' key biosafety institutions (Ministries of Agriculture, Environment and Health, and other relevant agencies – depending on the country) as reflected in and consistent with, their national development plans and strategies, laws and policies. The project will generate lessons on how to initiate or implement a multi-country and cooperation coordination mechanism in biosafety, including through existing organizations, inter alia, scientific and technical training and the enhancement of technological capacities hereby ensuring compliance with the CP while gaining efficiencies in risk assessment and management, avoiding duplication among countries, and channeling scarce resources and efforts to specific regional needs and priorities.

28. To achieve this, the project will work in an integrated way through a consortium of partner countries and their respective National Coordinating Agencies (NCs), building institutional alliances with their respective participating entities to leverage complementary skills required in assessing and managing transgenic crops, as prerequisite for an informed decision on the fate prior to their potential release into the environment. Each National Coordinating Agency will engage other national, competent entities to ensure high standard inter-disciplinary competencies in LMO technology, as needed. The consortium approach provides an opportunity to increase biosafety knowledge and exchange information and experiences among countries at different levels of engagement with biodiversity and biosafety issues, while providing a forum to share knowledge and technical expertise generated by the various project activities. This multi-country project will complement and build on the experiences of ongoing GEF-funded biosafety projects in Colombia and outside the region in India, from other Bank-supported agriculture and rural development projects, from the development of Biosafety Clearing House (BCH) facilities in the LAC region, and from biosafety efforts by other agencies such as the Inter-American Development Bank (IDB), UNEP and other organizations (Annex Tables 1.1 and 1.2).

29. ***Institutional Overview for Implementation:*** The International Center for Tropical Agriculture (CIAT) is both project grant partner and implementing agency, with the international and regional reputation and well-established technical and convening capacity for the proposed multi-country project. CIAT will serve as regional coordinator and collaborate directly with national-level agencies in the four partner countries selected as National Coordinators by their corresponding GEF focal points: CNPMA (Environment Research Center, EMBRAPA, Brazil); Alexander von Humboldt Institute (affiliated with the Ministry of Environment, Colombia); CIBCM (University of Costa Rica); and CONAM (Ministry of Environment, Peru). A Project Management Committee (PMC) comprising CIAT representatives and the designated National Coordinators will supervise the project. The implications of biotechnology and biosafety cross sectors and boundaries; no single ministry/entity can be solely responsible for decision-making on biosafety issues. Further, capacity development must be sustainable. The most efficient institutional framework, and the one likely to be achieved more rapidly, entails upgrading the skills and knowledge of existing technical and other personnel through training and information sharing among prominent, specialist entities and proactive communication of findings to the broader sphere of interests. As mentioned above, all four country partners have National Coordinators with complementary competencies needed to comply with the CP. Country contacts relative strengths and needs are summarized below and in Table 1.4 and Annex 6.

30. ***Brazil:*** The Brazilian Agricultural Research Corporation (EMBRAPA - Empresa Brasileira de Pesquisas Agropecuarias) through its Genetic Resources and Biotechnology Research Center (Cenargen), Environment Research Center (CNPMA) and Food and Technology Research Center (CTAA) and collaborators, has the expertise, premium facilities and the know-how to conduct food/feed safety (laboratory and field evaluations) and Intellectual Property Rights (IPR) analysis, which meet international standards, and initiated a National initiative on biosafety capacity building with the aid of GMO ERA project (Switzerland). EMBRAPA had contributed with members for the National Biosafety Technical Council for several years. However, capacity-building is needed in biosafety planning and monitoring, and regional interaction mechanisms to improve socio-economic, risk-benefit analysis (Annex 6 and Table 6.1).

31. ***Colombia:*** The Alexander von Humboldt Institute has outstanding facilities and capacity to establish biodiversity database systems<sup>22</sup>, maintains the Biodiversity Clearing House and coordinates the ongoing GEF/World Bank biosafety project. The Colombian Institute of Agriculture (ICA) has expertise in conducting risk assessment of transgenic crops on non-target organisms. These two institutions give support to the National Biosafety Committee in technical advice for the biosafety decision making process. The Colombian system would gain from more systematic, broader analysis

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<sup>22</sup> Setting up of the national database is currently funded through GEF World Bank project

of biosafety risk assessment and management, and from training of key technical institutions/personnel in risk-benefit impact analysis.

32. **Costa Rica:** The Centro de Investigación en Biología Celular y Molecular (CIBCM) of the University of Costa Rica UCR), has experience in plant genetic engineering, mapping and molecular description of wild and weedy relatives of crops, gene flow analysis, and analytical methods for food safety analysis. The Instituto Nacional de Biodiversidad (INBio) has specific capacity in the definition and recording of its native biodiversity to promote its sustainable use, it has a department of bio-prospection and inventory, specialized in GIS, The Centro de Investigación en Desarrollo Sostenible (CIEDES-UCR) has a laboratory of geographic information system as a tool for the management of natural resources and to study interaction between human activities and the environment. The Instituto de Investigación en Ciencias Económicas (IICE-UCR) promotes and develops research in the areas of economy and social sciences in Costa Rica. This institute has expertise in performing socio-economic studies in different research areas and in performing pools in different subjects. Risk assessment and management are key elements which the project would address. Proinnova-UCR has international experts on IPR; however biotechnology is a new area that will be straightened with this project. The Biotechnology Management Office of the Ministry of Agriculture and Livestock (GB-MAG) and the National Technical Commission of Biosafety (CTNB) are biotechnology and biosafety authorities granting permits for activities related to LMOs and in charge of monitoring and surveillance of these activities. Risk assessment and management are key weaknesses which the project would address.

33. **Peru:** While biosafety capacity is modest in Peru, it is a key country in the region for its biodiversity of important food crops and presence of wild relatives. The Consejo Nacional del Ambiente (CONAM), national authority provide coordination on biosafety among the competent national authorities and other sectors, in coordination with the International Potato Center (CIP) and with the collaboration of the Instituto de Biotecnología (IBT) of the Universidad Nacional Agraria, La Molina who serves as technical advisor on biosafety to the Competent National Authority, and the Instituto Nacional de Investigación y Extensión Agraria (INIEA) with a mandate to evaluate and decide on GMOs in agriculture, has the capacity to set up effective capacity building programs in biosafety. CIP offers leadership and up-to-date experience on generation and testing of transgenic potatoes and sweetpotato, biosafety issues concerning potato and sweetpotato, gene flow analysis in potato, assessment, maintenance and management of potato biodiversity, and potato GMO related socio-economic analysis (Annex 6, Table 6.1).

**Table 1.1: Status of Biosafety in Participating Countries**

Country	Initiation	Legal Framework	Revised Version	Problems of Implementation
<b>BRAZIL</b>	1988: First seminar on Biosafety	1995: First National Biosafety Law (8.974)	2005: New National Biosafety Law (11.105)	Bioinformatics to support database management. Surveillance and oversight training for Ministerial personnel. Checklist for risk analysis of animal and microbes.
<b>COLOMBIA</b>	1992-93: ICA Reorganization and creation of CORPOICA	1994: Regulatory and operational analysis of OGM (decree 1847) 1995: Regulations for introduction of food derived from LMOs (decree 3075) 1998: National Technical Committee on plant biosafety 2001: National Technical Council of animal biosafety 2002: Biosafety Law 740 2005: Decree 4525	2005: Revised legal framework with a new decree governing the implementation of Cartagena Protocol and Focal Points	Differing interpretations of the biosafety legal framework within government.  Need strengthened technical capacity to perform risk assessment and management analysis as required by law.  Insufficient coverage of Biosafety issues at the local level.
<b>COSTA RICA</b>	1990: National Technical Commission on Biosafety (CTNB) created under Phytosanitary Protection Law and its regulations.	1991: GMO activities initiated only for the productions of seeds by private companies and public institutions for research purposes.	NA	Need to improve the technical capacity on assessment and  Biosafety management. Cartagena protocol was accepted by the Foreign Affairs Committee at the Congress in 2002.
<b>PERU</b>	1990. Draft Guidelines on Biotechnology and Biosafety: Ministry of Agriculture, CIP and ISNAR  1995: First meeting on Biosafety	Approved the internal regulations for biotechnology and biosafety in CIP for experimentation and use of GMOs – <i>El Peruano, Lima, 23 de Octubre de 1994</i>  Law for prevention of risks derived from the use of biotechnology – Congress of the Republic of Peru, Lima, May 12, 1999  National Environment Committee (Consejo Nacional del Ambiente) – a technical biosafety group created – <i>El Peruano, Lima 26 Julio de 1999,</i>  2005: National Biosafety Framework established	2006: New legislation to promote modern biotechnology currently before Congress.	Operational rules for competent national authorities in process of approval.

NA: Not available.

**Table 1.2: Eligibility of Participating Countries for GEF**

Country	Parties to Cartagena Protocol	Convention on Biological Diversity	Eligibility for GEF Funding Categories
<b>Brazil</b>	Entry into force	Entry into force, <i>Ratified on 28 February, 1994</i>	Eligible for CBD & CP funding
<b>Colombia</b>	Entry into force	Entry into force, Ratified on 28 November 1994	Eligible for CBD & CP funding
<b>Costa Rica</b>	Ratified	Entry into force, Ratified on 26 August 1994	Eligible for NBF development and National BCH establishment only
<b>Peru</b>	Entry into force	Entry into force, Ratified on 7 June 1993	Eligible for NBF development, CBD & CP funding

CP – Cartagena Protocol; CBD – Convention on Biological Diversity; BCH – Biosafety Clearing House

**Table 1.3: Participating Country Status - Cartagena Protocol on Biosafety**

Country	Signing	Accession	Ratification	Entry into Force
Brazil	--	24 Nov. 2003	--	22 Feb. 2004
Colombia	24 May 2000	--	20 May 2003	11 Sep. 2003
Costa Rica	24 May 2000	--	17 July 2006	--
Peru	24 May 2000	--	14 April 2004	13 July 2004

**Table 1.4. Comparative Country Strengths/Needs in Biosafety**

COUNTRIES	STRENGTHS		NEEDS	
	Legal Framework	Technical Capacity	Legal Framework	Technical Capacity
<b>BRAZIL</b>	New Biosafety Framework in line with implementing Cartagena Protocol	Qualified human resources and Centers of Excellence with interdisciplinary competences	Lack of mechanisms in place for implementation of the new law	Regional interaction to improve the risk assessment and management that it already in place  Planning and monitoring analysis  Regional interaction to improve socio-economic analysis
<b>COLOMBIA</b>	A revised legal Framework with a new decree governing for implementation of Cartagena Protocol and Focal Points	Experience on Biosafety evaluation for research and commercial GMOs deployment	--	Research in risk assessment and risk management  Generation of applicable biosafety knowledge  Research/training in food safety and socio-economic impact
<b>COSTA RICA</b>	A Legal Framework in relation to Environmental Safety and Genetic Resources A Legal Framework in relation to Environmental Safety in agriculture	Qualified human resources and Centers of Excellence with interdisciplinary competences including GIS,	No food safety regulation  No legal framework that protects the IPR derived form bio-	Training in risk assessment and management  Generation of applied Biosafety knowledge  Training in food safety and socio-economic impact

	and Genetic Resources (Biodiversity Law)	biological sciences and gene flow analysis	technological innovation	assessment, public awareness & IPR
<b>PERU</b>	National Biosafety Framework almost in place	Limited human resource capacity available for Biosafety assessments  Strong collaboration with IARC and ARI	Mechanisms in place for the full implementation of the national biosafety law in process of approval	Imperative need for training in risk assessment and risk management  Generation of applied Biosafety knowledge  Training in food safety, socio-economic impact assessment, public awareness & IPR

## Annex 2: Major Related Projects Financed by the Bank and/or other Agencies

### LATIN AMERICA: Regional Capacity-Building in Biosafety

Sector Issue	Project	Latest Supervision	
		PSR Rating	
		Implement. Progress (IP)	Develop. Objective (DO)
<b>Bank Financed: Agriculture/Rural Development</b>			
Colombia: To change the agricultural research culture of Colombia in accordance with Government policies on decentralization of technological development and privatization of Colombian agriculture with emphasis on transfer of agricultural technologies to small farmers.	<i>Name:</i> Agriculture Technology Development Project <i>Loan No.:</i> 3871 (PRONATTA) <i>Status:</i> Closed <i>Project ID:</i> P006880; <i>IBRD US\$51 million;</i> <i>Project Total Cost:</i> US\$74 million; <i>Board Approval:</i> April 20, 1995; <i>Effectiveness:</i> August 25, 1995; <i>Closing Date:</i> December 31, 2003; <i>ICR:</i> June 15, 2004; <i>TTL:</i> Matthew McMahon; <i>Implementing agency:</i> MARD	<b>S</b>	<b>S</b>
Colombia: To generate income, create employment and promote social cohesion of poor rural communities in an economically and environmentally sustainable manner through the development and implementation of a demand-driven, productive partnership scheme with the private sector.	<i>Name:</i> Alianzas Productivas (Productive Partnerships Support Project). <i>Loan No.:</i> 70970; <i>Status:</i> Active; <i>Project ID:</i> P041642; <i>IBRD:</i> US\$32 million <i>Project Total Cost:</i> US\$52.32 million; <i>Board Approval:</i> January 22, 2002; <i>Effectiveness:</i> May 15, 2002; <i>Closing Date:</i> September 30, 2007; <i>TTL:</i> Pierre Werbrouck; <i>Implementing agency:</i> MARD	<b>S</b>	<b>S</b>
Colombia: To develop a replicable methodology for the establishment and operation of a Peasant Enterprise Zone, PEZ ( <i>Zona de Reserva Campesina</i> ), in areas of colonization affected by violence and illicit activities, and of prototype actions to protect rainforest reserves and nearby indigenous territories.	<i>Name:</i> Zonas de Reserva Campesina – LIL (Peasant Enterprise Zones Development Project). <i>Loan No.:</i> 4367; <i>Status:</i> Closed; <i>Project ID:</i> P053243 <i>IBRD:</i> US\$5 million <i>Project Total Cost:</i> US\$6.5 million; <i>Board Approval:</i> 06/15/1998; <i>Effectiveness:</i> 09/30/1998; <i>Closing Date:</i> December 31, 2003; <i>TTL:</i> Natalia Gomez; <i>Implementing agency:</i> MARD	<b>S</b>	<b>S</b>
Colombia: To contribute to the development objective of the Foundation to Conserve the Biological and Cultural Diversity of the Sierra Nevada and to use its natural resources in a sustainable manner, developing and testing in at least three regions a participatory methodology and operational mechanisms for promoting sustainable management of production and natural systems.	<i>Name:</i> Sierra Nevada de Santa Marta-LIL (Sierra Nevada Sustainable Development Project). <i>Loan No.</i> 7016; <i>Status:</i> Active; <i>Project ID:</i> P057326; <i>IBRD:</i> US\$5 million <i>Project Total Cost:</i> US\$6.25 million <i>Board Approval:</i> May 2, 2000; <i>Effectiveness:</i> August 16, 2000; <i>Closing Date:</i> December 15, 2005; <i>TTL:</i> Maria Elena Castro-Munoz; <i>Implementing agency:</i> National Planning Department-Fundación Pro Sierra Nevada	<b>S</b>	<b>S</b>

<p>Colombia: To improve access to quality basic education in rural areas by supporting a decentralized system of educational management, building public-private sector partnerships at the departmental level to manage and finance subprojects and strengthening local planning activities at municipal and institutional levels, supporting the development of social capital, through fostering school-community relationships and introducing appropriate classroom methodologies.</p>	<p><i>Name: Mejoramiento de la Educación Básica Rural (Rural Education Project). APL I; Loan No. 7012; Status: Active; Project ID: P050578; IBRD: US\$20 million Project Total Cost: US\$40 million; Board Approval: April 11, 2000; Effectiveness: December 20, 2000; Closing Date: June 30, 2005; TTL: Carlos Rojas; Implementing agency: Ministry of Education (MEN).</i></p>	<p><b>S</b></p>	<p><b>S</b></p>
<p>Colombia: To develop the operational capacity of the Consortium, the citizens' network and other to reduce poverty and increase peaceful coexistence in the Magdalena Medio Region based on the detailed design and implementation of an ambitious ten-year, community-led, multi-sector development program to support the growing implementation capacity of communities and local authorities.</p>	<p><i>Name: Plan de Paz, Magdalena Medio II – LIL (2nd. Magdalena Medio Regional Development Project). Loan No. 70780; Status: Closed;; Project ID: P057692; IBRD: US\$5 million Project Total Cost: US\$6.35 million Board Approval: September 27, 2001; Effectiveness: November 21, 2001; Closing Date: May 28, 2004; TTL: Elsie Garfield; ICR: November 11, 2004; TTL: Jairo Arboleda; Implementing agency: NPD.</i></p>	<p><b>S</b></p>	<p><b>S</b></p>
<p><b>GEF Grants Administered by the World Bank</b></p>			
<p>To help consolidate Colombia's national capacity for the implementation of the Cartagena Protocol on Biosafety, strengthening the legislative framework and operational mechanisms for biosafety management in Colombia; building capacity and establishing an operational system for risk assessment and monitoring; establishing the biosafety database system and Biosafety Clearinghouse Mechanism; supporting centers of excellence and a network for research, risk assessment, and monitoring; and establishing the Project Coordinating Unit.</p>	<p><i>Name: Capacity building for the implementation of the Cartagena protocol; GEF TF052187; (Medium-size project); US\$1 million (w/PDF A); Status: Active; Project ID.: P077171; Project Total Cost US\$4.478,123 million Executing Agency: Instituto von Humboldt, Ministry of Environment, through the Project Coordinating Unit.</i></p>	<p><b>S</b></p>	<p><b>S</b></p>
<p><b>Other Development Agencies</b></p>			
<p>To support entrepreneurial development of small rural enterprises in an equitable and sustainable manner, providing technical and financial services to strengthen and develop rural businesses</p>	<p><i>Name: Desarrollo Microempresa Rural-PADEMÉR (Rural Micro-enterprise Development Program) Loan No.: I-426-CO; Status: Ongoing; FIDA: US\$16 million (11 million SDR); Project Total Cost: US\$25.95 million Board Approval: Nov. 9, 1996; Responsible agency: MADR</i></p>		

<p>To strengthen the institutional capacity of governmental institutions, community groups, as well as private and nongovernmental organizations in the Pacific coast region of Colombia, leading to sustainable improvement in the living conditions and income levels of the region's population; providing technical and financial support to Government's Pacific Coast regional development program, to strengthen local public, private and nongovernmental institutions, encourage civic awareness and cultivate the skills of community organizations facilitating a more active role in local affairs; provide training in the techniques of land-use planning for sustainable utilization and management of renewable natural resources, improving the quality of, and access to, health care, education, sanitation, rural electrification, telecommunications and transportation, supporting investigation, assessment and dissemination of information regarding sustainable use of renewable natural resources.</p>	<p><i>Name:</i> Plan Pacifico (Pacific Coast Sustainable)  <i>IDB:</i> US\$50 million  <i>Project Cost:</i> US\$71.4 million  <i>Board Approval:</i> July6, 1994;  <i>Closing Date:</i> May 2004;  <i>Executing agency:</i> Local government entities (38 municipalities and four departments), coordinated by the National Planning Ministry (DNP).</p>
<p><b>Organization of American States (OAS)</b>  Strengthen national skills for assessment and management of risks of biotechnology food products, and build public awareness of benefits of these foods in Chile, Colombia and Peru, to promote sustainable use with adequate protection.</p>	<p><i>Name:</i> Biosafety Regulations in Latin America and the Caribbean within the Framework of the International Biosafety Protocol.  <i>OAS:</i> US\$83,000  <i>Executing agency:</i> CamBioTec, Chile (General coordinator)</p>
<p><b>Brazil</b></p>	
<p>To develop and implement Biosafety protocols; to establish a scientific network for interdisciplinary communication; to establish an expedite mechanism for reviewing and identifying methodologies for risk assessment</p>	<p><i>Name:</i> BioSeg 2003-2007  US\$3.5 million  Ministry of Agriculture/Embrapa and the Ministry of Science and Technology/FINEP</p>
<p><b>Colombia</b></p>	
<p>To strength educational and communication in Biosafety</p>	<p><i>Name:</i> Strengthening educational and communication on Biosafety in Colombia 2004-2006  US\$50,000  GTZ/Colombia National University</p>
<p><b>Costa Rica</b></p>	
<p>To revise to National Biosafety Framework of Costa Rica to comply with the Cartagena Protocol</p>	<p><i>Name:</i> Development of a National Biosafety Framework for Costa Rica GEF-UNEP  US\$ 195.000</p>
<p><b>Peru</b></p>	
<p>To Prepare of a National Biosafety Framework in accordance with the relevant provisions of the Cartagena Protocol on Biosafety.</p>	<p><i>Name:</i> Development of the National Biosafety Framework for Peru  UNEP/GEF  US\$ 148.4000</p>
<p>To establish a functional BCH</p>	<p><i>Name:</i> The implementation of BCH  UNEP/GEF in preparation</p>
<p><b>International Center for Tropical Agriculture (CIAT)</b></p>	<p><i>Name:</i> Harvest Plus Biofortification Project  US\$ 25 million</p>
	<p><i>Name:</i> Biofortification Latin American Regional Project  \$ 20 million Canadian Dollars</p>
	<p><i>Name:</i> Tropical White Fly Integrated Pest Management (IPM) Project: US\$ 7 million</p>
	<p><i>Name:</i> Gene Flow Project on Beans and Rice  Euros 1.2 million  1 CGIAR Center, 3 LAC-NARS and 2 ARIs.</p>

\*Development Objective/Implementation Performance Ratings: HS = Highly satisfactory; S = Satisfactory; U = Unsatisfactory; HU = Highly unsatisfactory.

**Annex 3: Results Framework and Monitoring**  
**LATIN AMERICA: Regional Capacity-Building in Biosafety**

<b>Global Environmental Objective</b>	<b>Project Outcome Indicators</b>	<b>Use of Project Outcome Information</b>
<p><b>GEO:</b></p> <p>Strengthened capacity in the four participating countries to implement the Cartagena Protocol (CP) on biosafety. Specifically: strengthened technical capacity in knowledge generation for biosafety risk assessment and management; strengthened biosafety decision-making capacity; and strengthened public awareness on biosafety for communicators</p>	<ul style="list-style-type: none"> <li>• By EOP, at least 80% of participating entities in the project countries have been using the available biosafety risk assessment and risk management strategies and methodologies developed by the project.</li> <li>• By EOP, inter-institutional and inter-country cooperation on biosafety risk assessment among the project countries have improved through diverse mechanisms.</li> <li>• By EOP, biosafety competent authorities in project countries are using the biosafety risk assessment tools and/or information as reference in planning and in making biosafety decisions.</li> </ul>	<ul style="list-style-type: none"> <li>• EOP: Evaluate the project strategy for strengthening country capacity to implement the CP.</li> <li>• EOP: Evaluate effectiveness of project Training Plan for authorities and practitioners.</li> </ul>

<b>Intermediate Outcomes</b>	<b>Intermediate Outcome Indicators</b>	<b>Use of Intermediate Outcome Monitoring</b>
<p><b>Outcome One:</b></p> <p>Strengthened technical capacity of project countries for developing environmental risk assessment, management methodologies, and socio-economic impact assessment methodologies.</p>	<p><b>Outcome One :</b></p> <ul style="list-style-type: none"> <li>• By EOP, at least 80% of participating entities in project countries have used biosafety methodologies and tools developed by the project.</li> <li>• End Y2, at least 8 studies on environmental risk assessments and management, and on socio-economic impact assessments on biosafety have been completed.</li> <li>• End Y2, at least one adapted methodology for socio-economic impact assessments has been developed by the project and is available to project countries.</li> <li>• EOP, management strategies and corresponding operational guidelines to minimize transgene flow and potential effects on non-target organisms have been updated for at least three crops.</li> <li>• EOP, at least 4 databases established for tracking and monitoring gene flow, and for mapping distribution of crop/landrace populations in project countries for targeted crops.</li> </ul>	<p><b>Outcome One :</b></p> <p>Y2-Y3: Plan and initiate systematic use of study results.</p> <p>EOP: Measure progress in formulating standardized methodologies for biosafety risk assessment and management and make needed adjustments.</p> <p>EOP: Assess progress in establishing databases for tracking and monitoring gene flow, and mapping distribution of crop/landrace populations.</p> <p>EOP: Input to project Mid-Term Review</p> <p>EOP: Gauge capacity of national BCH to service biosafety information demands stemming from project activities.</p> <p>EOP: Input to project Implementation Completion Report.</p>
<p><b>Outcome Two:</b></p> <p>Biosafety planning and national biosafety competent authorities' decision-making capacity strengthened</p>	<p><b>Outcome Two :</b></p> <ul style="list-style-type: none"> <li>• EOP, biosafety competent authorities in project countries are incorporating information from biosafety practitioners in the decision making process in the implementation of CP.</li> </ul>	<p><b>Outcome Two :</b></p> <p>Y2: Measure effectiveness of project Training Plan and need for adjustments.</p>

	<ul style="list-style-type: none"> <li>Y2-3, in each project country, biosafety authorities and practitioners trained by experts in biosafety environmental risk assessment and management, and socio-economic impact assessments.</li> </ul>	<p>Y2: Input to Mid-Term Review</p> <p>Y2: Assess extent to which targeted authorities and experts are using standardized socio-economic impact assessment for maize and cotton</p> <p>EOP: Assess extent to which targeted authorities and experts are using standardized risk assessment and management techniques.</p> <p>EOP: Input to project Implementation Completion Report</p>

## Arrangements for Results Monitoring

1. **Monitoring and evaluation system.** A framework for monitoring and evaluation of project outcomes and results will be fully-developed and under implementation by the beginning of the project year 1. It will provide specificity in data collection methodology, levels of monitoring and evaluation activities, data collection and reporting responsibilities, and frequency of M&E activities.

2. **Data collection methodologies.** The M&E framework will collect data to measure project impacts and verify the intermediate outcome and impact indicators. Data collection methodology and impact evaluation will be based on three instruments:

- **Survey:** Survey tools will be used to collect data for project monitoring and evaluation. To provide a baseline, a survey of biosafety competent authorities and practitioners will be carried out at the onset of the project implementation. Among others the baseline survey will provide information about the level of understanding about biosafety risk as it relates to the implementation of CP and capacity needs in each of the participating countries. To assess the project impacts in particular the use project outputs and how the biosafety competent authorities and practitioners, a follow up survey will be carried out at the end of the project.

- **E-space for discussions on different topics and levels:** To supplement the survey, the project will carry out structured electronic discussions and forums to collect data from project participants. E-discussion could be on a particular topic or theme and could be open or participation with invitation only.

- **Studies and reports:** Selected studies will be carried out to augment the surveys. In addition, sub-project participating entities will be requested to submit regular reports on the implementation and outcomes of sub-projects. These sub-project implementation reports will be submitted to national coordinators who will consolidate and report to CIAT.

3. **M&E activities.** Monitoring activities will be conducted at three levels: (i) sub-project implementation, (ii) impacts, and (iii) project implementation.

(i) **Monitoring sub-project implementation:** Regular reports from participating entities, site visits, regular reports and survey data will provide the information about sub-project implementation. These monitoring reports will highlight any divergence from the objectives of the subprojects and observed intermediate outputs so that CIAT can consider taking corrective action or discussing possible modifications to subproject activities with the participating entities.

(ii) **Monitoring impacts:** The studies, sub-project reports and survey results will provide basis for assessing the effectiveness of subproject outputs and final outcomes that can be attributed to project interventions. Intermediate indicators and targets defined in the Results Framework will be used to assess the outputs of subprojects as well as the project outcomes. The impact monitoring will be carried out by CIAT and its country partners as an ongoing project activity.

(iii) **Monitoring project implementation:** The World Bank has conducted an assessment prior to appraisal to identify any gaps in the fiduciary standards and staffing of CIAT and to provide recommendations for strengthening those standards. In addition, a desk assessment will be carried out to identify any gaps in the fiduciary standards of national coordinating agencies and to provide recommendations for strengthening those standards. Standard financial and procurement audits will be performed by independent, specialized firms on an annual basis. World Bank supervision missions will review the technical and fiduciary aspects every six months or more often if necessary.

4. **Semiannual and midterm evaluation.** The Bank will conduct semiannual supervision missions to evaluate progress in implementing project activities. Supervision missions will draw lessons learned to-date and provide guidance to the project team. In addition, the Bank, together with external reviewers and key stakeholders, will conduct a midterm evaluation of project execution. The midterm review will focus on (i) progress in achieving project outcomes, (ii) institutional arrangements for project implementation, (iii) effectiveness and suitability of the monitoring and evaluation system, and (iv) the project implementation plan and general project operation manual. The midterm review will be conducted no later than two years after the first disbursement of the project.

5. **Final evaluation.** A final evaluation will be conducted in the last semester of project execution. The key objectives of the final evaluation will be to (i) assess attainment of the expected project results and (ii) draw lessons learned.

## Proposed Arrangements for Results Monitoring

Project Outcome Indicators	Baseline	Target Values			Data Collection and Reporting		
		YR1	YR2	YR3	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
<b>Global Environmental Objective</b>							
By EOP, at least 80% of participating entities in the project countries have been using the available biosafety risk assessment and risk management strategies and methodologies developed by the project.	Un-adapted and non-specific strategies and methodologies are available.	Establish the multi-country thematic work plan for the development of biosafety risk assessment and risk management strategies and methodologies.  Adaptation of at least one strategy and methodology on biosafety risk assessment and risk management per country is initiated.	At least 40% of participating entities in the project countries have been using the available biosafety risk assessment and risk management strategies and methodologies developed by the project.	At least 80% of participating entities in the project countries have been using the available biosafety risk assessment and risk management strategies and methodologies developed by the project.	Semi-annual progress reports; MTR reports; and EOP reports.	Databases, maps publications, websites and surveys.	National Coordinators (NC);  Regional Thematic Coordinators (RTC);  CIAT Project Management Team.
By EOP, inter-institutional and inter-country cooperation on biosafety risk assessment among the project countries have improved through diverse mechanisms.	All four countries have biosafety frameworks in place and have ratified the CP.  Lack of institutional mechanisms for inter-country collaboration.	Interactive mechanisms such as meetings and scholarships (individualized trainings, internships and exchange visits) have been designed by each project country.  Interactive mechanisms implemented: - 30% of scholarships have been granted;	Interactive mechanisms implemented: - 70% of scholarships have been granted; - one interactive meeting organized.	Interactive mechanisms implemented: - 100% of scholarships have been granted; - two interactive meetings organized.	Semi-annual progress reports; MTR reports; and EOP reports.	Minutes of events, scholar reports, and websites.	National Coordinators (NC);  Regional Thematic Coordinators (RTC);  CIAT Project Management Team.
By EOP, biosafety competent authorities in project countries are using the biosafety risk assessment tools and/or information as reference in	Biosafety Centers of Excellence exist in all project countries.  Limited			Biosafety competent authorities in project countries are using the biosafety risk assessment tools and/or information as reference	MTR and EOP reports.	Surveys.	National Coordinators (NC);  Regional Thematic

planning and in making biosafety decisions.	information available to biosafety competent authorities in planning and making biosafety decisions.			in planning and in making biosafety decisions.			Coordinators (RTC); CIAT Project Management Team.
<b>Intermediate Outcome Indicators</b>							
<b>Component 1:</b>  By EOP, at least 80% of participating entities in project countries have used biosafety methodologies and tools developed by the project.	0% (Adapted and organized specific tools and methodologies are not available.)	Data methodologies and tools compiled and reviewed based on existing knowledge adapted to LAC conditions.  Adaptation of at least one tool and methodology on biosafety risk assessment and risk management per country is initiated.	At least 40% of participating entities in project countries have used biosafety methodologies and tools developed by the project.	At least 80% of participating entities in project countries have used biosafety methodologies and tools developed by the project.	Semi-annual progress reports; MTR reports; and EOP reports.	Databases, maps publications, websites and surveys.	National Coordinators (NC); Regional Thematic Coordinators (RTC); CIAT Project Management Team.
At least 8 studies on environmental risk assessments and management, and on socio-economic impact assessments on biosafety have been completed.	The needed background information on biological and socio-economic components is available to initiate the studies.	At least, 8 studies initiated.	At least, 8 studies completed		Semi-annual progress reports; MTR reports; and EOP reports.	Databases, maps publications and websites.	National Coordinators (NC); Regional Thematic Coordinators (RTC); CIAT Project Management Team.
An adapted methodology for socio-economic impact assessments has been developed by the project and is available to project countries.	The needed background information on socio-economic components is available to develop the methodology.	An adapted methodology is being developed.	An adapted methodology is developed and available to project countries.		Semi-annual progress reports; MTR reports; and EOP reports.	Databases, maps publications and websites.	National Coordinators (NC); Regional Thematic Coordinators (RTC);

							CIAT Project Management Team.
Management strategies and corresponding operational guidelines to minimize transgene flow and potential effects on non-target organisms have been updated for at least three crops.	Some needed background information on biological elements is available to initiate the strategies and guidelines.	Gap analysis to identify any missing background information.  Define and initiate a work plan to fill the gap.	Complete the implementation of work plan.	Management strategies and corresponding operational guidelines to minimize transgene flow and potential effects on non-target organisms have been updated for at least three crops.	Semi-annual progress reports; MTR reports; and EOP reports.	Reports, publications and websites.	National Coordinators (NC);  Regional Thematic Coordinators (RTC);  CIAT Project Management Team.
EOP, at least 4 databases established for tracking and monitoring gene flow, and for mapping distribution of crop/landrace populations in project countries for targeted crops.	Databases do not exist for tracking and monitoring gene flow, and for mapping distribution of crop/landrace populations in project countries for targeted crops.	Diagnostic by crop and country is completed.  Database design is completed including data methodologies and strategies compiled and reviewed based on existing knowledge adapted to project country conditions.  Work plan and distribution of responsibilities by crop and country is established.  Development of the database is underway.	At least 2 databases established for tracking and monitoring gene flow, and for mapping distribution of crop/landrace populations in project countries for targeted crops.	At least 4 databases established for tracking and monitoring gene flow, and for mapping distribution of crop/landrace populations in project countries for targeted crops.	Semi-annual progress reports; MTR reports; and EOP reports.	Reports, databases and maps.	National Coordinators (NC);  Regional Thematic Coordinators (RTC);  CIAT Project Management Team.
<b>Component 2:</b>  EOP, biosafety competent authorities in project countries are incorporating information from biosafety practitioners in the decision making process in the implementation of CP.	Lack and/or uneven level of biosafety knowledge required to make an informed decision.		Biosafety competent authorities at least in two project countries are incorporating information from biosafety practitioners in the decision making process in the implementation of CP.	Biosafety competent authorities in project countries are incorporating information from biosafety practitioners in the decision making process in the implementation of CP.	Semi-annual progress reports; MTR reports; and EOP reports.	Databases, maps publications, websites and surveys.	National Coordinators (NC);  Regional Thematic Coordinators (RTC);  CIAT Project

							Management Team.
In each project country, biosafety competent authorities and practitioners trained by experts in biosafety environmental risk assessment and management, and socio-economic impact assessments.	Some training activities have been carried out but vary by country.		In each project country, at least 50% of biosafety competent authorities and practitioners trained by experts in biosafety environmental risk assessment and management, and socio-economic impact assessments.	In each project country, biosafety competent authorities and practitioners trained by experts in biosafety environmental risk assessment and management, and socio-economic impact assessments.	Semi-annual progress reports; MTR reports; and EOP reports.	List of participants, agendas, training programs, reports and websites.	National Coordinators (NC);  Regional Thematic Coordinators (RTC);  CIAT Project Management Team.

## **Annex 4: Detailed Project Description**

### **LATIN AMERICA: Regional Capacity-Building in Biosafety**

#### **Project Global Environment Objective**

1. The Global Environmental Objective of the project is to strengthen capacity in the four participating countries to implement the Cartagena Protocol (CP) on biosafety.
2. To achieve this objective, the project will strengthen and consolidate partner countries' national technical capacity to safely transfer, handle and use living modified organisms resulting from modern biotechnology without adverse effects on the conservation and sustainable use of biological diversity, in line with biosafety priorities reflected in respective national development plans, national laws and policies, and other legal instruments for biosafety. The project will use complementary capacity already existing in National Biosafety Agencies and prominent entities in the participating countries and establish a sustainable, collaborative, regional effort in thematic areas related to biosafety. The outcome is expected to be a more uniform and higher standard of technical capacity across the region derived from pooling best practices in biosafety from these mega-diverse countries.

#### **Strategic Overview**

3. Principal criteria for selecting Brazil, Colombia, Costa Rica, and Peru were: (a) high levels of biodiversity of important crops and their wild relatives; (b) geographic distribution of wild/weedy relatives of economically important crops; (c) levels of development and implementation of biosafety policies (including active GEF-funded projects and World Bank projects in agriculture and rural development); (d) complementary expertise related to implementing the Cartagena Protocol; and (e) potential future strategic role they could have on biosafety in their respective sub-regions.
4. The four partner countries had already established functioning, legal biosafety frameworks for the regulation, management and deployment of LMOs, prior to implementing the Cartagena Protocol. All have ratified the Convention on Biological Diversity and the Cartagena Protocol. The discussion on the biosafety of LMOs commenced in all participating countries by the late 1980s (Brazil) or the early 1990s (Colombia, Costa Rica, and Peru). However, each country has diverse needs and bottlenecks at the technical, legal, policy and public awareness level that prevent full implementation of the CP. In the many consultations leading up to project formulation, the participating countries consistently identified the importance of strengthening technical capacity for comprehensive risk assessment and management of LMOs including environmental, socio-economic, and food/feed safety aspects.
5. Policy makers and regulators, practitioners and other stakeholders in all four countries need an objective, efficient decision-making process for assessing the biosafety of biotechnology products, drawing on international biosafety experience<sup>23</sup> as well as on country-specific analysis of local needs in tropical environments characterized by the presence of high crop biodiversity for staple crops. Such objective decision-making processes must be consistent with national environmental, agricultural, social and innovation policies. This requires analytical tools to support decision-making based on rational, risk- and socio-economic impact assessment. Finally, knowledge dissemination and public awareness-building are essential components of any biosafety policy or strategy. They require an inclusive approach to communication, including capacity building among the core participants in the biotechnology/biosafety domain (government agencies/authorities, agricultural sciences professionals, crop developers and users,

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<sup>23</sup> More than 20,000 experimental field releases and over 30 large scale commercial product releases have been approved under national biosafety regulations worldwide, a large majority in temperate regions in developed countries.

and biotech practitioners) to improve their capacity to dialogue for an informed public debate about both biotechnology and biosafety. To recognize the fact that knowledge dissemination and public awareness will most likely be relevant for most of the region, these activities have been brought together in a separate more regionally oriented MSP.

6. Effective capacity building can be achieved by using and disseminating the experience of key national institutions in each country, strengthened through collaboration with the IARC and Centers of Excellence. Capacity-building expertise in certain themes will also be leveraged through the contributions of specialized institutions outside the project region<sup>24</sup>, to ensure that in-country capacity development remains fully abreast of international developments in this field. The project will thus initiate its programmed components/activities by exploiting the complementary capacity already existing in the region and specific institutions, strengthening it, and establishing a coordinated, collaborative set of mechanisms for longer-term utilization as a reference for other countries in Latin America. This regional approach, building on existing capacity and programs in each country, is potentially more sustainable, cost effective and rapid in its impact and is expected to lead to a regional biosafety platform supporting implementation of the CP.

7. The project will not finance the planting of transgenic crops nor will be requesting/processing licenses for planting them. Neither will the project have any third party agreements related to the potential use of project data vis a vis the use of LMOs. Not all studies proposed will require transgenics. But where available, the collection of data from existing transgenic plots will enhance the effectiveness of the information generated. Regarding the latter, the plots used are already grown on experimental and/or commercial basis in project countries, in compliance with National Biosafety regulations. The project would collect data from these existing fields to adapt methodologies and management strategies to the country and crop-specific situations. Details are included in the Annex 4. Section on the context of field trials.

### **Project Management and Components**

8. As detailed in Annex 6, the project will be supervised by a Project Management Committee (PMC), comprising key representatives of CIAT and a National Coordinator (NC) from each country. The role of the NCs will be to ensure that institutions from each country participate as agreed in the different components and sub-components under their responsibility. Each component will include participants from all countries, some as Net Providers (NP) of information, and some as Net Receivers (NR), indicative of their relative strengths, experience and track record in any particular activity. Each component will have a Regional Thematic Coordinator (RTC) whose task is to ensure delivery of the results for a project component or sub-component.

9. The project will address key biosafety issues through the following components: (a) Strengthening technical capacity in knowledge generation for biosafety risk assessment and management; and (b) Strengthening biosafety decision-making capacity, as outlined below in Annex 4 Table 1.

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<sup>24</sup> For example, India has a leading project on gene flow in rice, and South Africa has a standard-setting stakeholder association (AfricaBio) for public awareness and public communication.

**Annex 4: Table 1**

<b>COMPONENT 1. STRENGTHENING TECHNICAL CAPACITY IN KNOWLEDGE GENERATION FOR BIOSAFETY RISK ASSESSMENT AND MANAGEMENT</b>					
	<b>BRAZIL</b>	<b>COLOMBIA</b>	<b>COSTA RICA</b>	<b>PERU</b>	<b>CIAT</b>
<b>C.1.1 STRENGTHENING OF TECHNICAL CAPACITY FOR ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT</b>					
<b>C.1.1.1 Assessment and monitoring of gene flow in crop-biodiversity</b>					
Compilation and generation of baseline data for tracking and monitoring of gene introgression/persistence of novel traits in crop-biodiversity	<b>C, M, P</b>	<b>C, M</b>	<b>A,R</b>	<b>M, P</b>	<b>C, M, R</b>
Generation and use of GIS-referenced databases for mapping distribution of crop/ landraces/weedy/ wild populations and gene flow analysis	<b>C, P</b>	<b>A, C, M</b>	<b>R</b>	<b>M, P</b>	<b>C, M, R, A</b>
Adaptation and regional standardization of methodology for large scale monitoring of gene flow	<b>A, M</b>	<b>A, M</b>	<b>R</b>	<b>M, P</b>	<b>M, R, A</b>
Development of crop management strategies and operation guidelines to minimize transgene flow	<b>M, P</b>	<b>A, M</b>	<b>R</b>	<b>M, P</b>	<b>C, R</b>
<b>C.1.1.2 Assessment and monitoring of potential effects on non-crop (non-target) organisms</b>					
Adaptation and regional standardization of methodology for evaluating effects on non-target organism	<b>A, M, P</b>	<b>A</b>	<b>A</b>	<b>A, P</b>	<b>A</b>
Development of crop management strategies and operation guidelines to minimize effects on non-crop (non-target) organisms	<b>A, M, P</b>	<b>A</b>	<b>A</b>	<b>A, P</b>	<b>A</b>
<b>C.1.2 STRENGTHENING OF TECHNICAL CAPACITY FOR SOCIO-ECONOMIC IMPACT ASSESSMENT</b>					
	<b>BRAZIL</b>	<b>COLOMBIA</b>	<b>COSTA RICA</b>	<b>PERU</b>	<b>CIAT</b>
Adaptation of methods and tools for socio-economic impact assessment of LMOs in the tropics	<b>A, M, P</b>	<b>A,M</b>	<b>A, R</b>	<b>M, P</b>	<b>A, M</b>
Development of analytical skills for analysis of potential socio-economic impacts of LMOs in centers of crop-diversity	<b>A, M, P</b>	<b>A,M</b>	<b>A, R</b>	<b>M, P</b>	<b>A, M, R</b>

<b>Net Receiver (nr)</b>	<b>Net Provider/ Receiver</b>	<b>Net Provider</b>	C = cassava; M = maize; P = potato; R = rice; A = cotton
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**Component 1: Strengthening technical capacity in knowledge generation for biosafety risk assessment and management (Total: US\$10.61 of which US\$3.68 million is from GEF)**

10. The objective of this component is to strengthen technical capacity of the four partners, using selected target crops (cassava, cotton, maize, potato and rice)<sup>25</sup> as models for developing environmental risk assessment and management, and socio-economic impact analysis methodologies adapted to tropical conditions, in center of origin and diversity of major crops in the Americas. This objective will be achieved by financing small, demand-driven subprojects proposed and implemented by Participating Entities. A subproject is a set of activities with the objective of providing scientific information in the context of the project. A subproject may consist of field work, lab work, surveys, compilation, and analysis and testing of data and training. The types of eligible activities will be consistent with the GEF Strategy for Financing Biosafety and are described in detail in the project's Operational Manual (OM). Subproject selection will be principally based on the following evaluation criteria:

- The capacity of the implementing agencies to implement the sub-project
- The demonstrated successful collaboration of implementing agencies with the competent biosafety authorities
- The collaboration between environment and agriculture community in the subproject
- The extent to which the subproject produces information on the effect of LMOs on biodiversity
- The contribution to filling gaps in the knowledge and skill base for regulatory decision making processes
- The extent to which the subproject enhances inter-institutional capacity exchange at the national and multi-country level

11. These activities will be grouped in two sub-components: (a) strengthening technical capacity for environmental risk assessment and management; and (b) strengthening technical capacity for socio-economic impact assessment. The technical output of these activities will be widely disseminated in accessible form, through activities programmed under project Components 2 and 3. Principal outcomes of financed activities are expected to include: (a) Studies on environmental risk-benefit assessment and management and on socio-economic impact assessment, conducted on selected project crops (cassava, maize, potato, rice and cotton), as described in Annex 4 table 3 in the four countries; (b) Standardized methodology established and available for socio-economic assessment of the five selected crops, across the four countries; (c) Databases established for tracking and monitoring gene flow, and for mapping distribution of crop/landrace populations of the four selected crops, available to competent authorities and specialist practitioners in targeted country institutions; (d) Crop management strategies and operational guidelines to minimize transgene flow and potential effects on non-target organisms, five selected crops; (e) Technical, science-based toolkits (one per crop) on risk-benefit assessment and management, prepared and distributed by the four countries; and (f) Project-generated knowledge (studies, methodologies) downloaded to depositaries and websites, country, regional (CIAT) and national BCHs of participating countries (see Annex 3).

*(a) Strengthening technical capacity for environmental risk assessment and management.*

12. This sub-component will develop baseline information, tools, strategies and methodologies for assessment, monitoring and management of gene flow in crop-biodiversity (using the five project crops as models), and the potential effects on non-crop (non-target) organisms.

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<sup>25</sup> These crops were chosen because they all are economically important in the region. The centres of diversity of maize, cassava and potato are also in the region. GM Cotton is already grown by farmers in the region, thereby offering the best opportunity for ex-post analyses and for monitoring methodology testing. Several GM versions of rice are under development for potential release in the region.

13. In activities related to gene flow, national coordinators (NCs) in the project countries and CIAT will pool resources and best practices to assess and monitor the gene flow in crop-biodiversity by conducting the following activities: (a) compilation and generation of baseline data for tracking and monitoring gene introgression/persistence of novel traits in crop-biodiversity; (b) generation and testing the use of GIS-referenced databases for mapping the distribution of crop/landraces/weedy/wild populations, and gene flow analysis; (c) adaptation and regional standardization of methodology for large scale monitoring of gene flow; and (d) development of crop management strategies and operational guidelines to minimize trans-gene flow.

14. In activities related to the potential effects on non-crop (non-target) organisms, NCs and CIAT will carry out the following: (a) adaptation and regional standardization of methodologies for evaluating effects on non-target organisms; and (b) development of crop management strategies and operational guidelines to minimize effects on non-crop (non-target) organisms; and (c) national coordination.

15. Information on the genetic structure of native biodiversity of the project model crops is available in the literature, but this knowledge is dispersed. Compiling this information into a useful database will be an output of this component. A GIS-referenced database is useful for determining the distribution of wild and weedy relatives as an input in biosafety decision-making and in post-commercial release monitoring.

16. *Gene Flow*: Several studies of gene flow and introgression for various crop plants have been conducted and reported in the ecological literature (e.g. Ellstrand, 2003; den Nijs, et al., 2004), but standardized methodologies have not been established. Large scale screening studies for gene flow are relatively few because of the difficulty of conducting them. Even less known is the fate of transgene escape which is crucial to determine harm to biodiversity. Similarly, there is a lack of standardized methodologies for non-target organisms. Monitoring of LMO genes resulting from large scale (commercial) crop releases is possible using standard diagnostic kits which are commercially available<sup>26</sup>. The project will include review of literature available and will test, optimize and standardize methodologies, i.e., molecular base and others (as needed) for large scale screening of gene flow into crop/wild/ weedy relatives of selected crops.

17. For decisions about field trials of transgenic crops, regions where risk of crossing to wild relatives is minimal will be identified with support of GIS-based mapping populations. For decisions about commercial release, the extent to which transgenic crops might interact with their sexually compatible wild relatives would be one of the considerations in a risk assessment/decision. A searchable database containing this basic information will be produced and will be a valuable tool in environmental risk assessment and for disseminating best practice.

18. Many different management strategies have been used, and several new ones are being developed, to prevent or restrict gene flow from transgenic plants. Widely used strategies today include spatial and temporal isolation, and the use of male sterility. Based on information available, the project will assess theoretically the feasibility, effectiveness, and the likelihood of using these tools for gene flow control in the five target crops in the environmental and agricultural context of the participating countries. It is not intended to do experimental work with these strategies, but rather to validate approaches. The current status of such strategies in each crop and their ability to work in the field (as proven by scientific literature) will be assessed.

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<sup>26</sup> Standardized testing tools for almost all GMOs which have been released commercially are available from specialized companies such as GeneScan (<http://www.gmotesting.com/>), Strategic Diagnostics (<http://www.sdix.com/>) and others.

19. *Non-target organisms*: The subject of unintended effects on non-target organisms will be studied by using existing insect-, herbicide- and (if available) disease-resistant crops. The study will include a review of the considerable literature already available on the subject, and will design a few limited but well targeted experiments which extend the evaluation to the high-biodiversity environments in the participating countries, with the goal of providing decision-makers with locally developed and relevant information. Main work will experiment with existing commercial released crops already approved by the corresponding Biosafety National authorities of corresponding countries and in compliance with the national regulations.

20. Operational guidelines exist for the safe conduct of field trials as well as for assessment of environmental risk, but all of them were developed outside Latin America. Perhaps the oldest and most widely used is the publication, “Recombinant DNA Safety Considerations”, (OECD, 1986). Since then, various countries including the United States (USDA, 1991); Australia in 2002 ([www.biosafety.gov.cn/-image20010518/5060.pdf](http://www.biosafety.gov.cn/-image20010518/5060.pdf)); Canada in 2000 (<http://www.agbios.com/docroot/articles/01-317-002.pdf>); and <http://www.agbios.com/docroot/articles/01-317-001.pdf>); New Zeland in 2000 (ERMA, <http://www.ermanz.ov.nz>) and EU in 2002 (<http://www.europa.eu.int/eurlex/pri/en/oi/dat/2001/110620010417e-n00010038.pdf>), among others, have developed guidelines for conducting field trials. Other sources also include those developed by the public sector scientists with expertise in environmental science, as well as biotechnology and socioeconomics (GMO ERA – Environmental Risk Assessment Project [http://www.gmo\\_guidelines.info/](http://www.gmo_guidelines.info/)). This project is identifying and developing scientific methodologies and tools that can be used for environmental risk assessment and management of transgenic plants, in accordance with the Cartagena Protocol on Biosafety and other international agreements. Some of the partners participating in this project are also members of GMO-ERA. These alliances will facilitate the feedback between the two projects. The GMO ERA project phase out at the end of 2007.

21. For countries likely to take the lead in and be responsible for activities under Component 1, see Annex 4, Table 4.1 and Annex 6, Table 6.1.

*(b) Strengthening of technical capacity for socio-economic impact assessment*

22. The objective of this sub-component stems directly from provisions of the Cartagena Protocol, to improve understanding of the socio-economic impacts associated with the use of transgenic crops in tropical Latin America and to improve the capacity of countries in the region to carry out assessments of the effects of LMOs.

23. The partners from the project countries and CIAT will adapt existing methods and tools for socio-economic impact assessment of LMOs to the specific environment of the tropics.

24. It is unlikely that a standard socio-economic assessment methodology will be appropriate for all countries given that the decisions countries face will differ depending on the specific LMO product and the social, economic and environmental characteristics of the country (Falck-Zepeda et al, 2003). Nonetheless, countries with similar characteristics will benefit from having standard methods for carrying out impact assessments that will allow them to share results, especially among countries with limited human and financial resources in this field.

25. The potential socio-economic impacts of genetic modifications of the five project crops in the four target countries will also be analyzed. Specific types of impacts to be assessed will be determined in collaboration with the national level project participants. Differences by agro-ecological zone and by farmer and consumer characteristics will also be taken into account. The results per se, will be valuable inputs to policy-making, and will also serve as examples of how assessments can be done and as a

baseline against which to monitor future progress in the case of LMO deployment. Many of the methods for assessing these LMO impacts is not substantially different from those used to assess other agricultural technologies and can therefore be applied directly if data are available.

26. In some cases, it may be necessary to develop or adapt existing methods. The need for methods development will be determined via consultations with partners. Some data used for assessing socio-economic impacts of LMOs are the same as those used for assessing conventional agricultural technologies, but in many cases, especially those involving environmental impacts or consumer acceptance issues, additional data may be required. The project will compile inventories of the types of data and information necessary for socio-economic analysis of LMOs, and to the extent possible, actual data sets that partners and others can use. For environmental and economic analysis, spatially disaggregated data will be most appropriate. During the course of the project, the capacity of national partners to conduct such analyses will be built both via training and via participation in the analyses.

27. The technical and methodological products/use of Component 1 are likely to include: (a) publication in refereed papers and on-line availability through CIAT project Website (linked to national Websites) of regional baseline data for tracking and monitoring gene introgression/persistence of novel traits in relevant crop biodiversity; (b) GIS databases and maps showing distribution of crop/landrace/weedy/wild populations sent to national competent authorities in partner countries and available on Project Website; (c) standardized methodologies for large-scale monitoring of gene flow in the project crops, with guidelines for practitioners and competent authorities validated and published; (d) publication of crop management strategies and operational guidelines to minimize transgene flow; (e) operating guidelines and manuals for the non-target component of risk assessments produced and made available to practitioners and competent authorities in project countries and the wider LAC region; and (f) by end-project, information depositories and websites in country, regional (CIAT) and national Biosafety Clearing House (BCHs) of project countries will have available for reference some 60% of the documents with knowledge generated by the project. (Annex 1, Table 1(a); Annex 3; Annex 6, Table 6.1).

28. **Context of Field Studies:** The project does not promote the use of LMOs. The proposed project is technical in nature, multi-country in scope and would generate standardized, knowledge-based mechanisms and methodologies for environmental risk and socio-economic impact assessments (as per Article 15 (Risk assessment) and 16 (Risk management) of the Cartagena Protocol)<sup>27</sup>.

29. All project countries have transgenic crops (both project selected model crops and others) grown under experimental containment conditions, field studies (except Peru), and/or commercial plantings (except Peru) (Table 4.2a). All project countries also have access to transgenic crops of economic importance and most of them are currently being used. The status of experimental and/or on-farm/commercial cultivation of model crops of this project in each participating country is listed in Table 4.2b. The transgenic traits of importance that will be studied by the project and are in commercial use or are presently being studied under controlled conditions are given in Table 4.3.

30. Not all studies proposed by the project will require transgenic crops. But where available, the collection of data from existing transgenic plots will enhance the effectiveness of the information generated. Regarding the latter, the plots used are already grown on experimental and/or commercial basis in project countries, in compliance with National Biosafety regulations. The project would collect data from these existing fields to adapt methodologies and management strategies to the country and

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<sup>27</sup> The objective of risk assessment under the Cartagena protocol is to identify and evaluate the potential adverse effects of living modified organisms (LMOs) on the conservation and sustainable use of biological diversity in the likely potential receiving environment. Risk assessment is, inter alia, used by competent authorities to make informed decisions regarding LMOs.

crop-specific situations. The project outputs related to potential use of the project data vis-à-vis the use of LMOs will also be made available in the public domain.

**Table 4.2a.** Project selected Model Crops and other Transgenic Crops grown/tested in the Project Countries

Project Country/Institute	Model Crops (non-GMO)	Transgenic Crops presently grown/tested
Brazil	Cassava, Maize, Potato, and Cotton	Soybean, Wheat, Maize, Rice, Sorghum, Ground nut, Barley, Cocoa-tree, Banana, Common beans, Potato, Sugar cane, Tobacco, Tomato, Papaya, Passion fruit, and Cotton
Peru	Maize, Potato, and Cotton	Potato
Colombia	Cassava, Maize, and Cotton	Banana, Plantain, Tree tomato, Sugar cane, Passion fruit, Potato, Coffee, Lulo fruit, and Carnations
Costa Rica	Cotton and Rice	Maize, Banana, and Rice
CIAT	Cassava, Maize, Rice, and Cotton	Rice, Cassava, Common beans, <i>Bracharia</i> , Mango, and Lulo fruit

**Table 4.2b.** Status of experimental and/or field grown/commercial transgenic model crops in the project countries

Country/ Institution	Experimental*	On-Farm/Commercial
Brazil	Maize, Rice, Potato, and Cotton	Cotton
Peru	Potato	None
Colombia	Potato and Maize	Cotton
Costa Rica	Maize and Rice	Cotton
CIAT	Cassava and Rice	None

\* Experimental transgenic crops include containment testing in the greenhouse or under controlled conditions in the field.

**Table 4.3.** Transgenic Traits and the purpose for which such traits will be used by the project

Trait	Gene flow studies	Non-target organisms studies	Socio-economic impact assessments
Bt gene	Yes	Yes	Yes
Herbicide resistance gene	Yes	No	Yes
Quality – starch, low cyanide,	Not yet available; may become available during the project life	No	Ex-ante analysis
Abiotic stress tolerance – e.g., stay green trait	Not yet available; may become available during the project life	No	Ex-ante analysis
Flowering traits	Not yet available	No	Ex-ante analysis
Bt + herbicide resistance	Yes	Yes	Ex-ante analysis
Virus resistance	Yes	No	Yes

31. The project will not finance the planting of transgenic crops nor will be requesting/processing licenses for planting them. Neither will the project have any third party agreements related to the potential use of project data vis-à-vis the use of LMOs. In short, no new transgenic crops/plots will be planted for project purposes.

32. **The types and circumstances for conducting field studies, where transgenic crops will be used:** The project would collect data from these existing fields to adapt methodologies and management strategies to the country and crop-specific situations. GMO crops that will be used are cotton (in Brazil, Colombia and Costa Rica) and perhaps maize in Colombia. No GMO crop testing will be done in Peru.

33. *Gene flow in crop/biodiversity and effects on non-crop (non-target) organisms:* Studies in relation to field work would include: (i) confirmation of the existence of crop and wild relatives distribution in potential experimental or data collection sites; (ii) sample collections and corresponding analyses in the laboratory (to test the presence of the genetically modified genes, to assess the composition, frequency and distribution of the non-target organisms) from areas where transgenic crops and wild relatives already co-exist independently of this project; (iii) field visits to GMO field trials already established independent of this project for training purposes.

34. *Socio-economic impact assessment:* Studies would include field visits and surveys for data collection from the farmers and potential consumers, end-users, local markets, other relevant extension service personnel, and corresponding public service (biosafety-specific) authorities and technical personnel.

35. **The types and circumstances for conducting field studies with conventional crops will be used:** All project crops (maize, rice, cassava, cotton, and potato) will be subjected to field studies as indicated below in all project countries.

36. *Gene flow in crop/biodiversity and effects on non-crop (non-target) organisms:* Studies in relation to field work would include: (i) confirmation of the existence of crop and wild relatives distribution including GIS mapping in potential experimental or data collection sites; (ii) specific field trials planted to assess gene flow within crop and from crop to crop biodiversity; including sample collections and corresponding laboratory studies (to test the presence of crop-specific genes in biodiversity; to assess the composition, and frequency and distribution of the non-target organisms) from areas where transgenic crops and wild relatives already co-exist independently of this project; (iii) demonstration field trials for training purposes including workshops and various media events organized by the project.

37. *Socio-economic impact assessment:* Studies would include field visits and surveys for data collection from the farmers and potential consumers, end-users, local markets, other relevant extension service personnel, and corresponding public service (biosafety-specific) authorities and technical personnel. Data collection may also include collecting samples from their crop field/products for further testing in the laboratory.

***Component 2: Strengthening biosafety decision-making capacity (Total: US\$1.39 million of which US\$0.32 million is from GEF)***

38. The objective of this component is to implement Articles 10 (decision procedure) and 22 (capacity building) of the Cartagena Protocol, specifically their emphasis on regional approaches, specifically their emphasis on regional approaches. It will build biosafety capacity for decision-making entities (competent authorities) and for practitioners (i.e. public and private research community), through participatory scientific and technical training on risk assessment and risk management. This is important because most if not all current materials available on these subjects are externally-sourced, not generated from regional/local biotechnology and biosafety experiences and conditions.

39. The project will finance: (a) training in environmental risk assessment and risk management for competent authorities and practitioners; and (b) training in socio-economic impact assessment for competent authorities and practitioners.

40. A key feature of sub-component (a) is that it will allow all core participants in the regulatory process to work on the basis of standardized, tested procedures and similar level of technical expertise. Core participants include the implementing bodies of national biosafety frameworks (i.e. national

biosafety committees) and the biotechnology R&D community (i.e. transgenic crop developers, plant breeders, other relevant agricultural science professionals, especially those working in public sector research). A high quality decision-making process on the biosafety aspects of environmental release of transgenic crops is only possible if all these groups are equally proficient in the principles and application of biosafety assessment and biosafety management. More uniform and higher quality participation will also bolster confidence in the system on the part of other stakeholders (e.g., consumers, environmental interests).

41. Training under this component will be provided at the regional, national and sub-national levels, exploiting the expertise derived from this and other GEF-funded projects. Special attention will be given to strengthening wherever possible, international cooperation and regional standard-setting. The project will identify the key decision-makers and practitioners to be trained, initially by projecting best existing practice, and subsequently by using systematically the outcomes of Component 1.

42. Training on socio-economic impact assessment (sub-component (b)) will strengthen the capacity for and promote a common approach to, this type of assessment. The project will evaluate existing materials, identify gaps and propose course development plans, produce, test, evaluate and disseminate courses deemed through review to be of high quality. Key decision-makers and practitioners working with socio-economic issues will be contacted and introduced to the objectives of the project to secure their participation in training courses. The project will also provide them with the outcomes of the socio-economic analysis component (1.2) of the project. See Table 1(b) for responsible partners/entities.

43. Key outcomes are expected to include: (a) Training Plans and course materials developed for four countries; (b) Targeted authorities and experts trained by specialists in biosafety and environmental risk assessment and management; (c) Targeted authorities and experts trained by specialists in biosafety socio-economic impact assessment; (see Annex 3).

**Annex 4: Table 4**

<b>COMPONENT 2. STRENGTHENING BIOSAFETY DECISION-MAKING CAPACITY</b>					
	<b>BRAZIL</b>	<b>COLOMBIA</b>	<b>COSTA RICA</b>	<b>PERU</b>	<b>CIAT</b>
<b>C.2.1. Training on environmental risk assessment, management for competent authorities and practitioners</b>					
<b>C.2.2. Training on socio-economic impact assessment for competent authorities and practitioners</b>					

Net Receiver (nr)

Net Provider/  
Receiver

Net Provider

## Annex 4. Table 5

### Components by Financier (US\$ million)

COMPONENTS	GEF		CIAT		BRAZIL		COLOMBIA		COSTA RICA		PERU		TOTAL	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
<b>1. Strengthening Technical Capacity in Knowledge Generation for Biosafety Risk Assessment and Management</b>	<b>3.68</b>	<b>31</b>	<b>1.27</b>	<b>11</b>	<b>3.10</b>	<b>26</b>	<b>1.10</b>	<b>9</b>	<b>1.35</b>	<b>11</b>	<b>0.10</b>	<b>1</b>	<b>10.61</b>	<b>88</b>
1.A Strengthening of Technical Capacity for Environmental Risk Assessment and Management	3.21	27	1.27	11	2.60	22	1.06	9	1.35	11	0.10	1	9.59	80
1.B Strengthening of Technical Capacity for Socioeconomic Impact Assessment	0.47	4	0.00	0	0.50	4	0.05	0	0.00	0	0.00	0	1.02	8
<b>2. Strengthening Biosafety Decision Making Capacity</b>	<b>0.32</b>	<b>3</b>	<b>0.00</b>	<b>0</b>	<b>0.84</b>	<b>7</b>	<b>0.04</b>	<b>0</b>	<b>0.15</b>	<b>1</b>	<b>0.04</b>	<b>0</b>	<b>1.39</b>	<b>12</b>
<b>TOTAL PROJECT COSTS</b>	<b>4.00</b>	<b>33</b>	<b>1.27</b>	<b>11</b>	<b>3.94</b>	<b>33</b>	<b>1.15</b>	<b>9</b>	<b>1.5</b>	<b>12</b>	<b>0.14</b>	<b>1</b>	<b>12.0</b>	<b>100</b>

**Annex 5: Project Costs**  
**Latin America: Regional Capacity-Building in Biosafety**

**Table 5: Summary of Estimated Project Costs (US\$'million)**

Project Components	Local	Foreign	Total
<b>1. Strengthening Technical Capacity in Knowledge Generation for Biosafety Risk Assessment and Management</b>			
1.A Strengthening of Technical Capacity for Environmental Risk Assessment and Management	7.9	1.5	9.4
1.B. Strengthening of Technical Capacity for Socioeconomic Impact Assessment	0.8	0.2	1.0
<b>Subtotal:</b>	<b>8.7</b>	<b>1.7</b>	<b>10.4</b>
<b>2. Strengthening Biosafety Decision-Making Capacity</b>			
	<b>1.3</b>	<b>0.1</b>	<b>1.4</b>
<b>Total Baseline Costs</b>	<b>10.0</b>	<b>1.8</b>	<b>11.8</b>
Physical Contingencies	0.1	0.0	0.1
Price Contingencies	0.1	0.0	0.1
<b>Total Project Costs</b>	<b>10.2</b>	<b>1.8</b>	<b>12.0</b>

<sup>1</sup>Identifiable taxes and duties are US\$0.9 m, and the total project cost, net of taxes, is US\$11.1 m. Therefore, the share of project cost net of taxes is 92.7 percent.

**Annex 6: Implementation Arrangements**  
**Latin America: Regional Capacity-Building in Biosafety**

1. The Implementation Arrangement annex is divided into two parts – project’s implementation arrangement and a summary of an institutional analysis conducted during project preparation.

**A. *Implementation Arrangement: An Overview***

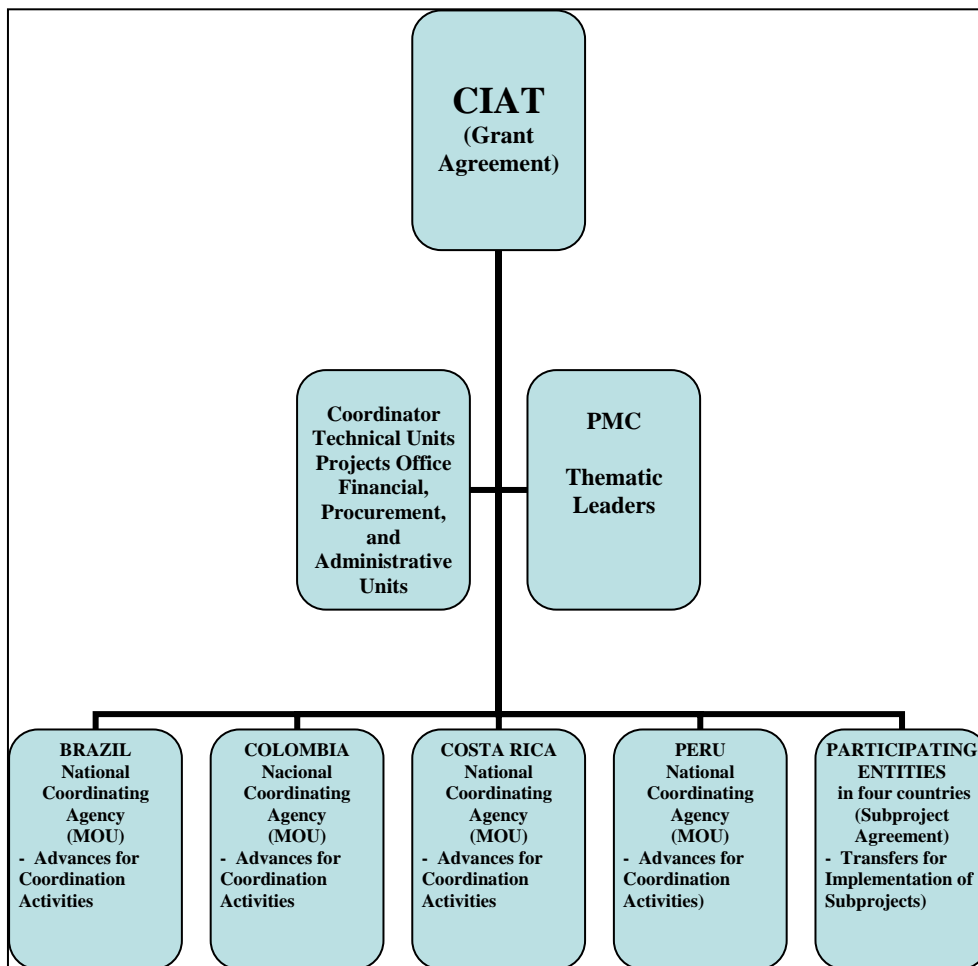
<b>Implementing Agency:</b>	CIAT (International Center for Tropical Agriculture)
<b>National Coordinating Agencies:</b>	<b>Brazil</b> –EMBRAPA (Environment Research Center) <b>Colombia</b> - The Institute von Humboldt <b>Costa Rica</b> - University of Costa Rica <b>Peru</b> –CONAM (National Environmental Council)
<b>National Coordinators:</b>	Representatives of each National Coordinating Agencies
<b>PMC:</b>	Project Management Committee that will be comprised of the National Coordinators of each country and CIAT and that will be responsible for review and approval of all work plans, approval and resource allocation for subprojects, supervision and monitoring of project activities.
<b>Thematic Leaders:</b>	Technical advisor to PMC and National Coordinating Agencies on the project specialized thematic areas of components.
<b>External Reviewers:</b>	Experts hired by CIAT for independent evaluation of subprojects and recommendations for subprojects approval of PMC.
<b>Participating Entities:</b>	Scientific institutions from the partner countries that will formulate and prepare a subproject proposal and will implement the subproject once approved.
<b>Subproject:</b>	Subproject is a set of activities to be implemented by a Participating Entity with the objective of providing scientific information in the context of the project. A subproject may consist of field work, lab work, surveys, compilation, and analysis and testing of data and training. Expenditures to be financed under these subprojects may include agricultural inputs and services, field equipment, field tools, computer equipment and software, furniture, small lab equipment, lab materials and supplies, lab testing services, research fellowships, and training.

**Project Coordination**

2. CIAT will be responsible for project coordination, monitoring project progress, preparation of planning materials, administrative support, budget preparation, managing project financial accounts, and for ensuring that project activities are sustainable.

3. CIAT will carry out the day-to-day coordination of the project through a Project Coordinator, aided by CIAT Projects Office and its existing Administrative, Financial, Procurement and Human Resources Units. CIAT will, among other things, act as the overall Project signatory in all agreements with participating entities regarding subprojects.

**Figure 6.1. Implementation Chart**



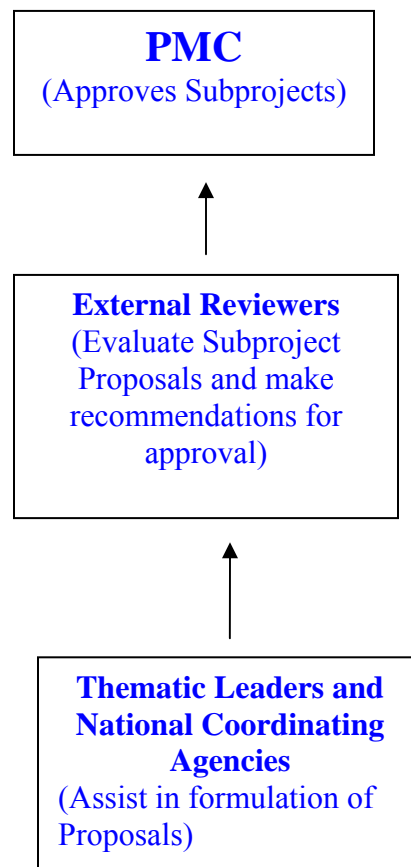
### ***Project Oversight***

4. Project technical oversight will be the responsibility of the Project Management Committee (PMC), to be chaired by the Project Coordinator and to consist of the National Coordinators (NCs) from all four countries. The PMC will be responsible for review and approval of all work plans, resource allocation for subprojects and supervision and monitoring of project activities. The preparation of the annual Work Plan will be an iterative process whereby the Thematic Leaders propose regional plans for their theme, and the NCs review those proposals in light of available resources and national priorities, before submitting them for final approval to the PMC.

### ***Subprojects***

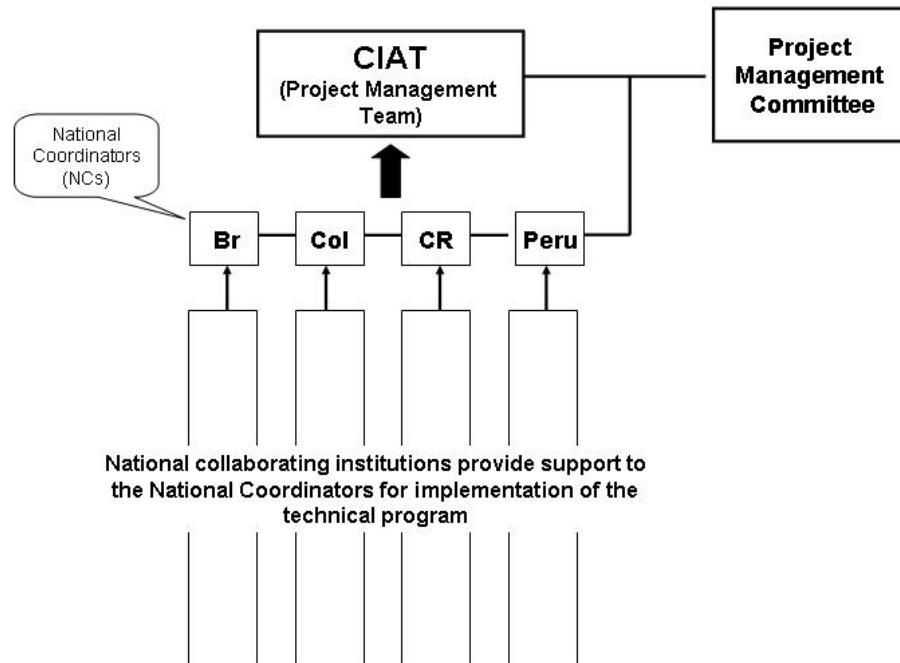
5. The project would finance demand-driven scientific and experimental subprojects proposed by the Participating Entities through a matching fund mechanism. Subprojects would be evaluated and selected in accordance with specific evaluation criteria to be described in the Operational Manual (Figure 6.2). A subproject agreement will be signed between CIAT and the Participating Entities, spelling out the terms and conditions for the funding, execution, ownership, and operation of the approved subprojects. Resources for subproject implementation will be transferred directly from CIAT to the Participating Entities.

**Fig. 6. 2 Subprojects Approval Process**



6. **Project management and technical activities** will be structured as shown in Figure 6.3, consisting the Coordinator at CIAT, NCs, and Thematic Leaders.

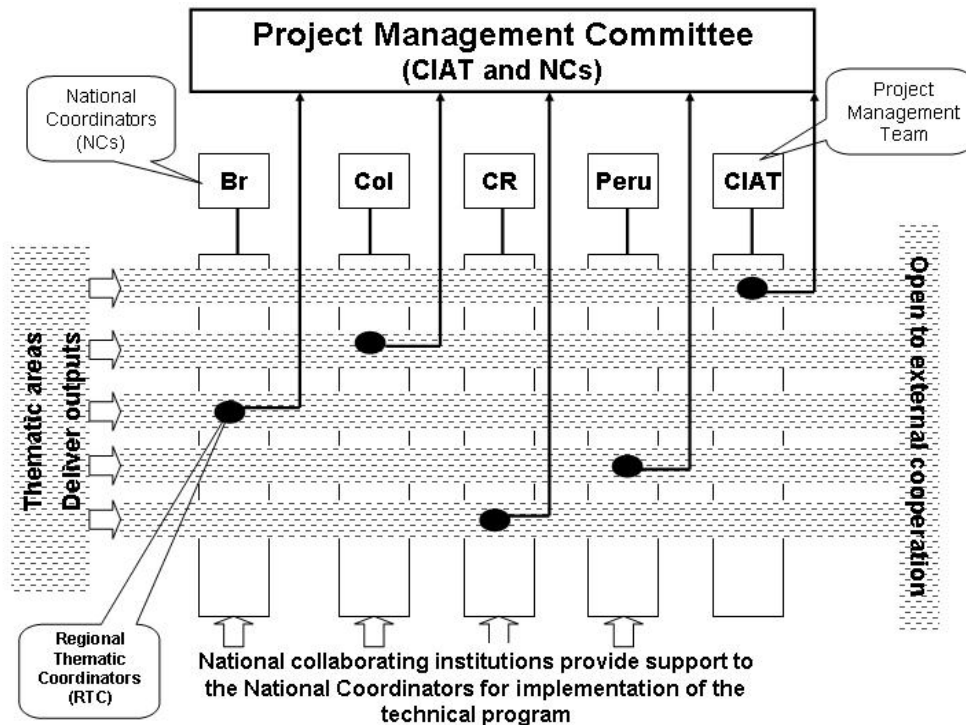
**Figure 6.3: Project Organizational Setup**



7. Each thematic area will have a **Thematic Leader**, chosen from among the four partner countries and CIAT according to their strengths at the outset of project implementation. His/her task is to propose regional work plans in their thematic area, as well as playing an advisory role to the PMC and to the participating countries (see Figure 6.2).

8. The collaborating institutions in each country will select their National Coordinators (NC) on the basis of their expertise and familiarity with the project, particularly during the PDF-B phase. The NC has been endorsed each National GEF Focal Point. Each NC will have an alternate to ensure continuity for project management and technical meetings. The role of the NCs will be to ensure broad stakeholder participation during the execution of the project and the national collaborating executing institutions from each country participant as agreed by the PMC for the different components and sub-components of the project. Each NC is responsible for the delivery of technical reports at the country level, for quality control of the inputs and outputs from participants of that country, and for reporting to CIAT.

**Figure 6.4: Thematic Area Responsibilities**



9. The NCs will participate in the PMC, and be responsible for consolidating their participation in different thematic areas, and for ensuring that their participation in these areas reflects their national needs and strengths. They will also be responsible for monitoring execution of the project and the subprojects within their country and for reporting to the PMC.

10. Countries have identified areas of national strength and areas of need. Since this project is designed to exploit complementary country strengths, country participation in each component or subcomponent as a net knowledge donor/provider, net recipient or a mixture of both is described in a matrix format in Annex 4 to ensure non-duplication of funding for the same activity. Each project component and sub-component will be executed by Participating Entities from all countries, some as Net Providers (NP) of information and/or knowledge; some as Net Receivers (NR) (see Annex 4).

11. CIAT, in addition to assuming technical leadership, project coordination and M&E of all project activities, will be involved in the technical execution of the following project components: (a) strengthening of technical capacity for environmental risk assessment and management; (b) strengthening of technical capacity for socio-economic impact assessment; (c) training in environmental risk assessment and management for competent authorities and practitioners; (d) training in socio-economic impact assessment for competent authorities and practitioners.

***Thematic Areas***

12. Thematic Leaders will report regularly on progress in individual thematic areas to the PMC, thereby allowing the latter to take needed action in a timely manner. The regional work plans will be devised in such a way as to promote intensive cooperation between the country participants.

13. The project will attempt to systematically promote direct horizontal cooperation between national participants in a given thematic area, to maximize regional dissemination of learning and best practice. The thematic area teams will be encouraged to invite expert groups from other countries, both within the region and outside, to join them and share their expertise (provided they bring their own funding to the activity). This open network structure at the level of individual thematic areas is expected to stimulate the search for and dissemination of, best practices in each area..

### ***Information Exchange***

14. CIAT is the depository of all information, technical, management and financial reports at the project level, provided by the NCs and the Thematic Leaders. Each country NC is the depository of all national project information and is responsible for maintaining records. Selected information may be published on a project website, which is hosted by the CIAT website. The project will create a website to facilitate information exchange within the project.

### ***Intellectual Property Rights***

15. The project is expected to deliver a number of outputs which are subject to various types of intellectual property rights (IPR), e.g., authors' rights, patents, trademarks, logos, knowledge, products, methodologies, databases (including  $\beta$ -versions) and other forms of intellectual property. All partners and Participating Entities commit through Letters of Understanding (LOU) to freely and continuously share the outputs on which they have acquired such rights, with all other project partners and funding donors, while respecting authorship. Subcontractors commit to transfer all IPR they may obtain as part of their activities in this project, to the contractor.

### **Implementation Risks**

16. ***Critical Risk:*** Modification in the Cartagena Protocol L and R (liability and redress) agreement in 2007, and five-year review of the CP, in 2008. In the event of problems for implementing the project according to agreed work plans due to changes either of International/National agreements, CIAT in consultation with the PMC and World Bank/GEF would develop alternatives, depending on the status of the CP. Even in the worst-case scenario (without-CP), building country capacity for risk assessment and management, and for socio-economic impact assessment remains vitally important.

17. ***Critical Risk:*** Costa Rica has not ratified the Cartagena Protocol by the onset of project implementation, forcing its withdrawal from the project. Should this occur, CIAT in consultation with the PMC and World Bank/GEF, will reformulate the project work plan and re-distribute deliverables among the remaining partners.

18. ***Critical Risk:*** Loss of focus and coherence. The participation of multiple countries with different interests and capacities to implement the CP, and participation of multiple institutions within each country could make project implementation difficult. To counteract these risks, the following mitigation measurements will be taken: (a) Initial selection of entities will be based on expertise, complementarities and work record of key countries/ institutions as entry points for each country to guarantee project commitment and execution; and (b) Governance arrangements will include a Project Management Committee with representatives from the partner countries to foster common approaches and ensure that participating entities focus on project objectives and outputs.

19. ***Critical Risk:*** Deficient or slower-paced performance of project partners may affect sequencing of project activities and financing. In this event, CIAT in consultation with the PMC and World Bank/GEF would develop an alternative action plan for recouping country performance, and the pace of

project execution. Further, Funds will flow to CIAT in the first instance, not individual countries, permitting control over the flow of funds vis a vis performance.

20. **Critical Risk:** Electoral change in a partner country may result in biotechnology rejection, shifting support away from the project. In this event, CIAT, in consultation with the PMC and World Bank/GEF, would develop a strategy consistent with project activities and objectives, to educate new administration in project goals and methodologies.

## **B. INSTITUTIONAL ANALYSIS**

21. The project's immediate target audience is the national agricultural innovation system (NAIS), component authorities (as defined by the CP) and practitioners, as well as civil society (producer and environmental interests, community organizations) and the broad general public. However in order to facilitate the logistic and communication between the project implementing agency (CIAT) and the countries, main contacts were selected in each case. The National Coordinators are responsible for engaging other national entities to ensure broad stakeholder participation. All four partner countries have Centers of Excellence with pre-existing expertise in biosafety. The relative strengths and needs of the project main country entities acting as contacts are summarized below and are also shown in Table 6.1.

22. **Brazil:** The Environment Research Center (CNPMA) of EMBRAPA - Empresa Brasileira de Pesquisas Agropecuarias, selected as National Coordinator jointly with the Genetic Resources and Biotechnology Research Center (Cenargen), and Food and Technology Research Center (CTAA) and collaborators, has the expertise, premium facilities and the know-how to conduct environmental risk assessment analysis of some target areas, food/feed safety (laboratory and field evaluations), Intellectual Property Rights (IPR) analysis, which meet international standards, and initiated a National initiative on biosafety capacity building with the aid of GMO ERA project (Switzerland) . However, capacity-building is needed in biosafety planning and monitoring, and regional interaction mechanisms to improve socio-economic, risk-benefit analysis (Annex 6 and Table 6.1).

23. **Colombia:** The Institute von Humboldt (National Coordinator) has outstanding facilities and capacity to establish biodiversity database systems<sup>28</sup>, maintains the Biodiversity Clearing House and coordinates the ongoing GEF/World Bank biosafety project. in Colombia, supporting implementation of the Cartagena Protocol. The institute contains a Biodiversity Information System developed jointly with the Ministry of Environment, allowing the informed decision making process with respect to potential release of GMOs in field trials whilst taking into account the geographic distribution of compatible wild relatives highly relevant for gene flow at an ecological level. The Colombian Institute of Agriculture (ICA) is a technical institute in the Ministry of Agriculture conducts and supervises field evaluations, and has expertise in conducting gene flow analysis and risk assessment of transgenic crops on non-target organisms. These two key Institutions serve as technical advisors on biosafety to the government, and give support to the National Biosafety Committee in technical advice for the biosafety decision making process. The Ministry of Agriculture is currently the coordinator of the National Biosafety Council of Colombia, with a mandate to evaluate and decide on GMOs in agriculture. The Colombian system would gain from more systematic, broader analysis of biosafety risk assessment and management, and from training of key technical institutions/personnel in risk-benefit impact analysis.

24. **Costa Rica:** The Centro de Investigación en Biología Celular y Molecular (CIBCM, Center for Molecular and Cellular Biology) of the University of Costa Rica has experience in plant genetic engineering, mapping and molecular characterization of wild and weedy relatives of crops, gene flow analysis and use of food safety analysis methods. The Instituto Nacional de Biodiversidad (INBio,

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<sup>28</sup> Setting up of the national database is currently funded through GEF World Bank project

National Biodiversity Institute) has capacity in the characterization and indexation of its native biodiversity to promote its sustainable use; it has a department of bio-prospection and inventory, specialized on GIS. The Centro de Investigación en Desarrollo Sostenible (CIEDES-UCR) has a laboratory of geographic information system as a tool for the management of natural resources and to study interaction between human activities and the environment. The Instituto de Investigación en Ciencias Económicas (IICE-UCR) promotes and develops research in the areas of economy and social sciences in Costa Rica. This institute has expertise in performing socio-economic studies in different research areas and in performing pools in different subjects. Risk assessment and management are key elements which the project would address. Proinnova-UCR has international experts on IPR; however biotechnology is a new area that will be straightened with this project. The Biotechnology Management Office of the Ministry of Agriculture and Livestock (GB-MAG) and the National Technical Commission of Biosafety (CTNB) are biotechnology and biosafety authorities granting permits for activities related to LMOs and in charge of monitoring and surveillance of these activities. .

25. **Peru:** While biosafety capacity is modest in Peru, it is a key country in the region in terms of its biodiversity of important food crops and presence of wild relatives. The Consejo Nacional del Ambiente (CONAM, National Environment Council), national authority, selected as National Coordinator, provides coordination on biosafety among the competent national authorities and other sectors. CONAM in coordination with the International Potato Center (CIP) and with the collaboration of the Instituto de Biotecnología (IBT) of the Universidad Nacional Agraria, La Molina, who serves as technical advisor on biosafety to the Competent National Authority, and the Instituto Nacional de Investigación e Extensión Agraria (INIEA) with a mandate to evaluate and decide on GMOs in agriculture, have the capacity to set up effective capacity building programs in biosafety. CIP offers leadership and up-to-date experience on generation and testing of transgenic potatoes and sweetpotatoes, plus other Andean root and tuber crops with potential for transgenic traits; biosafety issues concerning potatoes and sweet potatoes, gene flow analysis in potato, assessment, maintenance and management of potato biodiversity, and potato GMO related socio-economic analysis (Annex 6, Table 6.1).

26. **CIAT:** As the project coordinator, CIAT (based in Colombia) offers leadership and convening capacity, as well as up-to-date transgenic technologies (transformation, laboratory and field evaluation), molecular genetic analysis, environmental risk research, impact assessment, geographic information system capacity and facilities, and capacity building on biosafety. CIAT has the international and regional reputation as well as well-established management capacity for a multi-country project such as the one proposed here. A precedent for this type of collaboration managed by CIAT was the GEF Coral Reef Targeted Research and Capacity-Building for Management Project (P078034). Some current multi-donor and regional projects led by CIAT are described in Annex 2. CIAT has a good track record in seeking matching funds from donors for its projects. The coalition of country capacities brings many complementarities to the project, but significant gaps remain in the areas of environmental/food/feed biosafety research, risk assessment, monitoring, tracking and management, ex-ante and ex-post impact assessment, limited human resources trained in biosafety, and effective mechanisms for delivery of information to and engagement of, civil society. The above- mentioned centers will be the project’s port of entry to each country, and will serve as nodal points to extend the expertise at the national level and later, at a sub-regional level.

**Table 6.1. Project Partnership Institutions and their Strengths**

<b>Institution</b>	<b>Strength</b>
<b>Brazil:</b> Environment Research Center (CNPMA); EMBRAPA (Empresa Brasileira de Pesquisas Agropecuarias (Nacional Coordinator); University of Sao Paulo; Ministry of Environment	<ul style="list-style-type: none"> <li>• Genetic engineering technologies</li> <li>• Food/ feed safety analysis</li> <li>• National Biosafety Network in place</li> <li>• IPR analysis.</li> </ul>

<p><b>Contacts:</b></p> <ul style="list-style-type: none"> <li>• Deise Capalbo, Environment Research Center -CNPMA, EMBRAPA (Coordinator)</li> <li>• Maria Jose Amstalden Sampaio - Biosafety and IP policy, EMBRAPA Headquarters.</li> <li>• Luciana di Ciero – ESALO/USP (Escola Superior de Agricultura)</li> </ul>	<ul style="list-style-type: none"> <li>• Cassava: baseline for monitoring introgression, GIS,</li> <li>• Rice: baseline for monitoring introgression, GIS</li> <li>• Maize transgenic field trials</li> <li>• Cotton: transgenic field trials</li> <li>• Transgenic field trials for a broad range of crops</li> <li>• Broad experience in product development in agricultural crops.</li> </ul>
<p><b>Colombia:</b> Institute von Humboldt (National Coordinator), ICA, Ministries of Agriculture and Environment; Corpoica; Conalgodon</p> <p><b>Contacts:</b></p> <ul style="list-style-type: none"> <li>• Maria Claudia Fandino, Institute von Humboldt</li> <li>• Maria Teresa Palacios, Institute von Humboldt</li> </ul> <p>Juan Diego Palacio, Institute von Humboldt</p>	<ul style="list-style-type: none"> <li>• Establishment of biodiversity database expert system.</li> <li>• Environmental risk assessment of LMOs on non-target organisms.</li> <li>• Cotton: non-target effects, socio-economic analysis, transgenic field trials</li> <li>• Cassava: baseline for monitoring introgression</li> <li>• Maize: gene flow analysis, baseline for monitoring, transgenic field trials</li> </ul>
<p><b>Costa Rica:</b> CIBCM (University of Costa Rica)(National Coordinator), INBIO, Ministry of Agriculture and National Biosafety Committee</p> <p><b>Contacts:</b></p> <ul style="list-style-type: none"> <li>• Ana Mercedes Espinoza, Head of the Plant Genetic Engineering Program CIBCM-University of Costa Rica</li> <li>• Ana Sittenfeld. Director International Affairs Office, University of Costa Rica</li> </ul>	<ul style="list-style-type: none"> <li>• Genetic engineering technologies</li> <li>• Mapping, characterization and indexation of native biodiversity</li> <li>• Gene flow analysis</li> <li>• IPR</li> <li>• Rice: baseline for monitoring, GIS, gene flow analysis, transgenic field trials</li> <li>• Approved experimental releases of several other crops (for seed production)</li> </ul>
<p><b>Peru:</b> CONAM (Nacional Coordinator), Instituto de Biotecnología, Universidad Nacional Agraria, La Molina, CIP, Instituto Nacional de Investigaciones y Extensión Agraria (INIEA)</p> <p><b>Contact:</b></p> <ul style="list-style-type: none"> <li>• Enrique N. Fernández-Northcote, Nacional Coordinator on Biosafety, Consejo Nacional del Ambiente (CONAM)</li> <li>• William Roca, Head Genetic Resources. International Potato Center. Lima, Peru</li> <li>• Marc Ghislan, Biotechnology Advisor and Chair Biosafety Committee</li> </ul>	<ul style="list-style-type: none"> <li>• Modest capacity on biosafety.</li> <li>• Key country in the region in terms of level of biodiversity of important food crops and presence of wild relatives.</li> <li>• Potato: baseline for monitoring,</li> </ul> <p>CIP brings:</p> <ul style="list-style-type: none"> <li>• Generation and testing of transgenic potatoes and sweet potatoes</li> <li>• Biosafety issues concerning potato and sweet potato</li> <li>• Gene flow analysis in potato,</li> <li>• Assessment, maintenance and management of potato biodiversity,</li> <li>• Potato LMO related socio-economic analysis.</li> </ul>
<p><b>CIAT</b> (Cali, Colombia)</p> <p><b>Contacts:</b></p> <ul style="list-style-type: none"> <li>• Zaida Lentini, Coordinator Transgenic Research and Chair of Biosafety Committee</li> <li>• Joe Tohme, Head Biotechnology Research Unit.</li> </ul>	<ul style="list-style-type: none"> <li>• Genetic engineering technologies (generation, laboratory and field evaluations).</li> <li>• High through-output genetic molecular analysis (gene detection and expression profiles).</li> <li>• Environmental risk assessment research (gene flow, impact on target/ non-target organisms).</li> <li>• Socio-economic impact assessment analysis.</li> </ul>

	<ul style="list-style-type: none"> <li>• Geographic information system capacity and facilities for various species</li> <li>• Experience related to the Ex-situ collection of cassava and rice in LAC</li> <li>• Capacity building on biosafety for govt. officials, journalists, etc...</li> <li>• Cassava: baseline for monitoring introgression, GIS, socio-economic analysis, transgenic field trials</li> <li>• Rice: gene flow analysis, large scale screening, socio-economic analysis, transgenic field trials</li> <li>• Cotton: non-target effects,</li> <li>• Maize: gene flow analysis, non-target effects</li> </ul>
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### Other Potential Partners

- United States Department of Agriculture (USDA), USDA Animal Plant Health Inspection Service (APHIS), Environmental Protection Agency (EPA), US Food and Drug Administration (FDA),
- Cornell University
- ISU (Iowa State University)
- Health Canada, the Canadian Food Inspection Agency
- CONABIA (Argentina)
- Public Research & Regulations Initiative (PRRI)
- GMO ERA (Switzerland)
- SIGMEA Project (EU)
- The Centre for Integrated Research on Biosafety (INBI) – New Zealand

27. Additional inputs will be sought from GEF/World Bank projects in biosafety in Colombia and India, and from the United Nations Development Program (UNDP) and the United Nations Environment Program (UNEP).

28. Other potential candidate donors include the Rockefeller Foundation, CIDA, EU, DFID, DANIDA, and SDC (Swiss Agency for Development and Corporation), and GTZ. Arrangements are in train to approach these donors. The nature of the project and its strategic objectives make it a good fit with the funding objectives of these institutions. In particular, the components of the activities which have been identified as being outside the scope of GEF funding (e.g. strengthening of food safety evaluation) are a natural fit with the programs of several of these donors. The same is true for the environmental and socio-economic components of the project.

## **Annex 7: Financial Management and Disbursement Arrangements**

### **LATIN AMERICA: Regional Capacity-Building in Biosafety**

#### **Financial Management Assessment**

1. As mentioned in Annex 6, CIAT will be the Implementing Agency of the project. Therefore a Financial Management Assessment (FMA) of CIAT was carried out during preparation of the grant in December, 2006 in accordance with OP/BP 10.02 and Bank Guidelines. The assessment in general concluded that CIAT has sufficient capacity to manage financial matters and administer grant funds.
2. With respect to the National Coordinating Agencies (NCAs) that will receive funds on the basis of advances subject to documentation of eligible expenditures, a desk review of their FM capabilities is underway. As of January 5, 2007, two of the four NCAs provided the information with general satisfactory results for project FM purposes.
3. Still, some project-specific actions have been identified to strengthen the FM capacity of CIAT and enable it to carry out the financial coordination of the subprojects to be implemented by the Participating Entities : 1) before negotiations, detailed flow of funds procedures between CIAT and the National Coordinating Agencies and Participating Entities that will implement subprojects in Brazil, Colombia, Costa Rica and Peru will be prepared; 2) based on the above, CIAT will supervise the use of project funds in the National Coordinating Agencies and the subprojects implemented by the Participating Entities; 3) The financial management chapter of Operational Manual (OM) will be reviewed and approved by the Bank before negotiations, and it should include details related to the above 2 actions.

#### **Organization/Staffing**

4. Details of the project implementation, workflows and staffing have already been described in Annex 6, and overall, there is adequate capacity (numbers, experience and qualifications) in the Finance and Projects Units in CIAT, that is currently managing around 200 projects with an annual budget of US\$45 million.
5. The Financial Unit has 31 staff and its Chief reports directly to the General Director. The Financial Unit is organized in four groups: Budget, Controller/ Accounting, Special Projects and Treasury. These four groups have staff with relevant experience and qualifications.
6. The Financial Unit of CIAT in Colombia will be responsible for maintaining the project financial management arrangements, as follows: (a) request and analyze semiannually project financial information from the National Coordinating Agencies and the Participating Entities that will implement subprojects; (b) prepare withdrawal applications for the Bank's disbursement; (c) prepare the Interim Financial Reports (IFRs); (d) prepare administrative, financial, and accounting procedures necessary to account project transactions and financial information reports; (e) support the project manager in the administrative and inter-institutional coordination process necessary for project implementation; (f) support the requests for contracts, payments, (g) prepare and send to the Bank for no objection, the terms of reference for external audits along with the short list for auditor selection; (h) attend and disseminate the auditors' project requirements and recommendations; (i) support periodic evaluation of the project; (j) practice internal control over all the operations executed in the different components of the project, in particular those related to disbursements, withdrawals from the Designated Account, transfers to the Participating Entities that will implement subprojects and advances to the National Coordinating Agencies; (k) participate in the preparation of the Project Annual Investment Plan, indicating the Bank

financing of each component; and (l) preserve and classify project information to facilitate audits and ex post reviews by the Bank.

### **Internal Control & Internal Auditing**

7. The internal control system of the project would incorporate the policies and procedures established by CIAT in order to achieve the objectives and targets of the project and assure its efficient execution, including incorporation of administrative policies, safeguard of goods, prevention and detection of fraud and errors, complete and timely presentation and registration of financial transactions, and reliable financial information.

8. The procedures for the internal control system would ensure that: (a) the procurement process has followed the procedures established in the grant agreement and the project's operational manual; (b) documents files are reliable and functional; (c) the project is executed according to administrative processes and legally valid norms; (d) the financial and accounting system supplies information according to established accounting norms, is accessible to users, supplies adequate information for audits, and provides reliable and suitable information; (e) the financial accounts are periodically and effectively done and secure systems are used to control the deposits and disbursement of funds; and (f) the Project has established the procedures for planning and monitoring its activities, including procurement of goods, works, and consultants, and the projection of cash flow of the grant and local counterpart funds.

9. Additionally, CIAT has established an Internal Audit office, which is responsible for providing an independent opinion on the CIAT finance information, as well as on its internal control. The Internal Audit directly reports to the CIAT General Director, and among its service users are the several donors, banks, the Board of Directors, the Direction team, the CIAT work team, and the external audit firms. Among its functions, the Internal Audit is expected to assist the Direction in activities, such as establishing, maintaining and monitoring the compliance with the internal control, policies and procedures to ensure accurate finance reports, from an independent and objective point of view. Likewise, it advises the CIAT in pursuing efficiency and economy in the development of its activities, and the effectiveness of its internal control system.

### **External Audit**

10. CIAT is audited by the auditing firm Deloitte and Touche. During the FMA the 2005 audit report was reviewed. The opinion was clean with no major internal control observations. The External audit reviewed financial information of all the projects that CIAT implemented, including grants funds and expenditures of the current and previous years. This year, CIAT will be subject to the 5- year audit that CGIAR (Consultative Group on International Agricultural Research) requires.

11. For the grant, a project specific audit is required: The annual financial statements and eligibility of project expenditures (including funds used under subprojects by the participating entities and by National Coordinating Agencies) would be audited each year by an independent auditing firm (or firms, given the need to review financial execution of subprojects and National Coordinating Agencies in the four countries) hired by CIAT under terms and conditions satisfactory to the "Guidelines: Annual Financial Reporting and Auditing for World Bank-Financed Activities" established by the Bank. Subject to the Bank's prior No Objection, it is likely that the same firm auditing CIAT financial statements will audit the project. The audit report would also include comments on the accuracy and propriety of all expenditures, project management, eligibility for financing in terms of the project's legal agreements, and standards of record keeping and internal controls related to the foregoing. Audit reports and related statements would be submitted to the Bank within six months of the end of the Recipient's fiscal year.

The Bank will send to CIAT the audit Terms of References (TORs) template to be adjusted with the project information and used for selecting the project auditing firm.

### **Written Procedures**

12. Project financial procedures will be described in the OM, which will define the roles and responsibilities of each and every one of the agencies and entities related to the project. The OM will be submitted to the Bank before negotiations and will include among other financial procedures: (a) accounting policies and procedures including basis of accounting; (b) cash flow charts with detailed processes; (c) reporting requirements of the Participating Entities, National Coordinating Agencies and of CIAT (d) formats and instructions of the Interim Financial Reports (IFRs) (e) internal control procedures including criteria and procedures for processing payments; (f) records management, and (g) audit arrangements and TORs.

### **Accounting and Information Systems**

13. As part of the FM assessment, the Bank was informed about the accounting and information systems to be used for the project.

14. According to CIAT, they have developed and acquired an Oracle based Project System that integrates all financial and administrative areas with technical project areas. It is Web based with access in any part of the world, with excellent security and programmed access and control. It is updated in real time so all the information (including financial/accounting info) is managed and controlled on a daily basis. Various project financial reports were reviewed with satisfactory results (e.g., Development of the Prototype Weather Index for Brachiaria Seed, Sustainable Bean Productivity and Confronting Soil Degradation projects). The system allows general and detailed availability of information, having separate accounting balances and accounts for each project. The system is capable of producing statements of sources and uses per project as well as budget execution of expenses. It can also use multicurrency values.

15. This system follows CGIAR (Consultative Group on International Agricultural Research) regulations and seeks to guarantee the effectiveness in the use of any of the donor's funds and the accomplishment of the projects objectives.

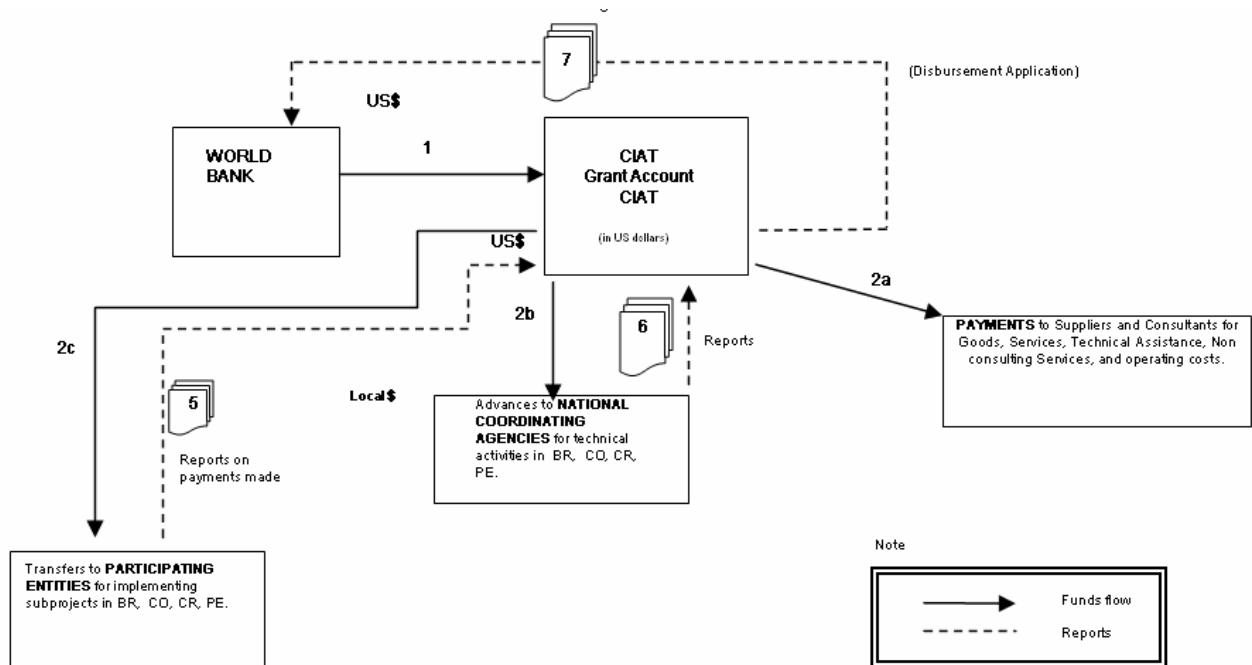
### **Funds Flow and Cash Management**

16. CIAT payments are done both nationally and internationally in an efficient way, not exceeding in average more than 30 days for national suppliers and 15 days for international ones. Even though CIAT does not have a special account for each project as it will require the opening of almost 200 bank accounts, they have good funds management arrangements that allow having separated accounting balances and accounts for each project. CIAT have knowledge and experience of GEF disbursement and reporting mechanism and forms. It has been satisfactory for CIAT the management of the disbursements related to PDF-B grant. The Financial Officer in CIAT will be responsible to sign the withdrawal applications and send the financial information to the Bank. The detailed flow of funds arrangements should be part of the OM and should describe the flow of funds for disbursements to subprojects to be implemented by the Participating Entities and to National Coordinating Agencies.

17. The Bank would disburse the proceeds of the grant into the CIAT's Single Treasury Account in US dollars. CIAT will transfer funds in USD to the Participating Entities that will implement subprojects, based on the approved work program agreed in each subproject agreement. Expenditures will be reported in USD using the monthly average exchange rate, or other justifiable rate subject to the Bank's No

Objection. As noted above, these reports will be subject to CIAT supervision and to the annual external audit. Should instances of ineligibility be brought up by these reports or by Bank supervision, the correlated amounts should be returned to the Designated Account or directly to the Bank.

18. Additionally, CIAT will make a payment in advance to the National Coordinating Agencies for technical supervision purposes, defined by means of a Memorandum of Understanding (MoUs) for each country involved in the project. In order to control the expenditure, a quarterly report on expenses should be submitted in conformity with the MoUs. Expenditures will be reported in USD using the monthly average exchange rate, or other justifiable rate subject to the Bank's No Objection. The funds flow procedures established to control both transfers and advances made to the National Coordinating Agencies and Participating Entities will be included in the Financial Management Chapter of the Operational Manual.



## Financial and Management Reporting

19. CIAT will prepare Interim Financial Reports (IFRs) in US Dollars<sup>29</sup>. These IFRs will be submitted to the Bank semiannually within 45 days after the end of each such period (i.e. by August 15 and February 15). The IFRs will serve as a basis for the annual audited financial statements. The IFRs will cover all project activities, including counterpart funding and will include:

- Consolidated Statement of Sources of Funds and Cumulative Investment by expenditure category;
- Summary Trial Balance by expenditure category and showing the balance of the Designated Account (and Project Account Statement), this report should be issued by the Oracle System;
- Budgeting Control Report by category, which shows the total budget, expenditures, commitments and available budget, this report should be issued by the Oracle System;
- Detail of the commitments by category that should cross with the commitments column in the Budgeting Control Report mentioned above, this report should be issued by the Oracle System;

<sup>29</sup> Interim Financial Reports for World Bank Financed Projects will be included in the OM.

- The Accounting Policies Adopted and Explanatory Notes. The explanatory notes should be presented in a systematic manner with items on the Statement mentioned above. Examples of this information include a summary of fixed assets by category of assets, and a schedule of credit / funds withdrawals; and
- A Management Assertion that Bank funds have been used in accordance with the intended purposes as specified in the relevant World Bank legal agreement.
- The statements needed for report-based disbursements: Expenditures by Category (classified by payments under contracts subject to prior review and other expenditures).

20. Templates for the IFRs should be included in the Financial Management Chapter of Operational Manual.

### **Financial Management Risk**

21. The inherent risk for the execution of subproject grants is substantial, given the multi-country/entity design. The scope of accountability reports, external audits and Bank supervision, as explained in this Annex, is customized with the aim at mitigating this risk, bringing the FM overall risk to a modest level.

### **Disbursement Arrangements**

22. The proposed GEF grant would be disbursed over a period of three years with a Grant Closing Date of May 1, 2011

23. The following table summarizes, by component/subcomponent, the agreement on the amount of the Grant, the use of funds, and when the Bank will recognize expenditures, for the activities to be financed with Grant funds.

\*

Component/subcomponent	Responsible	Description (use)	Amount in USD	Recognition of Expenditures
<b>1. Strengthening Technical Capacity in Knowledge Generation for Biosafety Risk Assessment and Management</b>	CIAT and Participating Entities in Brazil, Colombia, Peru and Costa Rica.	Consultants, training, operating costs of National Coordinators and subprojects of Participating Entities	3.2	Upon payment to consultants and suppliers, and transfers to subprojects grants implemented by the Participating Entities (in tranches) *
1.1 Strengthening Technical Capacity in Environmental Risk Assessment and Management				
1.2 Strengthening Technical Capacity in Socioeconomic Impact Assessment	Idem	Consultants, training, and subprojects of Participating Entities	0.5	Upon payment to consultants and suppliers, and transfers to subprojects grants implemented by Participating Entities (in tranches) *
<b>2. Strengthening Biosafety Decision Making Capacity</b>	Idem	Training (workshops, fellowships, courses, seminars, consultation meetings) for authorities and practitioners on biosafety	0.3	Upon payment to suppliers, consultants, and travel and per diem to trainees
			4.0	

Subproject grant transfers will be documented ex-post through financial reports that should attest to the adequate use of grant funds against the criteria and requirements of the subproject agreements. These reports will be subject to CIAT supervision and to the annual external audit. Should instances of ineligibility be brought up by these reports or by Bank supervision, the correlated amounts should be returned to the Designated Account or directly to the Bank.

24. The proceeds of the grant would be disbursed against eligible expenditures, as indicated in Table A.7.1.

**Table A.7.1: Allocation of Grant Proceeds**

<b>Expenditure Category</b>	<b>Amount in US\$ Million</b>	<b>Financing Percentage</b>
1. Goods, non consulting services, consultant's services, training and operating costs for Component 1	1.7	100
2. Goods, non consulting services, consultant's services, training and operating costs for Component 2	0.3	100
4. Sub-project grants	2.0	100
5. Unallocated	0.2	100
<b>Total</b>	<b>4.0</b>	<b>-</b>

25. **Report-based disbursements and Advances to Designated Account.** The Designated Account will be CIAT's pooled account (to be confirmed by LOA). The account is maintained in USD in the Standard Chartered Bank of New York. As described earlier, CIAT's information system is capable of identifying transactions and balances for specific projects whose funds are deposited into the pool account. The authorized ceiling for advances to the designated account will be approximately USD \$750,000, and CIAT could request such advance as needed once the grant is declared effective.

26. Once the initial deposit has been provided, CIAT will submit subsequent withdrawal applications requests on a semestral basis (although in-between applications may be made if justified by cash flow needs). Withdrawal applications will be supported by the Interim Financial Reports (IFRs) mentioned above (to be confirmed by LOA). All supporting documentation of the IFRs and withdrawal applications should be retained at CIAT's central location (with the exception of subproject grants executed in the four countries) and be available for review by the Bank supervision missions and independent auditors.

27. Direct payments to consultants and service providers, and reimbursement to CIAT for pre-financed Bank's share of project expenditures will be available to the borrower on an as-needed basis. These and other details will be set out in the Disbursement Letter.

### **Financial Management Action Plan**

28. The most important actions that need to be carried out before negotiations are:

1. Confirmation by LOA of the interim financial report (IFR) format, with the components mentioned earlier.
2. Final submittal and review of the Financial Management Chapter of Operational Manual.
3. Submittal and review of the pending FM documentation from the National Coordinating Agencies.

## **Supervision Plan**

29. At least one financial management supervision mission should be conducted each FY to CIAT and each of the National Coordinating Agencies and the four Participating Entities that will implement subprojects grant funds during such FY. A Bank Financial Management Specialist will review the annual audit reports and the semi-annual IFRs.

## Annex 8: Procurement Arrangements

### LATIN AMERICA: Regional Capacity-Building in Biosafety

#### A. General

1. Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, and the provisions stipulated in the Legal Agreement. For each contract to be financed by the Grant, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame are agreed between the Recipient and the Bank in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

2. As described in Annex 6, CIAT is responsible for procurement of the regional activities and have overall responsibility for the supervision of procurement activities and subprojects carried out by Participating Entities in each country.

3. The methods to be used for procurement of goods and services under the project are described below.

- **Procurement of Works.** Civil works are not expected as part of the procurement activities envisioned for the project. If there would be the necessity of conducting civil works, the method to apply would be shopping.
- **Procurement of Goods and Non-Consulting services (including training-related expenses).** Goods and non-consulting services for the project and its subprojects would include *inter alia* field and laboratory equipment and tools; hardware, software and office equipment. Non-consulting services would consist basically of logistics for training and printing services.

Big contract packages are not expected. Therefore, goods and services would be procured under shopping and, in the case of CIAT, its commercial practices acceptable to the Bank as defined in the project's Operations Manual. In case any goods contract package exceeds the amount of US\$50,000, National Competitive Bidding (NCB) procedures would be applied, using a NCB bidding document previously agreed with the Bank.

- **Selection of Consultants.** Consultants would be hired for technical assistance, studies, external audit services, training, and other consulting assignments. Short lists of consulting firms for services estimated to cost less than US\$200,000 equivalent per contract –if any-- may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Contracts for firms may be procured using Quality and Cost Based Selection Method (QCBS). Consultant assignments of specific types as agreed previously with the Bank in the Procurement Plan may be procured with the use of the following selection methods: (i) Selection under a Fixed Budget –SFB--, for works supervision contracts; (ii) Selection Based on Consultants' Qualifications –CQS--, for contracts estimated to cost below US \$200,000 equivalent); and, exceptionally (v) Single Source Selection –SSS-, under the circumstances explained in paragraph 3.9 of the Consultants' Guidelines.

Individual consultants would be selected in accordance to provisions of Section V of the Guidelines to provide technical advisory, project support, monitoring and evaluation services, and other eligible technical assistance and advisory services under the subprojects.

- **Operating Costs.** Operating costs would include reasonable expenditures to carry out the project such as salaries of staff and personnel of the Recipient and any National Coordinating Agency that is not a government agency or a state-owned entity; travel and per diem costs for project staff and personnel officially commissioned under CIAT and the national coordination units; utilities; communications (including Internet connectivity); maintenance of facilities and vehicles; consumable materials and supplies; logistics and project support services and some reasonable expenses incurred by the regional and national coordination units that will have to be previously discussed and approved by the Bank. The procurement capacity assessment showed that CIAT's administrative procedures are acceptable to the Bank for these expenses, procurement-wise.
- **Procurement under Subprojects.** The project would finance demand-driven scientific and experimental subprojects proposed by the Participating Entities through a matching fund mechanism. Subprojects would be evaluated and selected in accordance with specific evaluation criteria to be described in the Operational Manual. A subproject could consist of trials in specialized thematic areas that will include scientific experiments, compilation and generation and testing of data, standardization of methodologies, and development of operational guidelines for the management of LMOs. Expenditures to be financed under these subprojects may include agricultural inputs and services, field tools, lab material and supplies, lab testing services, research fellowships, and training. Eligibility and selection criteria for subprojects would be described in the Operational Manual. Procurement under subprojects would be the responsibility of the beneficiaries and will follow shopping and commercial practices procedures as described in the Operations manual.

## **B. Assessment of the agency's capacity to implement procurement**

4. An assessment of the capacity of The International Center for Tropical Agriculture (CIAT), the proposed executing agency, to implement procurement actions for the project was carried out by the World Bank in March of 2006, while it was implementing project preparation activities. The assessment reviewed CIAT's organizational structure and capacity for implementing the project. No assessment was made for the other Participating Agencies in Brazil, Costa Rica and Peru.

5. CIAT was not --at the time of the assessment-- staffed by personnel duly and directly experienced in World Bank-funded procurement. Considering the relatively low value of the planned procurement, the assessment recommends the hiring of at least a part-time procurement consultant experienced in Bank-funded procurement procedures to provide advice and hands-on training to both CIAT personnel involved in project procurement and those of the Participating Entities.

6. The key issues and risks concerning procurement for implementation of the project stem from the dispersion of procurement activities amidst subproject beneficiaries. The corrective measures proposed were: (i) CIAT and project beneficiaries to receive procurement orientation by the Bank, which was implemented for CIAT staff; (ii) Bank to review and clear the first procurement actions per procurement method before being executed; (iii) clear guidance on procurement in the project's Operations Manual, and (iv) project funds may be used to pay for government and CIAT's own staff since in all four countries agricultural research is mostly done by government agencies.

7. Project procurement activities will be carried out under the general supervision of CIAT, and based on the Procurement Section of the project's Operations Manual

8. CIAT will need a very strong procurement team to provide effective oversight for the operation; training activities are not enough guarantee. Review of the procurement plans is necessary to better gauge

risk, and a solid draft of the operational manual must be ready and reviewed by negotiations. Given the complexity and dispersion of the procurement, this project is a good candidate for an Independent Procurement Review one year into project implementation. There is a risk that project funds will be used to pay for government and CIAT's own staff since in all four countries agricultural research is mostly done by government agencies. This issue should be taken seriously into account in project negotiations and, if needed, the project can finance incremental recurrent costs covering a portion of these civil servants' and CIAT's staff eligible expenses (Bank policy prohibits hiring civil servants under consulting contracts financed under Bank loans, credits, trust funds and grants).

9. The overall project risk for procurement is **AVERAGE** (but only after the real implementation of the measures stated above, especially the hiring of a consultant with experience in Bank-funded procurement).

### C. Procurement Plan

10. The Borrower, at appraisal, developed a general procurement plan for project implementation which provides the basis for the procurement methods. This plan has been agreed between the Borrower and the Project Team on December 2006 and is available at CIAT in Cali. It will also be available in the project's database and in the Bank's external website. The Procurement Plan was confirmed during project negotiations and will be updated with the Bank Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

### D. Frequency of Procurement Supervision

11. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended a procurement supervision mission annually, to both discuss procurement issues and carry out post review of procurement actions.

### E. Details of the Procurement Arrangements Involving International Competition

- **Goods, Works, and Non Consulting Services**

(a) List of contract packages to be procured following ICB and direct contracting:

1	2	3	4	5	6	7	8	9
Ref. No.	Contract (Description)	Estimated Cost	Procurement Method	P-Q	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date	Comments

Not expected.

(b) ICB contracts estimated to cost above \$250,000 (goods and non-consulting services) and \$5,000,000 (works) per contract, respectively, and all direct contracting will be subject to prior review by the Bank.

Not expected.

- **Consulting Services**

(a) List of consulting assignments with short-list of international firms.

1	2	3	4	5	6	7

Ref. No.	Description of Assignment	Estimated Cost	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments

Not expected.

Procurement Plan will reflect which contracts are subject to Bank's Prior review. Sole sourcing of goods; non-consulting services and consultants' contracts with firms must be subject to Bank's Prior Review.

## **Annex 9: Incremental Cost Analysis**

### **LATIN AMERICA: Regional Capacity-Building in Biosafety**

#### **Overview**

1. The project's **global environmental objective** is to strengthen capacity in the four participating countries to implement the Cartagena Protocol (CP) on biosafety.
2. To achieve this objective, the project will strengthen and consolidate partner countries' national technical capacity to safely transfer, handle and use living modified organisms resulting from modern biotechnology without adverse effects on the conservation and sustainable use of biological diversity, in line with biosafety priorities reflected in respective national development plans, national laws and policies, and other legal instruments for biosafety. The project will use complementary capacity already existing in National Biosafety Agencies and Centers of Excellence in the participating countries and establish a sustainable, collaborative, regional effort in thematic areas related to biosafety. The outcome is expected to be a more uniform and higher standard of technical capacity across the region derived from pooling best practices in biosafety from these mega-diverse countries.
3. The principal expected outcomes of the project are therefore:
  - By EOP, at least 80% of participating entities in the project countries have been using the available biosafety risk assessment and risk management strategies and methodologies developed by the project.
  - By EOP, inter-institutional and inter-country cooperation on biosafety risk assessment among the project countries have improved through diverse mechanisms.
  - By EOP, biosafety competent authorities in project countries are using the biosafety risk assessment tools and/or information as reference in planning and in making biosafety decisions.
4. The GEF Alternative would achieve these objectives and outcomes at an incremental cost of US\$ 12.0 million of which US\$ 4.0 million is being requested from the GEF.

#### **Context and Broad Development Goals**

5. The project is a grant-based, GEF operation in four Latin American countries, Brazil, Colombia, Costa Rica, and Peru. These countries were selected based on (a) high levels of biodiversity of important crops and their wild relatives; (b) geographic distribution of wild/weedy relatives of economically important crops; (c) levels of development and implementation of biosafety policies (including active GEF-funded projects and World Bank projects in agriculture and rural development); (d) complementary expertise related to implementing the Cartagena Protocol; and (e) potential future strategic role they could have on biosafety in their respective sub-regions.
6. The four partner countries had already established functioning, legal biosafety frameworks for the regulation, management and deployment of LMOs, prior to implementing the Cartagena Protocol. All have ratified the Convention on Biological Diversity and the Cartagena Protocol. The discussion on the biosafety of LMOs commenced in all participating countries by the late 1980s (Brazil) or the early 1990s (Colombia, Costa Rica, and Peru). However, each country has diverse needs and bottlenecks at the technical, legal, policy and public awareness level that prevent full implementation of the CP.

7. The project builds on other biosafety activities managed by the Bank and being carried out in India and Colombia. It would provide sustainable benefits in terms of biosafety that could also be replicated in further countries in the region, particularly under the guidance of the International Center for Tropical Agriculture (CIAT) – the proposed recipient of the grant and also the implementing agency. This is particularly significant as Latin America – and these countries in particular – have adopted the use of Genetically Modified Organisms at a faster rate than any other region in the world and, also, as Latin America – and these countries in particular – are the centre of origin of many important agricultural crops and harbor many landrace/weedy/wild relatives of these, the conservation of which is important for future crop-breeding.

8. Despite the significance of the four project countries and the region in terms of biodiversity, the Latin America and Caribbean Region generally has received relatively little attention regarding biosafety in comparison to the Africa and Asia regions. In addition, recent developments in international agreements on biosafety, increasing use of GMOs in these countries and increasing global movement of GMOs also make such a project all the more important. This project is therefore a priority for the region. The project, however, will not finance the planting of transgenic crops nor will be requesting/processing licenses for planting them. Neither will the project have any third party agreements related to the potential use of project data vis-à-vis the use of LMOs.

#### **Baseline scenario**

9. The baseline scenario for the four countries sees very little going towards capacity building and no coordinated efforts in the region. Without this project, the countries will undertake the necessary steps at a much slower rate and with little regional coordination and consequently greatly reduced efficiency and effectiveness. In particular, CIAT would not have funding to put towards organizing regional biosafety initiatives and there would be no integrated approach to take advantage of the potential synergies of coordination. It is also very unlikely that best-practice guidelines would be developed or that future replication within countries or within the region would occur.

10. The baseline scenario therefore sees the countries in the region very slowly developing their own methods without taking advantage of the economies of scale and without maximizing the potential biodiversity conservation benefits that could be achieved through such activities.

#### **Costs of the Baseline Scenario.**

11. The costs of the baseline activities for each country are given below, disaggregated by activities that contribute to each component of the project.

#### **Component 1 Strengthening technical capacity in knowledge generation for biosafety risk assessment and management**

12. In the absence of this project, CIAT would invest US\$3.66 million for: mapping distribution of crops; gene flow analysis and monitoring; crop management for minimizing transgene flow; evaluating and minimizing effects on non-target organisms; socio-economic impact assessment of LMOs in the tropics; and socio-economic impact assessment for LMOs in centers of crop-diversity.

13. CIAT would also invest US\$0.09 million for coordination of international projects that enable promotion and supervision of activities both in-country and across countries.

14. The Brazilian government is currently spending US\$6.46 million on strengthening biosafety technical capacity in Brazil.

15. The Colombian government is currently spending US\$4.0 million on strengthening biosafety technical capacity in Colombia.

16. International organizations are spending about US\$0.12 million in workshops regarding biosafety in Peru.

17. In Costa Rica, the Ministry of Agriculture financed an amount of US\$0.03 million to strengthen technical capacity on environmental biosafety in order to review a National Biosafety Framework for based on the Cartagena Protocol on Biosafety.

18. Academic institutions strengthen technical capacity in Costa Rica by providing matching funds to financed research projects related to environmental biosafety for mapping distribution of weedy and wild rice species and gene flow analysis. This funding is approximately US\$2.41million over the life of the project. In addition, academic institutions have invested approximately US\$0.1 million as investments in socio-economic studies that relate to the baseline for the GEF-WB project.

19. The total amount of baseline funding going towards this component is therefore **US\$ 16.9 million.**

#### **Component 2 Strengthening biosafety decision-making capacity**

20. In the absence of this project, CIAT would invest US\$0.70 million for: training on environmental risk assessment for competent authorities and practitioners; and training on socio-economic assessment for competent authorities and practitioners.

21. The Brazilian government is currently spending US\$0.11 million on strengthening decision-making capacity in Brazil.

22. There are currently no baseline activities occurring or planned regarding strengthening decision-making capacity in Colombia.

23. The Peruvian government is currently spending US\$0.22 million on strengthening decision-making capacity in Peru.

24. Costa Rica's National Executive Agency (NEA): National Committee of Biosafety has spent US\$0.195 million preparing, evaluating and reviewing a National Biosafety Framework for Costa Rica based on the Cartagena Protocol on Biosafety for strengthening decision-making capacity in Costa Rica. Furthermore, an investment of US\$0.045 from the Ministry of Agriculture has been spent on capacity building in decision-making of competent authorities.

25. The total amount of baseline funding that would contribute to the objectives of this component is therefore **US\$1.3 million.**

***The total cost of the Baseline scenario for the entire project would therefore be US\$18.1 million.***

#### **GEF Alternative scenario**

The alternative scenario would see the Colombian-based CIAT, as both grant partner and implementing agency, coordinating the activities of the four countries to create a competent pool of regional biosafety technical personnel and practitioners and to develop comprehensive biosafety databases and

methodologies for environmental risk and socio-economic impact analysis and management. This approach would be innovative and cost-effective in that it would integrate countries' technical/analytical biosafety capacity at a regional level. The activities developed would be specifically created as models for replication to apply to further crops and countries.

26. This would achieve a greater understanding of biotechnology and biosafety, and enhanced capacity to address risks within the countries involved and better informed decision-making. This would also lead to replication in other countries and the global environmental consequences would be improved biodiversity conservation in hotspots in Latin America – and particularly improved conservation of race/weedy/wild relatives of agriculturally important crops.

27. The GEF involvement would provide crucial incremental financing to maximize the global biodiversity conservation benefits of the project and to ensure that this would form a model for replication throughout the region.

### **Costs of the GEF alternative**

28. The following presents the disaggregated costs that would be paid by the various institutions to fund the four components of the GEF alternative scenario.

### **Component 1 Strengthening technical capacity in knowledge generation for biosafety risk assessment and management**

29. The proposed component under the GEF Alternative scenario will strengthen the technical capacity of the four participating partners to assess the biosafety risk and its management, and to assess socio-economic impacts.

30. CIAT would contribute US\$1.27 million to strengthen technical capacity for environmental risk assessment and management and socio-economic impact assessment.

31. Brazil would contribute US\$3.1 million towards: assessment and monitoring of gene flow, assessment and monitoring of potential effects on non crop (non target) organisms; adaptation of methods and tools for socio economic impact assessment of LMOs in centers of crop diversity; and development of analytical skills for analysis of potential benefits.

32. Colombia would contribute US\$1.1 million towards compilation and generation of baseline data for tracking and monitoring gene introgression persistence of novel traits in crop biosafety in cassava and potato; generation and use of GIS reference databases for mapping distribution of crops; adaptation and regional standardization of methodologies for evaluating effects on non target organisms; and development of analytical skills for potential socio-economic impacts of LMOs in centers of crop diversity.

33. Peru will contribute US\$0.10 million towards assessment and monitoring of potential effects on non-crop (non target) organisms.

34. Costa Rica will contribute US\$1.35 million towards adaptation and regional standardization of methodologies for large scale monitoring of gene flow; development of analytical skills for analysis of potential socio-economic impacts of LMOs, adaptation of methods and tools for socio-economic impact assessment of LMOs and evaluation of effects on non-target organisms.

35. The total cost of the GEF Alternative scenario for this component along with projected GEF co-financing of \$3.68 million would therefore be **US\$27.5 million.**

## **Component 2 Strengthening biosafety decision-making capacity**

36. The proposed component will build biosafety capacity for decision-making entities (competent authorities) and for practitioners (i.e. public and private research community), through participatory scientific and technical training on risk assessment and risk management.

37. Brazil would contribute US\$0.84 million towards training on environmental risk assessment and socioeconomic impact assessment for competent authorities and practitioners.

38. Colombia would contribute US\$0.04 million towards training on environmental risk assessment and socioeconomic impact assessment for competent authorities and practitioners.

39. Peru would contribute US\$0.04 million towards training on environmental risk assessment and socioeconomic impact assessment for competent authorities and practitioners.

40. Costa Rica will contribute US\$0.15 million towards training on environmental risk assessment and socioeconomic impact assessment for competent authorities and practitioners.

The total cost of the GEF Alternative scenario for this component along with the projected GEF co-financing \$0.32 million would therefore be **US\$2.7 million**.

41. **The total cost of the GEF Alternative scenario for the entire project would therefore be US\$30.2 million of which US\$ 4.0 million is being requested from the GEF.**

### **Benefits of the GEF alternative**

42. The GEF Alternative will enable the project countries to move more quickly in building the scientific and institutional capacity necessary for meeting their obligations under the CP. The alternative will also strengthen the project countries' capacity for environmental risk and socio-economic impact assessment, and to undertake risk management measures on different LMOs. Because of regional nature of the project, the information sharing mechanisms that the project will promote further strengthen their capacity and knowledge.

### **Incremental Costs**

43. The incremental cost – the additional cost above the baseline scenario (US\$ 18.1 million) – is US\$12 million. This would be financed in part by a US\$4.0 million GEF grant and through co-financing of US\$8.0 million. All of that would contribute to providing global environmental benefits. These global environmental benefits would be sustainable and would be scaled up through replication in further areas of biosafety within the four countries and throughout the region, thus producing significant additional benefits. The matrix below summarizes the baseline and incremental expenditures during the three-year project period.

### Attachment 9.1: Incremental Cost Matrix

Cost Category	US\$ Million	Domestic Benefit	Global Benefit
<b>Component 1: Strengthening Technical Capacity in Knowledge Generation for Biosafety Risk Assessment and Management</b>			
Baseline	<b>US\$16.9</b>	Existing capacity is weak and, due to lack of institutional capacity and government commitment, technical capacity within the countries will grow slowly and with reduced efficiency and effectiveness. Domestic benefits will be limited.	Lack of government commitment and heavy dependence on scientific consultative committees means that institutional and technical capacity within the countries is small. Without this project, the situation is unlikely to change significantly and technical capacity will continue to grow only slowly and in an uncoordinated manner. Furthermore, it will not be oriented towards achieving global benefits. Global benefits will therefore be very small.
With GEF Alternative	<b>US\$27.5</b>	Strengthened capacity of project countries will enable them to comply with international commitments under the Cartagena Protocol.	Technical capacity will be strengthened efficiently and effectively through regional integration and coordination for carrying out environmental risk assessment and socio-economic impact assessment. The GEF, and other, incremental financing will finance the activities that relate to achieving global environmental benefits and will particularly be used to orient aspects of the risk assessment and socio-economic analysis to take account of globally significant biodiversity.  Having an emphasis on producing replicable models and disseminating these, the consequences will include sustained improvements in the ability of the countries and the region to ensure conservation of globally significant biodiversity.
<i>Incremental</i>	<i>US\$10.6</i>		
<b>Comp 2: Strengthening Biosafety Decision-making Capacity</b>			
Baseline	<b>US\$1.3</b>	Decision-making capacity within the countries will continue to be weak and only grow slowly and in an uncoordinated manner. Domestic benefits will be limited.	Decision-making capacity within the countries will continue to be weak and only grow slowly and in an uncoordinated manner. In particular, it will not be oriented towards achieving global benefits. Global benefits will therefore be very small.
With GEF Alternative	<b>US\$2.7</b>	Strengthened capacity of project countries will enable them to comply with international commitments under the Cartagena Protocol.	Decision-making capacity of competent authorities will be strengthened efficiently and effectively through providing training in risk assessment and risk management and socio-economic impact assessment. The GEF, and other, incremental financing will finance the activities that relate to achieving global environmental benefits and will particularly be used to orient aspects of the risk assessment and socio-economic analysis to take account of globally significant biodiversity.  The training given here and lessons learned will be made available through CIAT to the entire region and the results will therefore be sustained improvements in the ability of the countries and the region to ensure conservation of globally significant biodiversity.
<i>Incremental</i>	<i>US\$1.4</i>		

	<i>Total Baseline: US\$18.1 million</i>	
	<i>Total GEF Alternative: US\$30.2 million</i>	
	<i>Total Incremental Costs: US\$12.0 million of which US\$4.0 million is requested from the GEF</i>	

## Annex 10: Safeguard Policy Issues

### LATIN AMERICA: Regional Capacity-Building in Biosafety

#### Environmental Safeguards:

1. The Safeguard Assurance Team (SAT) recommended a Category “C” rating in its review of the Project Concept Note on January 27, 2005.
2. This rating was re-confirmed by the Quality Enhancement Review that was held on March 7, 2006. The project’s explicit goal is to reduce the environmental risks of modern biotechnology through activities designed to build capacity to implement the CP. The project will not finance the field planting of genetically-modified crops specifically for project purposes. The project does not trigger the Indigenous Peoples Policy (OD 4.20) since project activities do not impinge negatively on their physical and material wellbeing.
3. As designed, this project is limited to research, technical assistance, and capacity-building activities. Nevertheless, the proposed subprojects being financed under component 1 needs to be screened for pest management, and therefore, the task team in consultation with SAT have triggered both OP 4.01 (Environmental Assessment) and OP 4.09 (Pest Management). The project will not finance the planting of genetically-modified crops (GMO).

#### Safeguard Policies that Might Apply

Safeguard Policies Triggered	Yes	No	TBD
Environmental Assessment (OP/BP 4.01)	<b>X</b>		
Natural Habitats (OP/BP 4.04)		<b>X</b>	
Forests (OP/BP 4.36)		<b>X</b>	
Pest Management (OP 4.09)	<b>X</b>		
Cultural Property (OPN 11.03)		<b>X</b>	
Indigenous Peoples (OD 4.20)		<b>X</b>	
Involuntary Resettlement (OP/BP 4.12)		<b>X</b>	
Safety of Dams (OP/BP 4.37)		<b>X</b>	
Projects on International Waterways (OP/BP 7.50)		<b>X</b>	
Projects in Disputed Areas (OP/BP 7.60)		<b>X</b>	

4. Quality Enhancement Review was held on March 7, 2006. The PAD-stage ISDS was updated prior to appraisal and disclosed in the Infoshop. ISDS was revised after the appraisal and will be disclosed in the Infoshop and the offices of CIAT - project implementing agency and the four National Coordinators (NCs).

#### Social Safeguards:

5. The project as designed is a capacity building project with assessment, management and education of issues related to biosafety and does not trigger the Indigenous Peoples Policy (OD 4.20). Further more the Cartagena Protocol implementation is pro-active in terms of Bank’s social safeguards and is adopted to ensure that the project activities will not have negative impact on the social well being of the various societal groups in participating countries. In addition during supervision and at mid-term

review stage, the potential triggering of social aspects during implementation will be evaluated, if so required.

6. The stakeholder consultations annex gives greater details of the proactive social involvement of this project (see Annex 11). It includes the actions taken during identification and preparation and for supervision.

7. Steps associated with safeguards due diligence of the demand-driven subprojects on biosafety to be funded by the project are described in the Operational Manual – subproject chapter.

## **Annex 11: Stakeholder Participation**

### **LATIN AMERICA: Regional Capacity-Building in Biosafety**

#### **Background**

1. The immediate target audience for this project includes the national agricultural innovation system (NAIS), public authorities and civil society (including farmer groups, producer and community organizations, and various environmental interest groups) in the participating countries (Brazil, Colombia, Costa Rica and Peru), with the international organizations such as CIAT and CIP as regional facilitators. Due to the controversy surrounding biosafety, stakeholder consultation and engagement are seen as a continuous, transparent, evolving and adaptable process, responsive to immediate and longer-term circumstances and to ensuring that interested groups/entities have both opportunity and forums for providing and receiving input.

2. Stakeholder involvement has been a core element of the debate on biosafety since the first wave of biosafety regulations emerged in the 1990s. There is probably no area of technology where stakeholder involvement is more deeply embedded in regulations and legislation. Recognizing the need for heightened levels of protection in the area of transfer, handling, and use of transgenic crops in centers of crop biodiversity within Latin America, this project will contribute to the ability of four countries to implement the Cartagena Protocol on Biosafety (CPB) in order to reduce the environmental risks of modern biotechnology.

The four countries participating in this project are among the twelve centers of mega-biodiversity, as defined by the Convention on Biological Diversity (CBD). They harbor the center of origin of land race/weedy/and wild relatives of several important field crops: maize, potato, cassava, cotton and rice. The project intends not only to provide scientifically-sound biosafety assessment, management, and decision-making instruments, but also to project these instruments in an organized, accessible form to competent authorities, biosafety practitioners, organized civil society and the general public. Given the ramifications of compliance with the CPB, biosafety capacity-building per se, and the public controversy surrounding GMO crops, the stakeholder universe is broad. This is reflected in the preparation of a special, regionally oriented MSP on Communications and Public Awareness

3. Public awareness on biotechnology and LMOs will continue to be partial and subject to inaccurate information unless there is intervention. Therefore, a related GEF-funded MSP on communications and knowledge exchange is under preparation and expected to operate in sync with the proposed project at hand. The MSP is designed to built public awareness and generate knowledge exchange of the results of this project throughout the region through a communications strategy.. This additional investment is justified given the global environmental benefits to be realized by broadly disseminating accurate, accessible information covering global biodiversity issues. The planned MSP includes activities to develop public awareness with activities including information campaigns, public debates, press-briefings, publications and online/other media. Actions already taken or planned include e-consultations, meetings and workshops on biosafety, engaging relevant stakeholders and civil society in the capacity-building process as it evolves. E-consultation, for example, has been undertaken with a set of questionnaire sent to over 390 individuals representing government institutions, NGOs, academic institutions, biosafety groups, media, conservation agencies and biotechnology firms. Key outcomes of the e-consultations are summarized in paragraphs 14 and 15 of this Annex. Further, the project coordinator in CIAT has already launch a dedicated website for the project (<http://www.lacbio.org>) and the four country partners are developing and will maintain a dedicated, interactive web page at their respective institutional homepages. On the Bank's part, a biosafety Q&A has been added to the Bank's external website, on the ENV biosafety-biodiversity page.

## Stakeholder Involvement during the Project Cycle

4. Project development was initiated by CIAT through an interactive dialogue on national biosafety issues between the relevant country ministries and/or their agencies (see Table 11.1). The original project idea was developed by the CIAT Agro-biodiversity Research Group in response to needs identified through interaction and collaboration with various national stakeholders (biosafety national competent authorities and practitioners (public and private) civil society, and social communicators). This dialogue revealed that, despite countries' biosafety legal codes, their technical capacity to implement the CP was weak in the project countries and more importantly, was highly variable in and between countries and among different key sectors (e.g., environment, agriculture, commerce and trade, and health). This launched the CIAT-coordinated consultative process involving, among other activities, a series of courses on biosafety for National Biosafety Committee (NBC) members, and in-country capacity analyses to define major bottlenecks.

5. The most glaring deficiency was found to be the lack of science-based assessment methodologies and processes for biosafety. Countries also expressed concern about the trans-boundary movement of LMOs and their need to have confidence in neighboring countries, which led to a series of meetings between representatives of ministries of agriculture, social protection and health, and also decisions about who would be the country project focal points.

6. While the courses conducted by CIAT included civil society representatives with divergent views about LMO/biosafety, the general discussion preceding formal project preparation focused on responding to the needs and concerns of country authorities responsible for planning, decision-making and management within the biotechnology and biosafety spectrum, including compliance with the Cartagena Protocol on Biosafety. The strategy is now to intensify engagement with organized civil society and producer groups over time, including throughout project implementation, by targeting specific civil society organizations and producer groups through information transfer, dissemination and exchange, while maintaining an open, inclusive posture towards any relevant organization which may want to become involved. Meanwhile, consultation with and involvement of country authorities and the biosafety/biotechnology community of interests will continue.

**Table 11.1. Consultation Calendar - Identification through Preparation Stages**

Meeting	Venue	Date	Purpose	Participants
Meeting leading to project concept/idea	CIAT, Cali, Colombia	April 2003	To determine the strategic support needs for biosafety in Latin America	CIAT Biotechnology Research Group
Development of the project concept	CIAT, Cali, Colombia	May 2003	Project concept discussion at the CIAT internal retreat	CIAT high level staff and technical staff
Continuing development of the project idea	CIAT, Cali, Colombia	June-July 2003	Meetings to improve the project concept based on feedback from the Latin American participating countries, and selection/definition of strategy	Selected Agro-biodiversity Senior Staff Peer Group
Individual country consultation by CIAT with Brazil	CIAT, Cali, Colombia	July 2003	Meeting with the potential partners to exchange ideas - Brazil	Brazil and CIAT
Individual country	Bogota,	October	Meeting with the potential	Colombia and

consultation by CIAT with Colombia	Colombia	2003	partners to exchange ideas - Colombia	CIAT
Individual country consultation by CIAT with Costa Rica	San Jose, Costa Rica	August 2003	Meeting with the potential partners to exchange ideas – Costa Rica	Costa Rica and CIAT
Individual country consultation by CIAT with Mexico	Mexico D.F., Mexico	November 2003	Meeting with the potential partners to exchange ideas - Mexico	Mexico and CIAT
Consultation to refine and improve the project idea	Electronic discussion	July-December 2003	Incorporate feedback from country consultations and refine emerging strategy	Brazil, CIAT, Colombia, Costa Rica and Peru (included Mexico at this stage)
CIAT-World Bank Meeting at GEF/WB Biosafety project launching meeting	Bogota, Colombia	February 2004	Submission of the Project concept to, and associated discussions with, World Bank	CIAT, World Bank, Colombia
Individual country consultation for proposal development	Electronic discussion	February to April 2004	Incorporate feedback from countries consultations based on World Bank comments	Brazil, Colombia, Costa Rica, Mexico and CIAT
CIAT-WB meeting at CIAT for PDF-B pre-proposal stage	CIAT, Colombia	December 2004	Preparatory meeting for PDF-B preparation. Inclusion of Peru as a new partner	World Bank and CIAT
PDF-B: third meeting to define Work Plan after GEF submission	CIAT	May 2006	Detailed final project Work Plan	CIAT, National Coordinators of the (then) five countries, and PDF-B consultants
In-country consultation prior to project implementation	In-country consultation by National Coordinators	July 2006	Dissemination/promotion of the project concept	Mexico, Peru, Costa Rica, Colombia, and Brazil
Country consultation throughout Project implementation	Consultations by the National Coordinators during project implementation to define activities for Consultation Plan.	January 2007 to project Closing	Continuously incorporate stakeholder feed-back to adapt and execute the Consultation Plan.  Participate in capacity-building activities and broad dissemination of project results through the Communications and Public Awareness MSP	CIAT, Colombia, Brazil, Peru and Costa Rica

## **Stakeholder Consultation Process at CIAT**

7. To promote a culture of stakeholder consultation in biosafety, CIAT has, since 1999, done the following: (i) conducted 16 biosafety courses and workshops for diverse stakeholders including the Colombian Biosafety Technical Council, breeders, NARS scientists (non-biotech specialists), journalists (radio, newspaper) and government officials; (ii) sought and held TV interviews and participated in video productions; (iii) collaborated in the GEF/World Bank Colombian Biosafety Project during its formulation and implementation, providing technical assistance, training and research capacity; and (iv) served as an advisory resource during discussions of the biosafety regulation framework in Colombia, Venezuela and Peru, as well as in regional biosafety activities held by the Andean Community Countries, Brazil and Mexico. This active involvement in the region through consultation and technical assistance, and through coordination of a BMZ-funded (Germany) project initiated in 2001 on environmental biosafety with the participation of national public scientists from the region, revealed the urgent need to strengthen technical capacity for implementing biosafety legal frameworks already in place in the participating countries. Initial conceptual and consultative efforts were followed by discussions with national partners involved in the biosafety decision-making process and/or in generating biosafety data for competent authorities (Table 11.1). The project concept was further refined and subsequently shared with the World Bank in February 2004 (Table 11.1). Each participating country continued the consultative process internally, promoting the project concept with competent biosafety authorities.

## **National Stakeholder Consultation Process**

8. Upon receiving feedback from the World Bank for developing the PDF-B concept in December 2004 (Table 11.1) and during the PDF-B preparation, a broader in-country consultation took place, including not only the national biosafety competent authorities, but also ministries of agriculture, environment and health, and, in some cases, the respective national science council (Table 11.2). During PAD preparation, each participating country generated analytical documents, including a diagnosis of the socio-economic situation, the legal framework, capacity-building needs, scenarios for environmental risk assessment, and a list of priority target crops prepared by experts from the biological sciences but also including social communicators, economists and lawyers (Table 11.2). Once the PAD has been approved by the World Bank and GEF and prior to defining the final project Work Plan, national coordinators in each country will promote a broad understanding of the project in their respective countries (Table 11.2).

9. Formal project preparation has included consultation with a broader group of parties based on an evolving, adaptable Consultation Plan covering the preparation through implementation phases. Entities already consulted include national research institutes from each country, government biosafety agencies, ministries responsible for natural resources, agriculture and production in each country, and international and regional agricultural institutes. In each of the participating countries, partners include not only agriculture, biotechnology and biosafety experts but also representatives of the environmental field responsible for biodiversity conservation in those countries (e.g., Institute von Humboldt, Colombia; CONAM, Peru; EMBRAPA, Brazil; and INBIO, Costa Rica (see Annex 6, Table 6.1).

## **Consultation with Civil Society**

10. The next stage of stakeholder consultations is already underway. While this will be undertaken in the MSP sister project on Communication and Public Awareness, it will be briefly explained here. This stage involves, first, a series of in-country workshops with NGOs, producer groups and other interested civil society bodies. Second, additional stakeholder consultation events and opportunities are planned for during the project implementation period. These include e-consultations, publication sharing, meetings with biosafety and environmental NGOs and private sector groups, and further consultations with relevant government institutions in each of the four countries. As project preparation has advanced, consultations

have been amplified to incorporate, for example, the International Project on GMO Environmental Risk Assessment Methodologies (GMO ERA) in which several of the project partners are collaborators as part of the GMI ERA group. Three of the four national coordinators of the Project participated in the June 2006 workshop on Environmental Risk Assessment Methodologies in Brazil, with the goal of establishing links between the project, other biosafety initiatives and civil society bodies.

11. Within the Bank, a Biosafety Consultation on October 16, 2006 – broadly publicized – attracted a diverse audience including NGOs, Bank and external environmental specialists, economists and representatives of international organizations to discuss, inter alia, the proposed project.

12. The overall goal of these consultations is to expand the Consultation Plan work agenda and stakeholder inclusion activities to be financed by the project, and to foster a pluralistic approach to stakeholder participation and knowledge-sharing. It is also an important reason for organizing the work agenda around thematic areas. Further, as mentioned, CIAT is designing a project website linked to sites in all partner countries and including an online newsletter, and is planning an information-sharing event with the media and key NGOs to establish the foundation for sustaining a consultative approach throughout project implementation.

**Table 11.2. Web-based Public Disclosure of Information and Stakeholder Consultations**

	<b>Project related Web url</b>	<b>Others</b>
Brazil	<a href="http://www.cnpma.embrapa.br">www.cnpma.embrapa.br</a> Note: EMBRAPA CNPMA (environment) will establish a link with CIAT Project-specific website upon Effectiveness	
Colombia	<a href="http://www.humboldt.org.co">www.humboldt.org.co</a> Note: Institute von Humboldt will establish a link with CIAT Project specific web site upon Effectiveness	
Costa Rica	<a href="http://www.cibgem.ucr.ac.cr/">www.cibgem.ucr.ac.cr/</a> Note: CIBCM will establish a link with CIAT Project specific web site upon Effectiveness	
Peru	<a href="http://www.conam.gob.pe/Modulos/Home/index.asp">www.conam.gob.pe/Modulos/Home/index.asp</a> Note: CONAM will establish a link with CIAT Project specific web site upon Effectiveness	
CIAT	<a href="http://www.lacbio.org/">http://www.lacbio.org/</a>	Project Newsletter
World Bank	Biosafety Q&A: <a href="http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTBIODIVERSITY/0,,contentMDK:20486117~menuPK:1170076~pagePK:148956~piPK:216618~theSitePK:400953,00.html">http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTBIODIVERSITY/0,,contentMDK:20486117~menuPK:1170076~pagePK:148956~piPK:216618~theSitePK:400953,00.html</a>  <a href="http://intranet.worldbank.org/WBSITE/INTRANET/INTCOUNTRIES/INTLAC/0,,contentMDK:20969920~pagePK:145785~piPK:146087~theSitePK:257804,00.html#Top_Page">http://intranet.worldbank.org/WBSITE/INTRANET/INTCOUNTRIES/INTLAC/0,,contentMDK:20969920~pagePK:145785~piPK:146087~theSitePK:257804,00.html#Top_Page</a>	Infoshop: PID, ISDS

13. In order to analyze the stakeholders' views and opinions regarding the project and its goals, a multi stakeholder consultation as part of Social Assessment got underway during the project preparation, which will be continued during implementation. As part of this process an e-consultation was carried out in December 2006 in the four participating countries. The resulting analyses show an overall high level of stakeholder agreement with the objectives of the proposed project, its components and structure. Also, the stakeholders' perceptions on the need for their country to comply with the Cartagena Protocol on Biosafety (CP) and the proposed project's ability to achieve this goal were assessed as very high and high by the majority of the respondents in all countries. This high level of approval emphasizes its relevance to the stakeholders and their perception of the project's ability to provide the countries with capacity-building measures in issues concerning biosafety.

14. Additionally, the majority of the survey participants in all four countries has expressed their continued support and interest in participation in the project during implementation. The majority of participants see their engagement during the project implementation phase in technical capacity-building. All of the survey participants agree that their countries should continue to be involved in projects related to biosafety. In general, the stakeholders believe that a project like this generates discussion on biosafety issues, strengthens the technical capacity and the spread of relevant information to society.

During project implementation, biosafety practitioners (from the public and private research community) and decision-making entities (competent authorities) will participate in project Components 1 and 2.

#### **Link to National Biosafety Clearing Houses (BCH)**

15. The project will, where relevant, share information with national BCH. Project data will be deposited in a parallel system of data depositories in the participating countries and information-sharing is done in a manner that does not affect the intellectual property rights of knowledge generators. Some project countries have a fully functional Biosafety Clearing House (BCH) and others have recently received additional training in BCH. BCH is a high-value tool in stakeholder engagement and knowledge sharing. Regional BCH will further improve information sharing and dissemination among interested parties/stakeholders, providing opportunities to NGOs, civil institutions, academics, the business community (particularly the cotton companies), and farmer and producer organizations to engage in the discussion on biosafety management. Information in the above repositories will be linked with Montreal BCH.

**Annex 12: Project Preparation and Supervision**  
**LATIN AMERICA: Regional Capacity-Building in Biosafety**

	<b>Planned</b>	<b>Actual</b>
PCN review	January 26, 2005	January 26, 2005
Initial PID to PIC	October 20, 2006	August 10, 2006
Initial ISDS to PIC	October 20, 2006, 2006	August 10, 2006
Appraisal	November 07, 2006	December 11-14, 2006
Negotiations	February 21, 2007	February 21, 2007
Board/RVP approval	May 17, 2007	
Planned date of effectiveness	May 31 2007	
Planned date of mid-term review	November 15, 2008	
Planned closing date	November 15, 2010	

***Key Institutions Responsible for Preparation of the Regional Project:***

***Implementing agency:*** CIAT, Cali, Colombia

***Brazil:*** EMBRAPA CNPMA (Environmental Research Center), Jaguariuna/SP, Brazil

***Colombia:*** Alexander von Humboldt Institute, Ministerio de Medio Ambiente, Bogota, Colombia

***Costa Rica:*** University of Costa Rica, San José, Costa Rica

***Peru:*** CONAM, Lima, Peru

***Project Preparation Grant Received:***

A GEF PDF B grant for US\$260,000 (TF055877) was received and used for project preparation by the recipient (CIAT on behalf of the four project countries—Brazil, Colombia, Costa Rica, and Peru to contract consulting services for the following preparation activities (it is to be noted that Mexico that was a recipient of the PDF B funds withdrew mid-way through the period):

- (a) Consultation and selection of crops, traits/genes of interest, issues, and target areas;
- (b) Assessment of methodologies, geographic information systems (GIS) tools, and expert systems assisted by GIS for generating a GIS-referenced target crops and landrace, weedy wild relative distribution database, national capacity to manage GIS, existing pilot mapping populations of target crops;
- (c) Diagnosis of current regional status and needs on biosafety guidelines, regulatory systems, implementing agencies, clearing house mechanisms, list of regional and national facilities, human resource expertise, research groups with international standards etc.;
- (d) Assessment of available methodologies and needs to develop/adapt large scale screening, management practices, and long-term monitoring on environmental safety;
- (e) Assessment of methodologies and available models needs for development/adaptation to conduct socio-economic impacts associated with transgenic crops/products;
- (f) Diagnosis of existing capacity and capacity building needs on GIS, ex-ante/ex-post analyses, economic impact assessment, field trials, and benefit/risk assessment/management associated with benefit/risk assessment of transgenic crops and products; and

(g) Diagnosis of existing initiatives and needs for public awareness associated with benefit/risk assessment of transgenic crops and products; and (h) comprehensive baseline study for the documentation of best practices and overall project execution, monitoring and evaluation.

The training activities conducted successfully were: (a) general consultation meeting for consensus building and donor and regional conservation organizations meeting held in October 2005 in CIAT and (b) project document preparation meeting in February 2006 in CIAT, Cali, Colombia.

The grant was successfully executed by the Project Implementing Agency, CIAT. All planned outputs were completed and the national and international consultants' performance was satisfactory, with significant knowledge generation, assistance to identify gaps in biosafety and implementation of the Cartagena Protocol, and sharing of innovative technologies among the four project client countries and CIAT. Both the client and stakeholders benefited from workshops and knowledge transfer activities.

***Bank Staff and Consultants Who Worked on the Project Included:***

<b>Name</b>	<b>Title</b>	<b>Unit</b>
Willem Janssen	Lead Agriculturist (TTL)	LCSAR
Matthew A. McMahon	Lead Agriculturist (ex-TTL)	LCSAR
Indira J. Ekanayake	Senior Agriculturist	LCSAR
Teresa M. Roncal	Operations Analyst	LCSAR
Dinesh Aryal	Operations Officer	LCSEN
Jocelyn Albert	Senior GEF Coordinator	LCSEN
Juan Martinez	Senior Social and Indigenous People's Specialist	LCSSO
Stevan Jackson	Communications Officer	LCREA
Karla Chaman	Communications Officer	EXTCD
Michele Bruni	Communications Specialist	EXTCD
Jeanette Estupinan	Financial Management Specialist, Colombia Country Office	LCOAA
Jorge Kamine	Senior Counsel	LEGLA
Jose M. Martinez	Procurement Specialist	LCOPR
Regis Thomas Cunningham	Senior Finance Officer	LOAG3
Antonio S. Davilla-Bonazzi	Portfolio Officer/Loan Accounting officer	LOAG3
Gustavo Castro F. Raposo	Finance Analyst	LOAG3
C. Izquierdo-Gonzalez	Finance Assistant	LOAG3
Luis Fernando Rios	JPA, Colombia Country Office	LCOAA
Anna Roumani	Consultant	LCSAR
Katherine Wendell	Junior Professional Associate/ Social Specialist	LCSES
Alexandra Christina Horst	Junior Professional Associate	LCSAR
Diana Rebolledo	Program Assistant	
Maribel Cherres	Program Assistant	LCSES

***Bank funds expended to date on Project preparation:***

1. Bank resources: FY05- US\$3,576.50; FY06 – US\$52,932.84; Total (FY05+FY06) – US\$56,509.34; Expected expenses - US\$ 68,000.00
2. GEF PDF B grant funds: TF055877 US\$260,000; Disbursed US\$..... (up to October 30, 06) [PDF-B Co-financing: US\$240,000
3. Total: US\$ 328,000 estimated

***Estimated Approval and Supervision costs:***

1. Remaining costs to approval: US\$ 80,000
2. Estimated annual supervision cost: US\$ 80,000

## **Annex 13: Documents in the Project File**

### **LATIN AMERICA: Regional Capacity-Building in Biosafety**

#### ***Bank Documents:***

Project Concept Note (PCN)  
Minutes of the QER  
PID  
PAD  
ISDS  
Legal Agreement  
Aide Memoire during preparation  
GMRs

#### ***Other Project Preparation Documents***

1. Acevedo F. and Galvez A. 2006. Annex 1: Country Sector or Program background.
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**Annex 14: Statements of Loans and Credits**  
**LATIN AMERICA: Regional Capacity-Building in Biosafety**

**BRAZIL**

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P077187	2004	GEF 6L-Building IABIN (Inter-Am Biod)	0.00	0.00	0.00	6.00	0.00	5.26	0.70	0.00
P068121	2002	GEF 6L-Guarani Aquifer Project	0.00	0.00	0.00	13.40	0.00	11.42	10.53	0.00
P072979	2002	GEF 6L-Silvopastoral Integr Ecosyst Mgt	0.00	0.00	0.00	4.50	0.00	2.17	3.70	0.00
Total:			0.00	0.00	0.00	23.90	0.00	18.85	14.93	0.00

LATIN AMERICA  
STATEMENT OF IFC's  
Held and Disbursed Portfolio  
In Millions of US Dollars

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P081436	2006	BR-Bahia Poor Urban Areas Integrated Dev	49.30	0.00	0.00	0.00	0.00	49.30	0.00	0.00
P082142	2006	BR-Ceara Multi-sector Social Includ Dev	149.00	0.00	0.00	0.00	0.00	85.38	0.67	0.00
P052256	2006	BR-MG Rural Poverty Reduction	35.00	0.00	0.00	0.00	0.00	35.00	0.00	0.00
P050761	2006	BR-Housing Sector TAL	4.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00
P090041	2006	BR ENVIRONMENTAL SUST. AGENDA TAL	8.00	0.00	0.00	0.00	0.00	7.94	0.00	0.00
P093787	2006	BR (CRL2) Bahia State Integ Proj Rur Pov	54.35	0.00	0.00	0.00	0.00	54.35	0.00	0.00
P089440	2006	BR-Brasilia Environmentally Sustainable	57.64	0.00	0.00	0.00	0.00	57.64	0.00	0.00
P075379	2005	BR GEF-RJ Sust IEM in Prod Landscapes	0.00	0.00	0.00	6.73	0.00	6.75	0.00	0.00
P076924	2005	BR-(Amapa) Sustainable Communities	4.80	0.00	0.00	0.00	0.00	4.80	0.97	0.00
P078716	2005	BR(CRL1)Prog Growth for Housing	502.52	0.00	0.00	0.00	0.00	502.52	0.00	0.00
P088009	2005	BR GEF-Sao Paulo Riparian Forests	0.00	0.00	0.00	7.75	0.00	6.43	0.13	0.00
P069934	2005	BR-PERNAMBUCO INTEG DEVT: EDUC QUAL IMPR	31.50	0.00	0.00	0.00	0.00	30.84	8.44	0.00
P082328	2005	BR-Integ.Munic.Proj.-Betim Municipality	24.08	0.00	0.00	0.00	0.00	22.45	3.46	0.00
P087711	2005	BR Espirito Santo Wtr & Coastal Pollu	36.00	0.00	0.00	0.00	0.00	33.14	12.45	0.00
P083533	2005	BR TA-Sustain. & Equit Growth	12.12	0.00	0.00	0.00	0.00	12.06	2.25	0.00
P086525	2005	BR PRGM. FISCAL REF - SOCIAL SEC REFORM	658.30	0.00	0.00	0.00	0.00	658.30	658.30	0.00
P080830	2004	BR Maranhao Integrated: Rural Dev	30.00	0.00	0.00	0.00	0.00	30.00	10.37	0.00
P087713	2004	BR (CRL1) Bolsa Familia 1st APL	572.20	0.00	0.00	0.00	2.86	366.45	36.41	0.00
P083013	2004	BR Disease Surveillance & Control APL 2	100.00	0.00	0.00	0.00	0.00	89.74	28.69	0.00
P060573	2004	BR Tocantins Sustainable Regional Dev	60.00	0.00	0.00	0.00	0.00	57.40	26.40	0.00

P070827	2003	BR-2nd APL BAHIA DEV. EDUCATION PROJECT	60.00	0.00	0.00	0.00	0.00	17.30	13.27	0.00
P074777	2003	BR-Municipal Pension Reform TAL	5.00	0.00	0.00	0.00	0.00	4.71	4.71	1.71
P058503	2003	GEF BR Amazon Region Prot Areas (ARPA)	0.00	0.00	0.00	30.00	0.00	20.87	25.83	0.00
P076977	2003	BR-Energy Sector TA Project	12.12	0.00	0.00	0.00	0.00	12.00	8.10	0.00
P054119	2003	BR BAHIA DEVT (HEALTH )	30.00	0.00	0.00	0.00	0.00	22.52	13.35	0.00
P080400	2003	BR-AIDS & STD Control 3	100.00	0.00	0.00	0.00	0.00	55.95	22.67	0.00
P049265	2003	BR-RECIFE URBAN UPGRADING PROJECT	46.00	0.00	0.00	0.00	0.00	43.93	18.26	0.00
P073192	2002	BR TA Financial Sector	14.50	0.00	0.00	0.00	0.00	9.48	9.48	0.00
P043869	2002	BR SANTA CATARINA NATURAL RESOURC & POV.	62.80	0.00	0.00	0.00	0.00	43.31	16.35	0.00
P051696	2002	BR SÃO PAULO METRO LINE 4 PROJECT	209.00	0.00	0.00	0.00	0.00	149.01	145.15	31.66
P055954	2002	BR GOIAS STATE HIGHWAY MANAGEMENT	65.00	0.00	0.00	0.00	0.00	18.88	18.88	8.17
P057653	2002	BR- FUNDESCOLA IIIA	160.00	0.00	0.00	0.00	0.00	113.62	32.94	0.00
P057665	2002	BR-FAMILY HEALTH EXTENSION PROJECT I	68.00	0.00	0.00	0.00	0.00	27.75	27.75	0.00
P060221	2002	BR FORTALEZA METROPOLITAN TRANSPORT PROJ	85.00	0.00	0.00	0.00	0.00	111.47	84.02	0.00
P066170	2002	BR-RGN 2ND Rural Poverty Reduction	22.50	0.00	0.00	0.00	0.00	4.93	5.43	0.00
P070552	2002	GEF BR PARANA BIODIVERSITY PROJECT	0.00	0.00	0.00	8.00	0.00	5.29	7.37	0.00
P059566	2001	BR- CEARA BASIC EDUCATION	90.00	0.00	0.00	0.00	0.00	50.06	50.06	10.05
P073294	2001	BR Fiscal & Fin. Mgmt. TAL	8.88	0.00	0.00	0.00	0.00	6.74	6.13	0.00
P050881	2001	BR PIAUI RURAL POVERTY REDUCTION PROJECT	22.50	0.00	0.00	0.00	0.00	2.83	2.83	0.91
P050880	2001	BR Pernambuco Rural Poverty Reduction	30.10	0.00	0.00	0.00	0.00	2.07	2.07	-0.97
P050772	2001	BR LAND-BASED POVRTY ALLEVIATION I (SIM)	202.10	0.00	0.00	0.00	58.13	123.06	125.14	0.00
P039199	2000	BR PROSANEAR 2	30.30	0.00	0.00	0.00	6.40	17.38	23.78	17.38
P006449	2000	BR CEARA WTR MGT PROGERIRH SIM	136.00	0.00	0.00	0.00	0.00	51.31	51.31	28.35
P050776	2000	BR NE Microfinance Development	50.00	0.00	0.00	0.00	10.23	9.80	20.03	0.00
P035741	2000	BR NATL ENV 2	15.00	0.00	0.00	0.00	6.00	1.93	7.93	5.61
P048869	1999	BR SALVADOR URBAN TRANS	150.00	0.00	0.00	0.00	32.00	47.02	79.02	0.00
P006474	1998	BR LAND MGT 3 (SAO PAULO)	55.00	0.00	0.00	0.00	10.00	25.11	35.26	0.48
P042565	1998	BR PARAIBA R.POVERTY	60.00	0.00	0.00	0.00	0.00	0.56	0.56	-1.30
P043420	1998	BR WATER S.MOD.2	150.00	0.00	0.00	0.00	125.00	19.33	144.30	11.94
P043421	1998	BR RJ M.TRANSIT PRJ.	186.00	0.00	0.00	0.00	27.78	53.70	81.48	43.67
P038895	1998	BR FED.WTR MGT	198.00	0.00	0.00	0.00	40.00	27.61	67.61	23.20
P037828	1996	BR (PR)R.POVERTY	175.00	0.00	0.00	0.00	10.00	5.23	15.23	-1.44
Total:			4,887.61	0.00	0.00	52.48	328.40	3,219.25	1,954.84	179.42

**BRAZIL**  
**STATEMENT OF IFC's**  
**Held and Disbursed Portfolio**  
**In Millions of US Dollars**

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2005	ABN AMRO REAL	98.00	0.00	0.00	0.00	5.87	0.00	0.00	0.00
2005	ABN AMRO REAL	98.00	0.00	0.00	0.00	5.87	0.00	0.00	0.00
2001	AG Concession	0.00	30.00	0.00	0.00	0.00	29.07	0.00	0.00
2002	Amaggi	21.43	0.00	0.00	0.00	21.43	0.00	0.00	0.00
2005	Amaggi	30.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00
2002	Andrade G. SA	23.83	0.00	10.00	13.64	23.83	0.00	10.00	13.64
2001	Apolo	6.82	0.00	0.00	0.00	4.32	0.00	0.00	0.00
2005	Aracruz	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00
1998	Arteb	20.00	0.00	0.00	18.33	20.00	0.00	0.00	18.33
1999	AutoBAn	19.48	0.00	0.00	12.94	19.48	0.00	0.00	12.94
1998	BSC	1.12	0.00	0.00	0.44	1.05	0.00	0.00	0.44
2001	Brazil CGFund	0.00	20.00	0.00	0.00	0.00	7.20	0.00	0.00
1994	CHAPECO	10.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
1996	CHAPECO	1.78	0.00	0.00	5.26	1.78	0.00	0.00	5.26
2002	CN Odebrecht	0.00	0.00	20.00	0.00	0.00	0.00	20.00	0.00
2003	CPFL Energia	0.00	40.00	0.00	0.00	0.00	40.00	0.00	0.00
1996	CTBC Telecom	6.00	8.00	0.00	0.00	6.00	8.00	0.00	0.00
1997	CTBC Telecom	0.00	6.54	0.00	0.00	0.00	6.54	0.00	0.00
1999	Cibrasec	0.00	3.28	0.00	0.00	0.00	2.91	0.00	0.00
2004	Comgas	45.00	0.00	0.00	45.00	12.50	0.00	0.00	12.50
2005	Cosan S.A.	50.00	5.00	15.00	0.00	0.00	5.00	15.00	0.00
	Coteminas	0.00	1.84	0.00	0.00	0.00	1.84	0.00	0.00
1997	Coteminas	3.75	1.25	0.00	0.00	3.75	1.25	0.00	0.00
2000	Coteminas	0.00	0.18	0.00	0.00	0.00	0.18	0.00	0.00
1980	DENPASA	0.00	0.52	0.00	0.00	0.00	0.48	0.00	0.00
1992	DENPASA	0.00	0.06	0.00	0.00	0.00	0.06	0.00	0.00
	Dixie Toga	0.00	0.35	0.00	0.00	0.00	0.35	0.00	0.00
1998	Dixie Toga	0.00	10.36	0.00	0.00	0.00	10.36	0.00	0.00
1997	Duratex	2.71	0.00	3.00	1.14	2.71	0.00	3.00	1.14
2005	EMBRAER	35.00	0.00	0.00	145.00	35.00	0.00	0.00	145.00
1999	Eliane	17.07	0.00	13.00	0.00	17.07	0.00	13.00	0.00
1998	Empesca	5.00	0.00	10.00	0.00	5.00	0.00	10.00	0.00
2000	Fleury	5.14	0.00	6.00	0.00	5.14	0.00	6.00	0.00
2004	Fleury	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	Fosfertil	3.79	0.00	0.00	12.05	3.79	0.00	0.00	12.05
1998	Fras-le	4.67	0.00	9.99	0.00	4.67	0.00	6.69	0.00
1994	GAVEA	0.00	0.00	2.75	0.00	0.00	0.00	2.75	0.00

2005	GP Capital III	0.00	15.00	0.00	0.00	0.00	0.89	0.00	0.00
	GP Cptl Rstrctd	0.00	2.41	0.00	0.00	0.00	2.33	0.00	0.00
2001	GPC	0.00	0.00	9.00	0.00	0.00	0.00	9.00	0.00
1997	Guilman-Amorim	20.06	0.00	0.00	23.95	20.06	0.00	0.00	23.95
1998	Icatu Equity	0.00	5.79	0.00	0.00	0.00	4.45	0.00	0.00
1999	Innova SA	5.04	5.00	0.00	11.21	5.04	5.00	0.00	11.21
1980	Ipiranga	0.00	5.32	0.00	0.00	0.00	5.32	0.00	0.00
1987	Ipiranga	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
2006	Ipiranga	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	Itaberaba	0.00	2.28	0.00	0.00	0.00	2.28	0.00	0.00
2000	Itau-BBA	17.14	0.00	0.00	0.00	17.14	0.00	0.00	0.00
2002	Itau-BBA	80.60	0.00	0.00	0.00	48.46	0.00	0.00	0.00
1999	JOSAPAR	7.57	0.00	7.00	0.00	2.57	0.00	7.00	0.00
2005	Lojas Americana	35.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
1992	MBR	0.00	0.00	10.00	0.00	0.00	0.00	10.00	0.00
2002	Macaes	31.07	0.00	10.00	25.00	31.07	0.00	10.00	25.00
2002	Microinvest	0.00	1.25	0.00	0.00	0.00	0.82	0.00	0.00
	Net Servicos	0.00	15.87	0.00	0.00	0.00	15.87	0.00	0.00
2002	Net Servicos	0.00	2.33	0.00	0.00	0.00	2.33	0.00	0.00
2005	Net Servicos	0.00	7.37	0.00	0.00	0.00	7.37	0.00	0.00
1994	Para Pigmentos	4.30	0.00	9.00	0.00	4.30	0.00	9.00	0.00
1994	Portobello	0.00	0.75	0.00	0.00	0.00	0.75	0.00	0.00
2000	Portobello	4.97	0.00	7.00	0.00	4.97	0.00	7.00	0.00
2002	Portobello	0.00	1.15	0.00	0.00	0.00	1.15	0.00	0.00
2000	Puras	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2003	Queiroz Galvao	29.17	0.00	10.00	0.00	19.17	0.00	10.00	0.00
2004	Queiroz Galvao	0.60	0.00	0.00	0.00	0.08	0.00	0.00	0.00
2006	RBSec	0.00	1.51	0.00	0.00	0.00	1.51	0.00	0.00
	Randon Impl Part	2.80	0.00	3.00	0.00	2.80	0.00	3.00	0.00
1997	SP Alpargatas	3.33	0.00	0.00	0.00	3.33	0.00	0.00	0.00
2003	SP Alpargatas	30.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00
1997	Sadia	4.78	0.00	3.00	30.32	4.78	0.00	3.00	30.32
1997	Samarco	4.50	0.00	0.00	0.00	4.50	0.00	0.00	0.00
1998	Saraiva	2.31	2.40	0.00	0.00	2.31	2.40	0.00	0.00
2003	Satipel	0.00	0.00	10.00	0.00	0.00	0.00	10.00	0.00
2000	SePETIBA	26.51	0.00	5.00	0.00	11.51	0.00	5.00	0.00
1999	Sudamerica	0.00	7.35	0.00	0.00	0.00	7.35	0.00	0.00
2001	Synteko	14.14	0.00	0.00	0.00	14.14	0.00	0.00	0.00
1998	Tecon Rio Grande	3.99	0.00	5.50	4.95	3.99	0.00	5.50	4.95
2004	Tecon Rio Grande	8.10	0.00	0.00	8.10	4.05	0.00	0.00	4.05
2001	Tecon Salvador	3.10	1.00	0.00	3.55	3.10	0.77	0.00	3.55
2003	Tecon Salvador	0.00	0.56	0.00	0.00	0.00	0.55	0.00	0.00
2004	TriBanco	10.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00
2002	UP Offshore	11.60	9.51	0.00	30.00	0.00	2.51	0.00	0.00
2002	Unibanco	22.75	0.00	0.00	0.00	22.75	0.00	0.00	0.00
2004	Unibanco	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total portfolio:		1,032.02	215.23	179.24	390.88	558.38	177.89	175.94	324.33

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
2000	BBA	0.01	0.00	0.00	0.00
1999	Cibrasec	0.00	0.00	0.00	0.00
2006	Ipiranga II	0.00	0.00	0.00	0.10
2002	Banco Itau-BBA	0.00	0.00	0.00	0.10
2004	TermoFortaleza	0.06	0.00	0.01	0.11
2006	Suzano Petroquim	0.00	0.00	0.00	0.14
Total pending commitment:		0.07	0.00	0.01	0.45

## Colombia:

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P089443	2006	CO Social Safety Net Project	86.40	0.00	0.00	0.00	0.00	86.40	0.01	0.00
P082520	2006	CO Sustainable Development Inv Project	7.00	0.00	0.00	0.00	0.00	7.00	0.00	0.00
P088857	2005	CO (CRL2) TAL to support the 2nd PSAL	2.00	0.00	0.00	0.00	0.00	1.77	0.84	0.00
P082973	2005	CO APL1-Water & Sanit. Sector Support	70.00	0.00	0.00	0.00	0.00	70.00	17.33	0.00
P082429	2005	CO-(APL1)Disaster VulnerabilityReduction	260.00	0.00	0.00	0.00	0.00	259.87	1.15	0.00
P082167	2005	CO Agricultural Transition Project	30.00	0.00	0.00	0.00	0.00	27.00	-2.44	0.00
P051306	2004	CO 1st APL PEACE AND DEV	30.00	0.00	0.00	0.00	0.00	25.54	9.70	0.00
P082466	2004	CO Integrated Mass Transit Systems	250.00	0.00	0.00	0.00	0.00	178.00	-8.00	0.00
P077757	2004	CO: CUND/MARCA EDUCATION QUALITY IMPROVE	15.00	0.00	0.00	0.00	0.00	12.75	4.05	0.00
P074726	2003	CO Bogota Urban Services Project	100.00	0.00	0.00	0.00	0.00	55.12	35.45	0.00
P074138	2003	CO-Higher Education - Improving Access	200.00	0.00	0.00	0.00	0.00	118.89	16.01	0.00
P041642	2002	CO PRODUCTIVE PARTNERSHIPS	32.00	0.00	0.00	0.00	10.00	11.64	13.01	0.36
P065937	2002	CO WATER SECTOR REF ASSISTANCE PROJECT	40.00	0.00	0.00	0.00	0.00	22.29	21.04	0.00
P057369	2002	CO Judicial Resolution Improvement Prj.	5.00	0.00	0.00	0.00	1.10	1.03	2.50	1.40
P063317	2001	GEF CO-HIGH ANDES	0.00	0.00	0.00	15.00	0.00	5.41	13.03	0.00
P040109	2001	CO PUBLIC FINANC. MANAGEMENT PROJECT II	35.47	0.00	0.00	0.00	0.00	19.13	19.13	0.00
P057326	2000	CO SIERRA NEVADA SUSTAINABLE DEVELOPMEN	5.00	0.00	0.00	0.00	0.00	0.35	0.33	-0.42
P050578	2000	CO RURAL EDUCATION	20.00	0.00	0.00	0.00	0.00	5.37	5.37	0.00
P044140	2000	CO CARTAGENA WTR SUPPLY & SEWERAGE ENV.	85.00	0.00	0.00	0.00	0.00	43.39	43.39	0.00
Total:			1,272.87	0.00	0.00	15.00	11.10	950.95	191.90	1.34

**COLOMBIA**  
**STATEMENT OF IFC's**  
**Held and Disbursed Portfolio**  
**In Millions of US Dollars**

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2003	AAA	18.24	0.00	0.00	0.00	18.24	0.00	0.00	0.00
2002	BCSC	0.00	7.00	0.00	0.00	0.00	7.00	0.00	0.00
2002	Bavaria	0.00	30.00	0.00	0.00	0.00	30.00	0.00	0.00
2001	CHMC	24.73	8.85	2.16	0.00	4.28	4.02	2.16	0.00
2004	Cartones America	20.73	0.00	0.00	0.00	18.73	0.00	0.00	0.00
2004	Carvajal S.A.	35.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00
2001	Cementos Caribe	2.70	0.00	0.00	5.18	2.70	0.00	0.00	5.18
	Corfinversiones	0.00	3.56	0.00	0.00	0.00	3.56	0.00	0.00
2003	DAVIVIENDA I	20.23	0.00	0.00	0.00	20.23	0.00	0.00	0.00
2002	Inversura	0.00	15.00	0.00	0.00	0.00	15.00	0.00	0.00
2002	Omimex Oil	22.50	0.00	5.00	0.00	3.20	0.00	5.00	0.00
1996	Promigas	0.63	0.00	0.00	0.00	0.63	0.00	0.00	0.00
2002	Proteccion	0.00	10.00	0.00	0.00	0.00	10.00	0.00	0.00
	SIE	0.00	0.20	0.00	0.00	0.00	0.20	0.00	0.00
2002	SIG	49.00	0.00	0.00	0.00	49.00	0.00	0.00	0.00
Total portfolio:		193.76	74.61	22.16	5.18	117.01	69.78	7.16	5.18

		Approvals Pending Commitment			
FY Approval	Company	Loan	Equity	Quasi	Partic.
2001	CHMC	0.00	0.02	0.00	0.00
2004	Bancafe	0.00	0.02	0.00	0.00
2003	DAVIVIENDA I	0.00	0.00	0.01	0.00
2004	Carvajal S.A.	0.00	0.00	0.02	0.00
2005	Colpatria Tier 2	0.02	0.02	0.00	0.00
2006	WWB Facility COL	0.02	0.00	0.00	0.00
Total pending commitment:		0.04	0.06	0.03	0.00

**Costa Rica:**

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P057857	2005	CR EQUITY AND EFFICIENCY OF	30.00	0.00	0.00	0.00	0.00	30.00	1.17	0.00

EDUCATION										
P073892	2002	CR-Health Sector Strengthening & Moderni	17.00	0.00	0.00	0.00	3.00	12.42	12.85	10.63
P052009	2000	CR ECOMARKETS	32.63	0.00	0.00	0.00	0.00	4.10	4.10	0.00
P061314	2000	GEF CR-ECOMARKETS	0.00	0.00	0.00	8.00	0.00	0.63	8.00	0.00
Total:			79.63	0.00	0.00	8.00	3.00	47.15	26.12	10.63

**COSTA RICA**  
**STATEMENT OF IFC's**  
**Held and Disbursed Portfolio**  
**In Millions of US Dollars**

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2001	Aeropuerto IJS	33.29	0.00	0.00	78.64	24.62	0.00	0.00	57.57
2005	Banco Banex	40.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00
2003	Cuscatlan Costa	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00
2002	Gutis	7.00	0.00	0.00	0.00	6.00	0.00	0.00	0.00
1994	Hidrozarcas	0.00	0.00	0.65	0.00	0.00	0.00	0.65	0.00
2001	INTERFIN	8.75	0.00	0.00	0.00	8.75	0.00	0.00	0.00
2004	INTERFIN	15.00	0.00	5.00	0.00	15.00	0.00	5.00	0.00
1999	Superunidos	19.38	0.00	0.00	0.00	6.38	0.00	0.00	0.00
Total portfolio:		123.42	0.00	10.65	78.64	80.75	0.00	10.65	57.57

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
Total pending commitment:		0.00	0.00	0.00	0.00

**Peru:**

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P088809	2005	PE Inst. Capacity for Decent. TAL	8.80	0.00	0.00	0.00	0.00	8.64	0.13	0.00
P082625	2005	PE Vilcanota Valley Rehab & Mgmt Project	4.98	0.00	0.00	0.00	0.00	4.98	0.00	0.00
P082588	2005	PE (APL2)Agric Research and Extension	25.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00
P078953	2005	PE-(CRL1)ACCOUNT. F/ DECENT. SOC.SCTR	7.80	0.00	0.00	0.00	0.00	6.22	-1.58	0.00
P074021	2004	PE LIMA TRANSPORT PROJECT	0.00	0.00	0.00	7.93	0.00	7.52	8.23	0.00
P073438	2004	PE Justice Services Improvement	12.00	0.00	0.00	0.00	0.00	12.00	7.75	0.00
P035740	2004	PE LIMA TRANSPORT PROJECT	45.00	0.00	0.00	0.00	0.00	42.88	42.88	0.00
P068250	2003	GEF PE PARTICIPATORY MGMT PROT AREAS	0.00	0.00	0.00	14.80	0.00	10.39	2.26	0.00
P065256	2003	PE NATIONAL RURAL WATER SUPPLY AND	50.00	0.00	0.00	0.00	0.00	47.42	18.92	0.00
P077788	2003	PE Trade Facil. and Prod. Improv. T. A.	20.00	0.00	0.00	0.00	0.00	18.97	9.97	0.00
P081834	2003	PE Lima Water Rehab Add'l Financing	20.00	0.00	0.00	0.00	0.00	19.30	9.45	0.00

P055232	2003	PE- Rural Education	52.50	0.00	0.00	0.00	0.00	48.49	1.49	0.00
P065200	2001	GEF PE Indigenous Management Prot. Areas	0.00	0.00	0.00	10.00	0.00	4.46	1.28	0.00
P044601	2001	PE SECOND RURAL ROADS PROJECT	50.00	0.00	0.00	0.00	0.00	19.22	14.82	0.00
P062932	2000	PE-HEALTH REFORM PROGRAM	80.00	0.00	0.00	0.00	0.00	8.90	-18.10	-18.10
Total:			376.08	0.00	0.00	32.73	0.00	284.39	97.50	- 18.10

**PERU**  
**STATEMENT OF IFC's**  
**Held and Disbursed Portfolio**  
**In Millions of US Dollars**

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2000	Agrokasa	3.60	0.00	0.00	0.00	3.60	0.00	0.00	0.00
1999	Alicorp	0.00	0.00	20.00	0.00	0.00	0.00	20.00	0.00
2005	Corp. Drokasa	7.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	EDYFICAR	3.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00
2002	FTSA	7.50	0.00	1.50	0.00	7.50	0.00	1.50	0.00
2003	Global MEF	0.00	0.00	4.00	0.00	0.00	0.00	0.50	0.00
2002	Gloria	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002/03	ISA Peru, SA	0.20	0.00	0.00	0.00	0.12	0.00	0.00	0.00
2001	Inka Terra	5.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
2004	Interbank-Peru	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002/03/05	Interseguro	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
2000/04	Laredo	0.30	0.00	0.00	0.00	0.08	0.00	0.00	0.00
1998	Latino Leasing	2.01	0.00	0.00	0.00	2.01	0.00	0.00	0.00
2002	MIBANCO	1.33	0.00	0.00	0.00	1.33	0.00	0.00	0.00
1999	Milkito	5.50	0.00	3.50	0.00	3.50	0.00	3.50	0.00
2005	Miraflores	10.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
2003	Norvial S.A.	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	Paramonga	13.01	0.00	0.00	10.98	13.01	0.00	0.00	10.98
2001	Peru OEH	9.40	0.00	0.00	0.00	5.40	0.00	0.00	0.00
1994	Peru Prvtzn Fund	0.00	7.90	0.00	0.00	0.00	7.90	0.00	0.00
1993/96/00/01	Quellaveco	0.00	0.75	0.00	0.00	0.00	0.72	0.00	0.00
1999	RANSA	6.25	0.00	0.00	0.00	6.25	0.00	0.00	0.00
2003	TIM Peru	70.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
2001	Tecnofil S.A.	4.50	2.00	0.00	0.00	4.50	2.00	0.00	0.00
2001	UPC	5.50	0.00	0.00	0.00	5.50	0.00	0.00	0.00
2005	USMP	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1993/99	Yanacocha	10.00	0.00	0.00	20.00	10.00	0.00	0.00	20.00
Total portfolio:		256.60	11.25	29.00	30.98	149.30	10.62	25.50	30.98

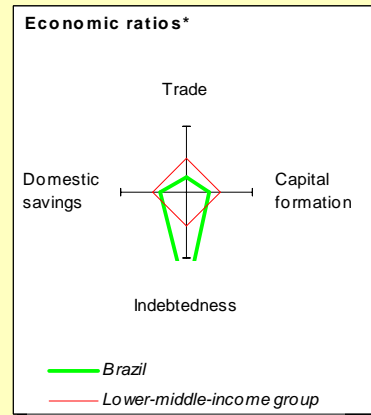
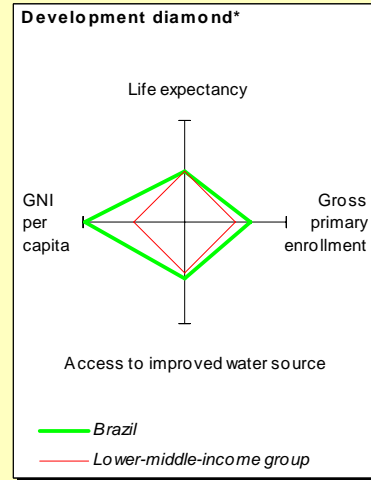
FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
2004	CMAC Arequipa	0.01	0.00	0.00	0.00
2005	Drokasa PCG	0.00	0.00	0.00	0.00
2004	EDYFICAR	0.00	0.00	0.00	0.00
2004	UPC II	0.00	0.00	0.00	0.00
Total pending commitment:		0.01	0.00	0.00	0.00

## Annex 15: Countries at a Glance

### LATIN AMERICA: Regional Capacity-Building in Biosafety

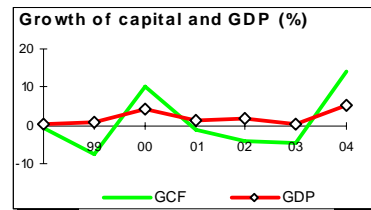
#### A. Brazil

POVERTY and SOCIAL	Brazil	Latin America & Carib.	Lower-middle-income	
<b>2004</b>				
Population, mid-year (millions)	178.7	541	2,430	
GNI per capita (Atlas method, US\$)	3,090	3,600	1,580	
GNI (Atlas method, US\$ billions)	552.7	1,948	3,847	
<b>Average annual growth, 1998-04</b>				
Population (%)	12	14	10	
Labor force (%)	15	0.9	0.7	
<b>Most recent estimate (latest year available, 1998-04)</b>				
Poverty (% of population below national poverty line)	22	..	..	
Urban population (% of total population)	83	77	49	
Life expectancy at birth (years)	69	71	70	
Infant mortality (per 1,000 live births)	33	28	33	
Child malnutrition (% of children under 5)	..	..	11	
Access to an improved water source (% of population)	89	89	81	
Literacy (% of population age 15+)	86	89	90	
Gross primary enrollment (% of school-age population)	148	123	114	
Male	153	126	115	
Female	144	122	113	
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>				
	<b>1984</b>	<b>1994</b>	<b>2003</b>	<b>2004</b>
GDP (US\$ billions)	209.0	546.2	505.7	604.0
Gross capital formation/GDP	15.7	22.1	19.8	21.3
Exports of goods and services/GDP	13.5	9.5	16.4	18.0
Gross domestic savings/GDP	21.4	22.5	23.4	25.8
Gross national savings/GDP	..	21.3	20.4	25.8
Current account balance/GDP	-0.1	-0.3	0.8	1.9
Interest payments/GDP	4.5	1.1	2.9	2.1
Total debt/GDP	49.7	27.9	46.6	35.2
Total debt service/exports	45.4	31.2	65.2	45.4
Present value of debt/GDP	..	..	50.2	..
Present value of debt/exports	..	..	292.1	..
	<b>1984-94</b>	<b>1994-04</b>	<b>2003</b>	<b>2004</b>
<i>(average annual growth)</i>				
GDP	2.0	2.1	0.5	5.2
GDP per capita	0.2	0.8	-0.7	4.0
Exports of goods and services	6.1	8.7	7.9	18.0



#### STRUCTURE of the ECONOMY

	1984	1994	2003	2004
<i>(% of GDP)</i>				
Agriculture	11.5	9.9	10.2	10.4
Industry	45.7	40.0	39.9	40.0
Manufacturing	33.9	23.7	11.1	..
Services	42.8	50.2	50.0	49.6
Household final consumption expenditure	70.4	59.6	56.7	55.4
General gov't final consumption expenditure	8.3	17.9	19.9	18.8
Imports of goods and services	7.9	9.2	12.8	13.4



	1984-94	1994-04	2003	2004
<i>(average annual growth)</i>				
Agriculture	2.2	4.1	5.5	5.3
Industry	0.7	1.6	-1.0	6.2
Manufacturing	-0.7	1.2	2.7	..
Services	2.6	1.7	-0.7	-5.5
Household final consumption expenditure	1.3	1.0	-3.3	4.3
General gov't final consumption expenditure	4.8	2.8	12.7	0.7
Gross capital formation	3.7	0.8	-4.5	14.3
Imports of goods and services	7.1	2.0	-1.9	14.3



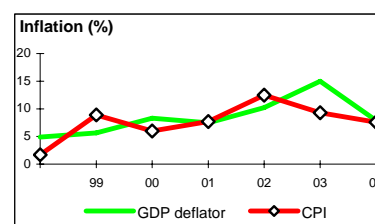
Note: 2004 data are preliminary estimates.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.



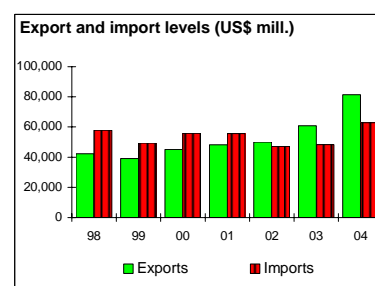
## PRICES and GOVERNMENT FINANCE

	1984	1994	2003	2004
<b>Domestic prices</b>				
(% change)				
Consumer prices	192.1	2,075.9	9.3	7.6
Implicit GDP deflator	212.8	2,239.1	15.0	7.9
<b>Government finance</b>				
(% of GDP, includes current grants)				
Current revenue	9.1	18.6	23.7	..
Current budget balance	-1.4	-15.8	3.0	..
Overall surplus/deficit	-1.9	..	3.8	..



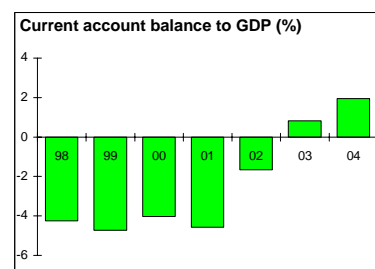
## TRADE

	1984	1994	2003	2004
(US\$ millions)				
Total exports (fob)	27,004	43,545	60,832	81,466
Coffee	1,771	2,500	3,456	4,759
Soybeans	2,570	4,135	4,290	5,395
Manufactures	14,530	27,891	39,653	52,948
Total imports (cif)	13,917	33,079	48,291	62,809
Food	..	2,014	924	1,058
Fuel and energy	7,345	2,339	6,579	10,317
Capital goods	2,151	12,690	10,350	12,132
Export price index (2000=100)	85	99	97	108
Import price index (2000=100)	45	70	76	90
Terms of trade (2000=100)	188	141	128	120



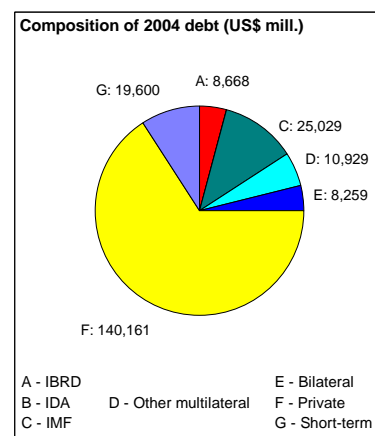
## BALANCE of PAYMENTS

	1984	1994	2003	2004
(US\$ millions)				
Exports of goods and services	28,938	46,702	83,531	109,059
Imports of goods and services	17,595	40,131	63,668	80,069
Resource balance	11,343	6,571	19,863	28,990
Net income	-11,472	-10,848	-18,552	-20,520
Net current transfers	10	2,588	2,867	3,268
Current account balance	-119	-1,689	4,178	11,738
Financing items (net)	5,488	9,037	-15,651	-15,377
Changes in net reserves	-5,369	-7,348	11,473	3,639
<b>Memo:</b>				
Reserves including gold (US\$ millions)	11,995	38,806	49,296	52,935
Conversion rate (DEC, local/US\$)	6.72E-10	0.6	3.1	2.9



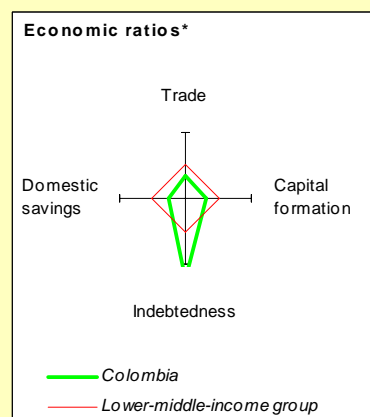
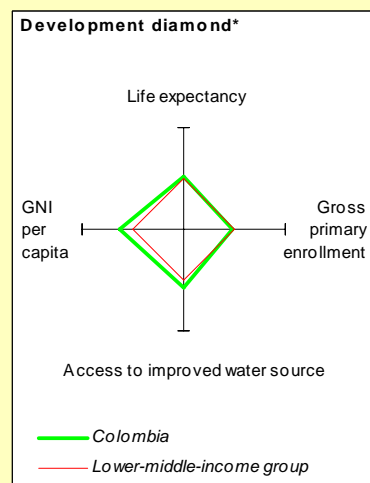
## EXTERNAL DEBT and RESOURCE FLOWS

	1984	1994	2003	2004
(US\$ millions)				
Total debt outstanding and disbursed	103,863	152,433	235,431	212,646
IBRD	3,969	6,311	8,588	8,668
IDA	0	0	0	0
Total debt service	13,710	15,940	56,718	50,992
IBRD	669	1,883	2,010	1,843
IDA	0	0	0	0
Composition of net resource flows				
Official grants	41	69	82	..
Official creditors	1,536	-2,293	-2,272	-2,788
Private creditors	4,550	4,671	316	-17,738
Foreign direct investment (net inflows)	1,594	3,072	10,144	..
Portfolio equity (net inflows)	0	7,280	2,973	..
World Bank program				
Commitments	306	1,024	1,150	1,215
Disbursements	1,300	640	1,291	1,447
Principal repayments	332	1,346	1,633	1,564
Net flows	968	-706	-342	-116
Interest payments	338	537	377	280
Net transfers	631	-1,242	-719	-396



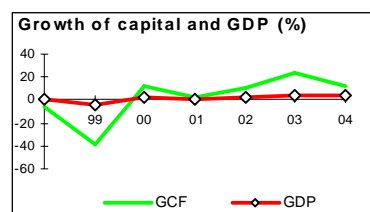
## B. Colombia

<b>POVERTY and SOCIAL</b>	<b>Colombia</b>	<b>Latin America &amp; Carib.</b>	<b>Lower-middle-income</b>		
<b>2004</b>					
Population, mid-year (millions)	45.3	541	2,430		
GNI per capita (Atlas method, US\$)	2,010	3,600	1,580		
GNI (Atlas method, US\$ billions)	90.9	1,948	3,847		
<b>Average annual growth, 1998-04</b>					
Population (%)	1.7	1.4	1.0		
Labor force (%)	2.5	0.9	0.7		
<b>Most recent estimate (latest year available, 1998-04)</b>					
Poverty (% of population below national poverty line)	52	..	..		
Urban population (% of total population)	77	77	49		
Life expectancy at birth (years)	72	71	70		
Infant mortality (per 1,000 live births)	18	28	33		
Child malnutrition (% of children under 5)	7	..	11		
Access to an improved water source (% of population)	92	89	81		
Literacy (% of population age 15+)	92	89	90		
Gross primary enrollment (% of school-age population)	110	123	114		
Male	111	126	115		
Female	110	122	113		
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>					
	<b>1984</b>	<b>1994</b>	<b>2003</b>	<b>2004</b>	
GDP (US\$ billions)	38.3	81.7	80.1	97.7	
Gross capital formation/GDP	19.0	25.5	18.2	18.8	
Exports of goods and services/GDP	11.9	15.0	20.4	20.8	
Gross domestic savings/GDP	18.4	19.6	16.0	17.4	
Gross national savings/GDP	15.2	21.2	15.8	16.8	
Current account balance/GDP	-5.4	-4.5	-1.7	-1.2	
Interest payments/GDP	2.5	2.1	3.1	2.5	
Total debt/GDP	31.5	26.9	46.2	38.6	
Total debt service/exports	33.8	45.3	53.7	39.0	
Present value of debt/GDP	..	..	45.3	..	
Present value of debt/exports	..	..	225.1	..	
	<b>1984-94</b>	<b>1994-04</b>	<b>2003</b>	<b>2004</b>	<b>2004-08</b>
(average annual growth)					
GDP	4.3	1.6	4.1	4.1	4.0
GDP per capita	2.3	-0.3	2.4	2.5	2.5
Exports of goods and services	9.4	4.2	3.5	10.2	4.4



### STRUCTURE of the ECONOMY

	<b>1984</b>	<b>1994</b>	<b>2003</b>	<b>2004</b>
<i>(% of GDP)</i>				
Agriculture	17.8	16.1	12.1	11.5
Industry	34.0	31.4	29.3	30.7
Manufacturing	22.6	16.1	14.2	14.3
Services	48.2	52.5	58.6	57.8
Household final consumption expenditure	70.6	65.7	63.4	62.2
General gov't final consumption expenditure	11.0	14.7	20.6	20.4
Imports of goods and services	12.5	20.9	22.7	22.3
<i>(average annual growth)</i>				
Agriculture	2.2	-0.2	2.5	1.5
Industry	4.2	-0.3	6.4	4.7
Manufacturing	2.4	0.2	3.5	4.2
Services	4.2	5.5	3.3	4.1
Household final consumption expenditure	4.1	1.0	2.4	4.0
General gov't final consumption expenditure	5.4	4.9	0.6	3.3
Gross capital formation	5.1	-3.2	23.6	12.4
Imports of goods and services	10.5	0.0	9.7	16.7



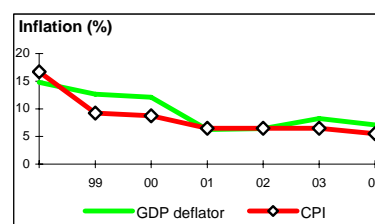
Note: 2004 data are preliminary estimates.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.



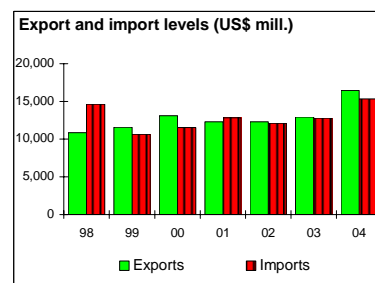
## PRICES and GOVERNMENT FINANCE

	1984	1994	2003	2004
<b>Domestic prices</b>				
(% change)				
Consumer prices	16.0	22.6	6.5	5.5
Implicit GDP deflator	22.2	45.4	8.2	7.1
<b>Government finance</b>				
(% of GDP, includes current grants)				
Current revenue	7.8	11.6	13.7	14.4
Current budget balance	-1.2	1.5	-4.6	-4.9
Overall surplus/deficit	-2.6	-1.4	-5.3	-5.4



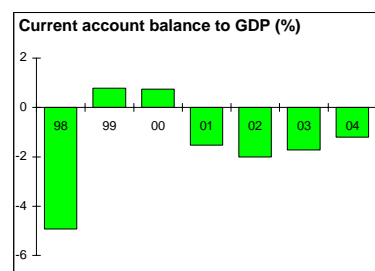
## TRADE

	1984	1994	2003	2004
(US\$ millions)				
Total exports (fob)	3,728	8,816	12,946	16,464
Coffee	1,765	1,990	809	949
Petroleum	480	1,313	3,383	4,180
Manufactures	638	2,803	4,924	6,616
Total imports (cif)	4,492	11,927	12,792	15,324
Food	207	923	1,417	1,554
Fuel and energy	468	308	239	262
Capital goods	1,587	5,072	3,671	4,110
Export price index (2000=100)	6	38	41	42
Import price index (2000=100)	6	37	41	39
Terms of trade (2000=100)	105	102	98	108



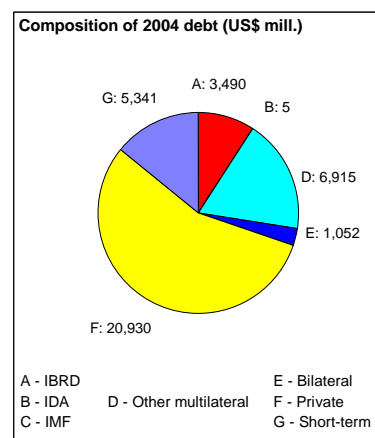
## BALANCE of PAYMENTS

	1984	1994	2003	2004
(US\$ millions)				
Exports of goods and services	4,557	10,630	14,845	18,700
Imports of goods and services	5,407	13,914	16,114	19,333
Resource balance	-850	-3,284	-1,269	-633
Net income	-1,537	-1,453	-3,446	-4,193
Net current transfers	309	1,069	3,333	3,647
Current account balance	-2,078	-3,668	-1,382	-1,179
Financing items (net)	2,470	3,474	1,566	-1,362
Changes in net reserves	-392	194	-184	2,541
<b>Memo:</b>				
Reserves including gold (US\$ millions)	..	7,862	10,920	13,537
Conversion rate (DEC, local/US\$)	100.8	826.5	2,877.7	2,628.6



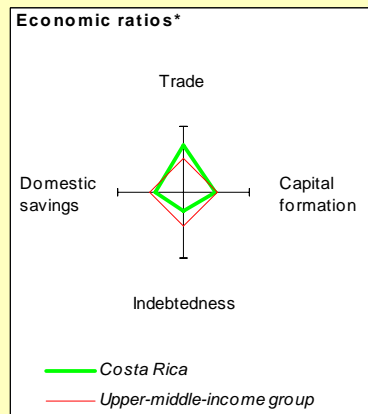
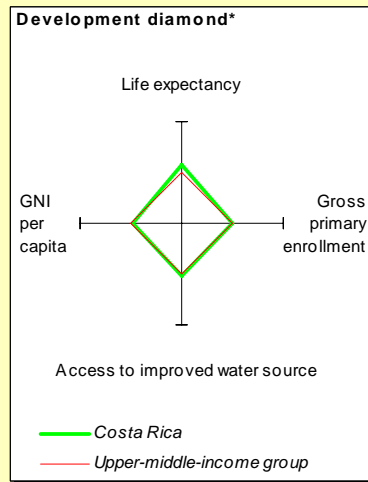
## EXTERNAL DEBT and RESOURCE FLOWS

	1984	1994	2003	2004
(US\$ millions)				
Total debt outstanding and disbursed	12,039	21,940	36,997	37,733
IBRD	1,578	2,629	3,241	3,490
IDA	19	12	5	5
Total debt service	1,623	5,570	8,645	7,863
IBRD	274	1,054	357	407
IDA	1	1	1	1
Composition of net resource flows				
Official grants	15	45	104	0
Official creditors	618	-467	2,052	84
Private creditors	748	2,284	-1,315	-1,297
Foreign direct investment (net inflows)	584	1,446	1,746	0
Portfolio equity (net inflows)	0	478	-52	0
World Bank program				
Commitments	740	159	1,115	582
Disbursements	462	310	987	455
Principal repayments	153	837	212	256
Net flows	308	-527	775	199
Interest payments	121	218	146	152
Net transfers	187	-745	629	47



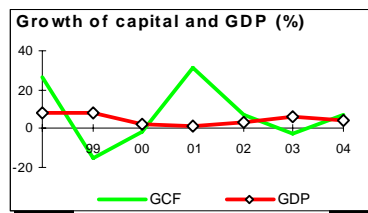
## D. Costa Rica

	Costa Rica	Latin America & Carib.	Upper-middle-income		
<b>POVERTY and SOCIAL</b>					
<b>2004</b>					
Population, mid-year (millions)	4.1	541	576		
GNI per capita (Atlas method, US\$)	4,670	3,600	4,770		
GNI (Atlas method, US\$ billions)	19.0	1948	2,748		
<b>Average annual growth, 1998-04</b>					
Population (%)	18	14	0.8		
Labor force (%)	2.3	0.9	-0.9		
<b>Most recent estimate (latest year available, 1998-04)</b>					
Poverty (% of population below national poverty line)	..	..	..		
Urban population (% of total population)	61	77	72		
Life expectancy at birth (years)	79	71	69		
Infant mortality (per 1,000 live births)	8	28	24		
Child malnutrition (% of children under 5)	..	..	..		
Access to an improved water source (% of population)	97	89	93		
Literacy (% of population age 15+)	96	89	91		
Gross primary enrollment (% of school-age population)	108	123	106		
Male	108	126	108		
Female	107	122	106		
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>					
	1984	1994	2003	2004	
GDP (US\$ billions)	3.7	10.6	17.5	18.4	
Gross capital formation/GDP	22.7	20.0	20.1	20.8	
Exports of goods and services/GDP	34.4	35.6	46.5	44.7	
Gross domestic savings/GDP	23.1	14.5	18.2	18.8	
Gross national savings/GDP	15.7	14.6	14.5	17.2	
Current account balance/GDP	-7.7	-4.9	-5.5	-5.2	
Interest payments/GDP	6.7	1.8	1.5	..	
Total debt/GDP	109.3	37.0	31.0	..	
Total debt service/exports	32.9	12.8	9.9	..	
Present value of debt/GDP	..	..	33.4	..	
Present value of debt/exports	..	..	68.4	..	
	1984-94	1994-04	2003	2004	2004-08
<i>(average annual growth)</i>					
GDP	4.8	4.4	6.5	4.2	3.0
GDP per capita	2.0	2.4	4.9	2.7	1.6
Exports of goods and services	10.3	7.6	12.5	-4.8	6.0



### STRUCTURE of the ECONOMY

	1984	1994	2003	2004
<i>(% of GDP)</i>				
Agriculture	24.9	13.4	8.8	8.7
Industry	34.5	29.6	28.7	28.5
Manufacturing	26.4	21.7	21.2	21.0
Services	40.6	57.1	62.5	62.8
Household final consumption expenditure	613	71.7	67.3	71.4
General gov't final consumption expenditure	15.6	13.8	14.5	9.7
Imports of goods and services	34.0	41.1	48.5	46.7



	1984-94	1994-04	2003	2004
<i>(average annual growth)</i>				
Agriculture	4.1	3.0	7.4	2.8
Industry	4.4	5.0	8.0	3.3
Manufacturing	4.5	5.1	8.7	3.3
Services	5.1	4.5	5.8	3.7
Household final consumption expenditure	4.8	2.9	2.9	3.4
General gov't final consumption expenditure	2.3	2.2	-0.2	8.1
Gross capital formation	8.9	6.2	-2.6	6.8
Imports of goods and services	10.5	5.3	1.7	-3.3



Note: 2004 data are preliminary estimates.

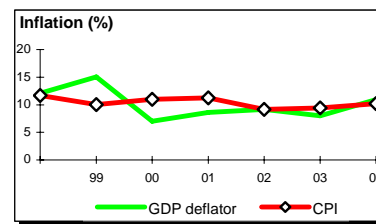
This table was produced from the Development Economics LDB database.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will



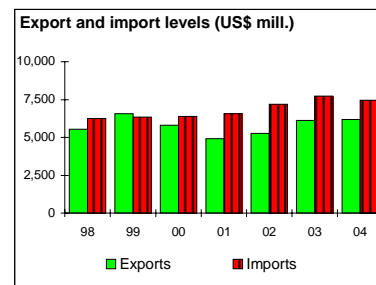
## PRICES and GOVERNMENT FINANCE

	1984	1994	2003	2004
<b>Domestic prices</b> (% change)				
Consumer prices	12.0	13.5	9.4	10.2
Implicit GDP deflator	16.7	15.5	8.0	10.9
<b>Government finance</b> (% of GDP, includes current grants)				
Current revenue	..	..	21.9	21.9
Current budget balance	..	..	-0.9	-0.8
Overall surplus/deficit	..	..	-5.1	-5.5



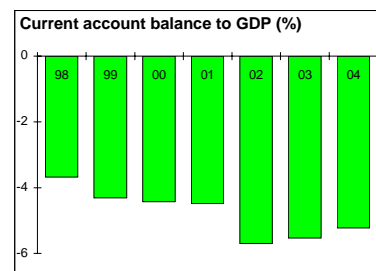
## TRADE

	1984	1994	2003	2004
(US\$ millions)				
Total exports (fob)	969	2,882	6,125	6,177
Coffee	267	308	194	..
Bananas	251	561	553	..
Manufactures	256	1,551	4,715	4,710
Total imports (cif)	1,070	3,816	7,723	7,445
Food	157	614	926	..
Fuel and energy	162	236	446	..
Capital goods	209	679	1,421	1,461
Export price index (2000=100)	11	49	129	140
Import price index (2000=100)	10	45	138	146
Terms of trade (2000=100)	108	108	94	96



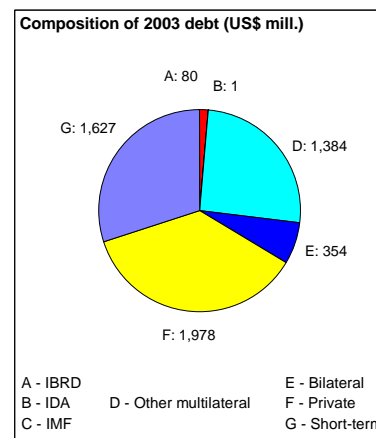
## BALANCE of PAYMENTS

	1984	1994	2003	2004
(US\$ millions)				
Exports of goods and services	1,252	3,815	8,177	8,318
Imports of goods and services	1,263	4,348	8,508	8,684
Resource balance	-11	-533	-331	-366
Net income	-302	-143	-849	-805
Net current transfers	32	155	213	211
Current account balance	-281	-520	-967	-960
Financing items (net)	277	526	1,307	810
Changes in net reserves	4	-6	-340	150
<b>Memo:</b>				
Reserves including gold (US\$ millions)	-12	594	1,601	1,451
Conversion rate (DEC, local/US\$)	44.5	157.1	398.7	437.9



## EXTERNAL DEBT and RESOURCE FLOWS

	1984	1994	2003	2004
(US\$ millions)				
Total debt outstanding and disbursed	3,999	3,909	5,424	..
IBRD	191	323	80	..
IDA	4	3	1	..
Total debt service	425	507	841	..
IBRD	33	83	24	..
IDA	0	0	0	..
Composition of net resource flows				
Official grants	108	35	24	..
Official creditors	126	-8	94	..
Private creditors	-23	-61	265	..
Foreign direct investment (net inflows)	56	298	577	..
Portfolio equity (net inflows)	0	0	0	..
World Bank program				
Commitments	0	0	0	..
Disbursements	36	11	7	..
Principal repayments	18	56	18	..
Net flows	18	-46	-12	..
Interest payments	15	27	6	..
Net transfers	3	-72	-18	..

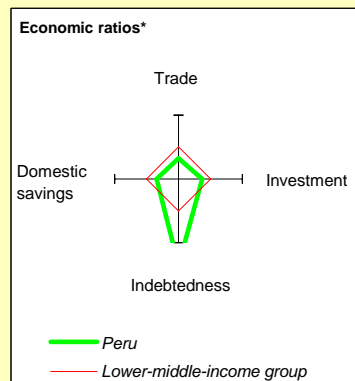
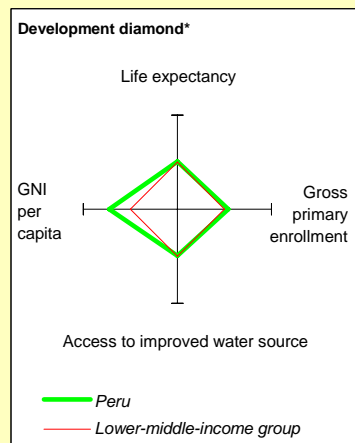


Note: This table was produced from the Development Economics LDB database.

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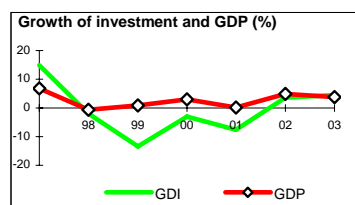
## E. Peru

	Peru	Latin America & Carib.	Lower-middle-income		
<b>POVERTY and SOCIAL</b>					
<b>2003</b>					
Population, mid-year (millions)	27.1	534	2,655		
GNI per capita (Atlas method, US\$)	2,140	3,260	1,480		
GNI (Atlas method, US\$ billions)	58.2	1,741	3,934		
<b>Average annual growth, 1997-03</b>					
Population (%)	1.5	1.5	0.9		
Labor force (%)	2.8	2.1	1.2		
<b>Most recent estimate (latest year available, 1997-03)</b>					
Poverty (% of population below national poverty line)	49	..	..		
Urban population (% of total population)	74	77	50		
Life expectancy at birth (years)	70	71	69		
Infant mortality (per 1,000 live births)	30	28	32		
Child malnutrition (% of children under 5)	7	..	11		
Access to an improved water source (% of population)	80	86	81		
Illiteracy (% of population age 15+)	15	11	10		
Gross primary enrollment (% of school-age population)	121	129	112		
Male	122	131	113		
Female	121	126	111		
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>					
	<b>1983</b>	<b>1993</b>	<b>2002</b>	<b>2003</b>	
GDP (US\$ billions)	19.1	34.8	56.5	60.6	
Gross domestic investment/GDP	24.3	19.3	18.8	18.8	
Exports of goods and services/GDP	19.7	12.5	16.5	17.7	
Gross domestic savings/GDP	24.5	15.4	18.0	18.9	
Gross national savings/GDP	..	12.9	17.2	17.5	
Current account balance/GDP	-6.8	-6.6	-2.0	-1.8	
Interest payments/GDP	2.4	2.2	2.0	2.1	
Total debt/GDP	59.3	67.7	49.8	49.3	
Total debt service/exports	34.0	59.4	32.5	23.8	
Present value of debt/GDP	..	..	52.7	..	
Present value of debt/exports	..	..	286.4	..	
	<b>1983-93</b>	<b>1993-03</b>	<b>2002</b>	<b>2003</b>	<b>2003-07</b>
(average annual growth)					
GDP	-0.7	3.4	4.9	3.8	4.4
GDP per capita	-2.7	1.6	3.2	2.2	2.8
Exports of goods and services	1.0	8.4	7.2	5.0	6.8

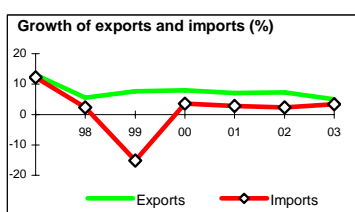


### STRUCTURE of the ECONOMY

	1983	1993	2002	2003
<i>(% of GDP)</i>				
Agriculture	8.6	8.2	9.5	9.3
Industry	35.2	25.3	26.0	26.5
Manufacturing	30.3	16.2	14.8	14.6
Services	40.1	57.3	54.9	54.6
Private consumption	64.3	76.5	71.7	71.0
General government consumption	11.2	8.0	10.3	10.1
Imports of goods and services	19.5	16.3	17.3	17.6



	1983-93	1993-03	2002	2003
<i>(average annual growth)</i>				
Agriculture	1.4	5.2	6.0	1.5
Industry	0.3	2.6	6.6	5.4
Manufacturing	-0.3	2.6	4.0	2.1
Services	-1.5	3.5	4.0	3.1
Private consumption	-0.8	3.0	4.7	3.1
General government consumption	-1.6	3.8	-0.8	2.9
Gross domestic investment	1.5	1.0	3.5	4.5
Imports of goods and services	2.6	3.7	2.3	3.3



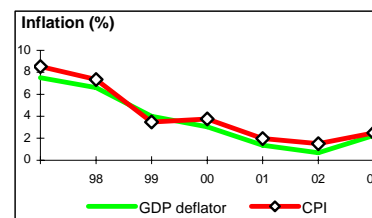
Note: 2003 data are preliminary estimates.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.



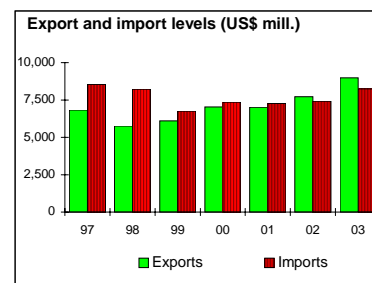
## PRICES and GOVERNMENT FINANCE

	1983	1993	2002	2003
<b>Domestic prices</b> (% change)				
Consumer prices	110.8	48.6	1.5	2.5
Implicit GDP deflator	104.0	47.1	0.7	2.2
<b>Government finance</b> (% of GDP, includes current grants)				
Current revenue	..	13.6	14.4	15.0
Current budget balance	..	0.1	-0.3	0.0
Overall surplus/deficit	..	-3.6	-2.1	-1.8



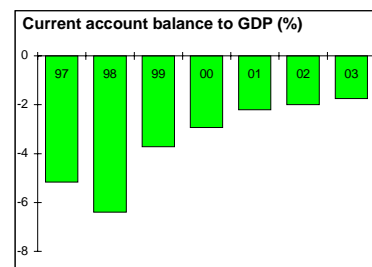
## TRADE

(US\$ millions)	1983	1993	2002	2003
Total exports (fob)	..	3,516	7,723	8,986
Copper	..	658	1,187	1,261
Fishmeal	..	542	823	742
Manufactures	..	1,007	2,256	2,602
Total imports (cif)	..	4,123	7,417	8,255
Food	..	476	546	564
Fuel and energy	..	321	975	1,377
Capital goods	..	1,143	1,842	1,984
Export price index (1995=100)	..	79	82	88
Import price index (1995=100)	..	88	99	104
Terms of trade (1995=100)	..	89	83	84



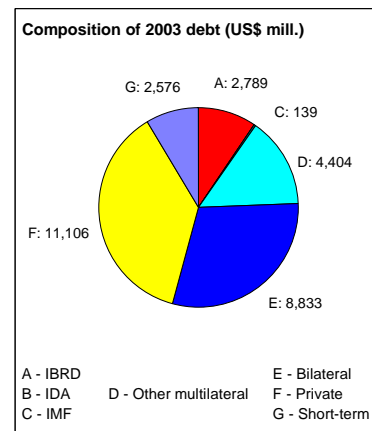
## BALANCE of PAYMENTS

(US\$ millions)	1983	1993	2002	2003
Exports of goods and services	3,726	4,353	9,267	10,664
Imports of goods and services	3,687	5,535	9,947	10,864
Resource balance	39	-1,182	-680	-200
Net income	-1,130	-1,619	-1,491	-2,082
Net current transfers	-219	508	1,043	1,221
Current account balance	-1,310	-2,293	-1,127	-1,061
Financing items (net)	1,276	2,702	2,112	1,657
Changes in net reserves	34	-409	-985	-596
<b>Memo:</b>				
Reserves including gold (US\$ millions)	0	3,842	9,989	10,662
Conversion rate (DEC, local/US\$)	1.63E-6	2.0	3.5	3.5



## EXTERNAL DEBT and RESOURCE FLOWS

(US\$ millions)	1983	1993	2002	2003
Total debt outstanding and disbursed	11,342	23,578	28,105	29,847
IBRD	527	1,369	2,609	2,789
IDA	0	0	0	0
Total debt service	1,307	2,758	3,379	2,547
IBRD	68	1,057	304	278
IDA	0	0	0	0
Composition of net resource flows				
Official grants	95	236	164	..
Official creditors	400	668	273	-7
Private creditors	913	178	749	1,184
Foreign direct investment	38	759	2,156	1,317
Portfolio equity	0	1,226	-9	..
World Bank program				
Commitments	211	392	100	474
Disbursements	77	975	146	344
Principal repayments	28	574	163	163
Net flows	49	401	-17	181
Interest payments	40	483	141	115
Net transfers	9	-82	-158	66



**Annex 16: STAP Roster and Inter-Sessional Work Program Review**  
**LATIN AMERICA: Regional Capacity-Building in Biosafety**

**Section B**

**Reviewer: Dr. Ariel Alvarez Morales (Research Specialist, Center for Research and Advanced Studies, Department of Genetic Engineering, Guanajuato Campus, Mexico - March 6, 2006).**

The document presented describes a proposed biosafety capacity-building operation in five Latin American countries, grant-funded by a full-sized GEF contribution of US\$5.0 million channelled through the Colombia-based, International Centre for Tropical Agriculture (CIAT), and with an estimated total budget of US\$12.9 million.

“The global objective is to contribute to the ability of Mexico, Brazil, Colombia, Peru and Costa Rica to implement the Convention on Biological Diversity (CBD) and the Cartagena Protocol (CP) on biosafety to reduce the environmental risks of modern biotechnology, ensuring an adequate level of protection in the area of transfer, handling and use of transgenic crops in centres of crop biodiversity.”

The proposed project is regional in scope, and pretends to generate standardized, science-based mechanisms and methodologies for biosafety risk, cost and benefit assessment, and project them in organized, accessible form - as an integral part of project activities - to competent authorities, biosafety practitioners, organized civil society and the general public.

**COMMENTS**

It is mentioned in the document that “In 2004, Latin America grew 30% (23 million hectares) of the total global area of transgenic crops, second only to the United States (48 million ha). This rapid growth is the logical outcome of the manifest delivery of economic benefits for the agricultural economy of the region, by the initial products of biotechnology”. However, this statement fails to recognize that it is only Argentina, not an adherent to the CP, the sole contributor to this significant percentage of transgenic crop adoption in the area.

Nevertheless, this fact indicates that the rest of Latin America has lagged behind considerably, and this is, at least in part, due to the lack of an efficient biosafety framework in the rest of the countries capable of addressing the issues required to responsibly commercialize GMOs. In this respect, no doubt the five countries involved in the present proposal could benefit significantly by implementing a sound mechanism to efficiently address the responsibilities derived from their national legal systems as well as the responsibilities acquired with the international community.

**RESPONSE (IA & EA):**

*In 2005, the total area of transgenic crops grown in Latin America and the Caribbean (LAC) accounted for 28.8 million hectares (32% of the total from 6 countries relative to the global area of 90 million ha). Of the 28.8 million ha in LAC, 17.1 million ha were in Argentina (59%), 9.4 million ha in Brazil (33%), 1.8 million ha in Paraguay, 0.3 million ha in Uruguay, 0.1 million ha in Mexico, and about 0.05 million ha in Colombia and Honduras (Clive James. ISAAA Brief Report 34 Global Status of Commercialized Biotech/GM Crops: 2005). Therefore transgenic crop production includes not only Argentina but also CP compliant countries. A retrospective analysis of the increase in number of countries and the area of GM crops grown from 2000 to 2005, indicate that while in 2000 LAC grew 10 million ha just in Argentina (23% of the global area), by 2005 LAC region grew 32% of the global area (9% increase) in 7*

*countries, while Brazil was the third principal adopter after US and Argentina, followed by Canada and China. The increase in adoption of transgenic crops (mainly soybeans) in Brazil did not follow a step-wise mechanism due to the lack of an efficient biosafety framework resulting in a rapid non-authorized introduction as a response to pressure from farmer groups which then triggered the authorization process. This project aims to facilitate the establishment of an efficient biosafety framework in the participating countries by strengthening the technical capacity for a science-based decision process in order to implement the already existing legal framework in these countries and allowing them to comply with International Treaty commitments in particular the implementation of the Cartagena Protocol.*

*It is also necessary to recognize that mega diverse countries face unique and difficult problems when addressing potential environmental risks. This again is the case of the five countries presenting the proposal.*

*In support of this proposal it is necessary to acknowledge that there is unquestionable capacity, quality and professionalism involved in the participating institutions, both in terms of infrastructure and human resources. The proposal seems sound and well balanced between the countries and between the proposed activities. However, I have two major concerns about the projection of the results obtained in terms of the future sustainability of a practical and efficient biosafety framework in the countries involved.*

## **MAJOR CONCERNS**

It is repeatedly mentioned in the proposal that the project will finance training in environmental risk assessment, risk management and risk communication for competent authorities. Who are they going to train? In most of these countries the different Ministries or Secretaries rely heavily on consultative committees for reviewing requests to release GMOs, and provide an opinion that most often is the result of a scientific exercise that includes risk assessment, without anyone being a professional risk assessor, although some of them may have an in-depth knowledge about risk assessment.

Nevertheless, the scientists that are members of such consultative committees can only devote a small fraction of their time to these activities and very often they are unable to participate as often as would be required. To have a regulatory system that is based on scientific data, as this is the fundamental base of a risk assessment, without a capable group of professional full-time risk assessors and risk managers does not seem congruent.

The training of academics, field technicians, laboratory technicians, etc., is important, however, these people would not be involved in the most important aspects that the CP demands. Among other activities:

- Reviewing risk assessment data presented as part of request for trans-boundary movement or field releases of LMOs.
- Reviewing or proposing risk management measures.
- Writing scientifically sound decision documents.
- Providing accurate information to the BCH in compliance to the CP

Furthermore, the professional risk assessors and risk managers from the different government entities- such as agriculture, environment and health- should be the persons responsible for maintaining the links and communication between the corresponding entities in the five countries involved in the proposal.

I do not see in the proposal any reference to this issue. I do not know how many full-time professional risk assessors are there in each country, or how many full-time government professionals will be trained to fulfil this role.

Are there enough of these people in the appropriate offices within governments to ensure continuity and an efficient and prompt response to the demands of the CP? If not, is there a commitment of the governments to provide or open new positions for these people? How many? When?

Without the involvement and decisive commitment of the government entities involved I cannot see how this project can achieve their main goals. One can see in the table describing the “Status of Biosafety in participating Countries” that in some cases work in this area began as early as 1988, with Peru being the late entry in 1995. So the experience these countries have in Biosafety ranges from around 17 to 10 years. Why they have not put in place yet an efficient system to regulate GMOs?

I am convinced one of the major problems has been the lack of government commitment and the heavy dependence on scientific consultative committees to do the work government officials should be doing on a full-time base, with the cooperation of the scientific consultative committees. If this situation is not resolved to begin with, there is not going to be enough capacity building, database support or scientific data obtained if there is not an adequate end-user.

**RESPONSE (IA & EA):**

*The project fosters regional collaboration between diverse country participants and finances training for biosafety practitioners and competent authorities, standardization and sustainability of methodologies and mechanisms being the primary objective (Annex 4 of the PAD). In the description of **Component 2: Strengthening biosafety decision-making capacity**: it is indicated that the project will build biosafety capacity for decision-making entities (competent authorities) and for practitioners (i.e. public and private research community), through participatory scientific and technical training on risk assessment, risk management and risk communication, using the knowledge generated by biosafety practitioners in this project from **Component 1: Strengthening technical capacity in knowledge generation for biosafety risk assessment and management**) in a collaborative effort across the five countries.. The Core participants include the implementing bodies of national biosafety frameworks (i.e. national biosafety committees) and the biotechnology R&D community (i.e. transgenic crop developers, plant breeders, and other relevant agricultural science professionals, especially those working in public sector research). The project seeks to establish efficient mechanisms of communication and cooperation between those providing the technical assistance (generating biosafety information) and those responsible for the decision making process, instead of just concentrating on training of the National authorities as other initiatives has done with very limited impact. Because of lack of resources the National competent authorities are incapable of conducting the proper technical assessment themselves in a proper manner. The project proposes to strengthen the capacity that already exist in the countries and benefit from multi-country collaboration to facilitate science-based analysis and decision-making. The commitment of the Governments of each participating project country is clear since in all cases, the National competent authority for the biosafety decision process is involved in addition to the main National Technical Institutions used as a reference for the technical and informed knowledge based process (Table 6.1 from the PAD), and as indicated by the corresponding country GEF Focal Point endorsement letters.*

Another point that seems important to me, and that to a certain extent is a consequence of the problem mentioned above is that, in these countries biosafety authorities are usually reactive, and very seldom proactive. The fact that this proposal wants to focus only on plant LMOs is worrying:

“Although the CP Protocol sets a framework for the biosafety aspects of all living organisms resulting from modern biotechnology, the most important field of application in the near-medium term is the biosafety of agricultural crops modified by modern biotechnology, human resource development,

database development, baseline information about crops (especially in mega-diversity areas) and expertise in methodologies for risk assessment are cited explicitly by the CP as priority areas for development”

I need to disagree with the idea that agricultural crops modified by modern biotechnology are the most important in the near-medium term. These are the present! And the near and medium term challenges will be crops producing pharmaceuticals, transgenic fish, and transgenic arthropods. Therefore I see the need to include these areas in the training program proposed rather than waiting to have the first proposals for release of these types of LMOs on the desk of the regulator and then starting to think about how to address these issues.

**RESPONSE:**

*The project Global Objective is to support implementation of the Cartagena Protocol (CP) on biosafety, reducing the environmental risks of modern biotechnology, with positive impact on global biodiversity. Plants producing pharmaceuticals are outside the scope of the CP, which are regulated by other International Treaties, thus will not be addressed by this project. In the case of transgenic animals although recognized as important in the LAC countries, currently are still under early experimental phases with no clear evidence of commercialization in the near future. The legal framework regulating these organisms is not present or is in a preliminary stage in the participating countries. In contrast, all 5 participating countries already have a legal framework for regulating transgenic plants, have some experience in their implementation and because of that, have been able to identify the main bottlenecks to fulfill this task. Due to broader adoption of such transgenic crops, these countries have increased pressures to comply with the CP where technically sound and safe trans-boundary movement of crop plants will be the main asset. Although the broad scope of transgenic organisms and the need of their proper regulation is recognized, the dilution of the limited resources requested in the project beyond plants will compromise the quality, impact and sustainability of the deliverables outputs.*

**RECOMMENDATIONS**

**R.1.** The project, as presented, can be of great value to the involved countries and to the whole region, and such efforts should be given high priority in terms of finance. I believe the project should be financed but the project should seriously consider as a priority the training of personnel from the different government entities involved to produce professional risk evaluators/risk managers, and the governments should clearly state their commitment to this effort by providing appropriate personnel or to make available the minimum number of required positions.

**R.2.** Further, training should not be constrained to plant issues but should open up to include animals and plants producing pharmaceuticals.

## Section B.

### Comments from the Inter-Sessional Work Program

#### Latin America: Multi-Country Capacity-Building in Biosafety, World Bank (implemented by the International Centre for Tropical Agriculture, CIAT), GEF \$5.00m

#### **Recommendation of the GEF Secretariat: Resubmit for CEO Endorsement; Note “Changes outlined should be made during further planning steps and during project implementation“**

The Latin America Multi-country capacity building in biosafety Project implemented by the International Centre for Tropical Agriculture (CIAT, a CGIAR centre<sup>30</sup>), based in Cali, Colombia, and its financing partner, the World Bank, based in Washington DC appreciates the comments from the German Council Member on their project proposal and is in full agreement with the recommendations. Therefore the project team responses to the recommendations of the GEF Secretariat are given below. The GEF Comments are in bold and the comments from the German Council Member are quoted below that and are followed by the response of the project team in italics. Where applicable the Project Brief has been updated to reflect the modifications made by the team to address the issues identified.

#### Comment 1.

Agreeing with STAP Roster Review, Germany strongly recommends expanding capacity building activities of project to other GMOs likely to be released in near future

#### Detailed Comment:

We support the view of Dr. Ariel Alvarez Morales that proper biosafety systems should enable the governments to deal with future applications for the release of pharmaceutical producing GE plants (which are already tested in Chile) and transgenic animals, notably fish (which already has been developed in Cuba). It is not advisable to follow the approach suggested for example by the biotechnology industry group CropLife that advocates the setting up of biosafety systems only for agricultural plants.<sup>31</sup> Governments must be able to build up biosafety capacity BEFORE the actual applications for deliberate releases of various GMOs are submitted to them. **The response of the project applicants that "plants producing pharmaceuticals are outside the scope of the CP" is wrong. Art. 5 of the Cartagena Protocol exempts GMOs that ARE pharmaceuticals from the risk assessment procedure. Considering the international standards of drug approvals, plants producing pharmaceuticals will never be pharmaceuticals themselves. They need to be processed to ensure a constant quality and content of the medical substances.**<sup>32</sup> **We strongly recommend to expand the capacity building activities of the project to other GMOs that are likely to be released in the next years.**

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<sup>30</sup> The Federal Republic of Germany was one of the founding members of the Consultative Group on International Agricultural Research (CGIAR) and as a long term partner of CGIAR continues to support the agenda of its international centers, one of which is CIAT (see *A partnership for research and development, Germany and the CGIAR; Partnerschaft für forschung und entwicklung Deutschland und die CGIAR*. 11 pages, 2006.

<sup>31</sup> Reference Guide for Biosafety Frameworks Addressing the Release of Plant LMOs, CropLife International, 2003, [http://www.croplife.org/library/documents/2003 - PUB - Reference Guide \(English - blue version\).pdf](http://www.croplife.org/library/documents/2003 - PUB - Reference Guide (English - blue version).pdf).

<sup>32</sup> See for example the "*Explanatory Guide to the Cartagena Protocol on Biosafety*", IUCN, 2003, p. 55 ff:

"Article 5 clearly applies to pharmaceuticals for humans but not to the use of genetically modified plants and animals to produce them. The cultivation of such plants and the propagation of such animals and their transboundary movement is not exempt under this Article." <http://www.iucn.org/themes/law/pdffdocuments/Biosafety-guide.pdf>

## **RESPONSE:**

*The project team is in agreement with the first recommendation of the Council that in line with STAP Roster Review and recommendation of Germany where feasible it will take into account the possibilities of expanding capacity building activities of the project to other GMOs that are likely to be released in the near future. However, it would also like to summarize the reasons for prioritizing and targeting certain activities, as described below.*

According to the Article 5 of the Cartagena Protocol:  
(<http://www.biodiv.org/biosafety/articles.shtml?lg=0&a=cpb-05>)

### *Quote:*

Notwithstanding Article 4 and without prejudice to any right of a Party to subject all living modified organisms to risk assessment prior to the making of decisions on import, this Protocol shall not apply to the trans-boundary movement of living modified organisms which are pharmaceuticals for humans that are addressed by other relevant international agreements or organizations.

### *Unquote:*

*The interpretation of article 5 of the CP is unclear concerning whether it provides for, or may/ may not include pharmaceuticals. This Project recognizes the importance of pharmaceuticals and transgenic animals and that the participating countries have the capacity needed to evaluate the potential diversity of GMO that may be released in the future. However, the project was designed around outcomes based on individual country needs, and recommendations based on consultations and agreement among all project members concerning the high priority areas to be targeted by this project. This decision was directly influenced by the need for efficient use of limited resources provided by the GEF grant as well as the co-financing provided by the partner countries. Nevertheless, please note that project-funded capacity-building activities of a generic nature (i.e., non-selected crop specie-specific) support the principal of broad coverage recommended by the Germany Council member. It should also be noted that in order to include capacity-building for the evaluation of other GMOs beyond the selected crops based on country needs and recommendations, will require additional funds. Therefore, to fully comply with the current recommendation would require increased budgetary resources.*

## **Comment 2.**

Select broader group of potential partners to increase confidence of civil society group,

### **Detailed Comment.**

The project proposal states that "widespread public mistrust of GMO crops" is prevalent also in Latin American countries; the project should amongst other goals contribute to increase the confidence of stakeholders representing consumer and environment interest.<sup>33</sup> **According to our experiences, this mistrust especially in Latin America is to a large extent a result of the dominance of biotechnology and biosafety experts representing the interests of and/or funded by the biotechnology industry and non-party governments. The suggested further partners almost exclusively fulfil these criteria.**<sup>34</sup> If the goal is to increase the confidence of civil society groups and the public in general and this should be achieved through a biosafety capacity building project then a selection of a much broader group of

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<sup>33</sup>pages 6 & 49

<sup>34</sup>pages 14 & 60

potential partners is highly advisable. **For example we strongly recommend the inclusion of the International Project on GMO Environmental Risk Assessment Methodologies<sup>35</sup> as a potential partner. This project funded by the Swiss development cooperation supports a Latin American Regional Group and has conducted extensive biosafety activities in Brazil, especially on *Bt* cotton.<sup>36</sup>**

#### **RESPONSE:**

*The project team is in full agreement with the recommendation that it is important to select a broader group of potential partners to increase confidence of civil society group. A Consultation Plan is being developed and action is being taken to address the issue of consultation both during the preparation and implementation phases. The guidelines for the stakeholder analysis are based on the World Bank Paper 35 (2001)<sup>37</sup>. This consultation will include representatives of civil society and the public and private sectors. It will use a range of media instruments including e-consultations, workshops, meetings, and sharing of related publications. In each of the project partner countries, the list of collaborators includes not only agriculture, biotechnology and biosafety experts but also representatives from the environmental sector who are responsible for conservation of biodiversity in their respective countries (i.e. Institute von Humboldt, Colombia; CONABIO (National Commission for the Knowledge and Use of Biodiversity), Mexico; CONAM (National Environment Council), Peru; Environment Biocontrol Department (EMBRAPA) Brazil; and INBIO (Institute of Biodiveristy), Costa Rica.*

*The project team agrees fully with the recommendation of the Inter-sessional Work Program; it is already captured in the spirit of this project. Several of the project's Latin American partners are collaborators in the GMO ERA group (i.e. Deise Capalbo, Brazil Project National Coordinator, and Eliana M. Fontes of EMBRAPA, co-author of the book cited below)<sup>6</sup>. Under this collaboration between project partners and GMO ERA, three of the five National Coordinators participated in the workshop on Environmental Risk Assessment Methodologies conducted in Brazil on June 2007 organized by GMO ERA. The specific objective of their participation was to establish direct linkages between the project and other initiatives, and to learn from others. This project aims not only to establish collaboration with other groups like GMO ERA worldwide, but also to build and expand the work plan agenda to be funded by the project, in this way expanding specific areas by establishing linkages with other groups. This is also why the project proposes working by thematic areas (Figure 6.2., page 62), seen as the vehicle for building external cooperation with groups outside the project and thereby strengthening the foundations of the work conducted within the project.*

*Finally as the first step to facilitating the stakeholder consultation and improve communication a Website has been created with a Questions and Answers(Q&A) on biosafety posted to the World Bank external web site and the Latin America region's internal web site<sup>38</sup>. The approach of the Bank as a facilitator and neutral party to the Cartagena Protocol implementation is to enable countries in the region to take the necessary measures to minimize environmental and health risks and meet their treaty obligations; to promote capacity building among all stakeholders to allow informed decision-making; and to tailor*

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<sup>35</sup>The GMO ERA Project is a pioneering initiative driven by public sector scientists, most of whom have strong expertise in environmental science, as well as biotechnology and socioeconomics. The project is identifying and developing scientific methodologies and tools that can be used for environmental risk assessment (ERA) and management of transgenic plants, in accordance with the Cartagena Protocol on Biosafety and other international agreements. <http://www.gmo-guidelines.info/>

<sup>36</sup>Volume 2: Methodologies for Assessing Bt Cotton in Brazil, edited by A. Hilbeck, D.A. Andow and E. M. Fontes

<sup>37</sup> Sherrie A. Kossoudji, 2001. Chapter 3. Strategies of stakeholder analysis to improve participation and project performance: concepts and field techniques. In. Pages 17-30. Robert R. Bianchi and Sherrie A. Kossoudji. Paper No. 35. Interest groups and organizations as stakeholders. The World Bank.

<sup>38</sup> The link to Latin America and the Caribbean Region INTRANET web page on biosafety is: [http://intranet.worldbank.org/WBSITE/INTRANET/INTCOUNTRIES/INTLAC/0,,contentMDK:20969920~pagePK:145785~piPK:146087~theSitePK:257804,00.html#Top\\_Page](http://intranet.worldbank.org/WBSITE/INTRANET/INTCOUNTRIES/INTLAC/0,,contentMDK:20969920~pagePK:145785~piPK:146087~theSitePK:257804,00.html#Top_Page)

*projects to address the country needs and priorities for long-lasting and sustainable results (see the World Bank and Biosafety: Questions and Answers (Q&A) at, <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTBIODIVERSITY/0,,contentMDK:21007108~menuPK:2794906~pagePK:210058~piPK:210062~theSitePK:400953,00.html>*

### **Comment 3.**

Revise proposal to ensure appropriate reflection of Cartagena Protocol and to present a differentiated view regarding not only science-based risk assessment but also decision-making, incorporating socio-economic considerations and possibly applying precautionary principle.

#### **Detailed Comment:**

It is generally accepted that risk assessments of GMOs has to be science-based - understood as applying the methodologies of natural sciences. It is also useful if the project contributes to enhance the capacities of the countries to generate science-based information to support the national decision-making procedures. But we cannot agree with the idea promoted by the project proposal that decision-making has to be science-based itself. In the international biosafety discussion the phrase "science-based decision-making" has been coined by those stakeholders who reject the concept of allowing governments to base their decisions on the precautionary principle and on socio-economic and other, political considerations. Both, the application of the precautionary principle and the taking into account of socio-economic considerations are supported by the Cartagena Protocol. Consequently, we support the idea of the proposal to enhance the capacity of the countries to perform socio-economic analyses as a basis for decision-making. **The proposal tends to imply that socio-economic analyses are in mostly cost-benefit analyses.** Project team would like to assure that this is not the case; the Cartagena Protocol consequently does not speak of cost-benefit analyses at all. **We would suggest that the project proposal is revised to ensure an appropriate reflection of the content and spirit of the Cartagena Protocol and to present a differentiated view regarding the concepts and relationships between science-based risk assessment on the one side and decision-making taking into account socio-economic considerations and applying the precautionary principle, if necessary, on the other side.**

#### **RESPONSE**

*The project team is in full agreement with the recommendation three on its request to revise the proposal to ensure appropriate reflection of the Cartagena Protocol and to present a differentiated view regarding not only science-based risk assessment but also decision-making, incorporating socio-economic considerations and possibly applying the precautionary principle<sup>39</sup>.*

*The project is designed to respond to specific requirements for ensuring that the project partner countries have the capacity to implement the Cartagena Protocol. Not all those aspects are specifically outlined in the Protocol but represent intermediary steps judged to be essential to secure full compliance with the Protocol. The country project partners expressed as a priority, the need to strengthen their technical capacity in environmental risk assessment to close a major compliance gap at the national level. In addition to environmental risk assessment, the project includes a sub-component on socio-economic impact assessment as part of Component 1. The recommendation is well-taken that socio-economic impact assessment not be referred to as, or confused with, cost-benefit analysis. The project recognizes*

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<sup>39</sup> precautionary approach contained in **Principle 15 of the Rio declaration on environment and development**--In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

*the confusion that this terminology may create. To clarify, it is a project goal to strengthen technical capacity for socio-economic impact assessment adapted to the specific needs of the neo-tropics in these areas of centre and origin of biodiversity; this must also include the role of small farmers in creating and preserving diversity of the crops and biodiversity at large. **The project document and work plan will be revised accordingly to ensure clarity regarding the component on socio-economic impact assessment.** Although the precautionary principle may be part of the final decision process related to biosafety and taking into consideration that the Cartagena Protocol on biosafety is in accordance with the Principle 15 of the Rio Declaration, the project is careful in attempting not to interfere with the internal political decisions of the countries involved. This is a direct response to special concerns raised by the partners at the initial phase of preparing the project Document, indicating that each country would like to preserve their sovereignty concerning how the conduct of the decision-making process. Each participating country has its own legal framework and these are not necessarily homogeneous. The partners were very clear in indicating that they would not be willing to standardize the decision-making process across countries, but that they would be willing to standardize technical methodologies. The reason why the project has chosen to focus on technical aspects is their status as one of the crucial foundations of the complex decision-making process in biosafety. This, focus also permits a multi-country collaboration without interfering in the sovereignty of any one country, as reflected in the spirit of the Cartagena Protocol.*

*The project team would once again like to express their gratitude to the German Council Member for this opportunity to provide a response to the comments and hope that the above have adequately addressed the concerns. We also believe that it improved the Project design and its implementation potential thereby assisting the five project countries to strengthen their biosafety capacity.*

## Annex 17: MAPS

### LATIN AMERICA: Regional Capacity-Building in Biosafety

World Bank Maps to be prepared

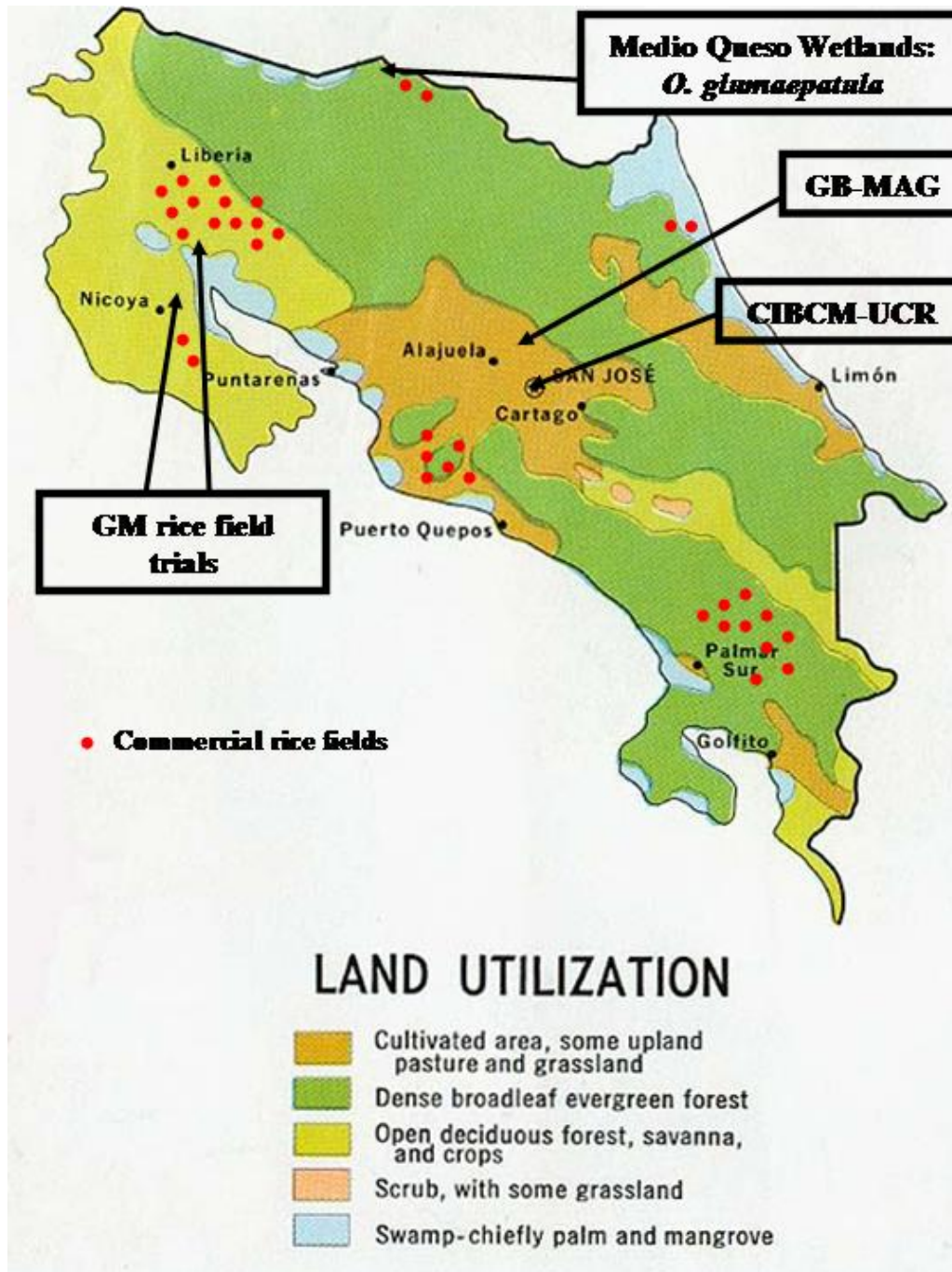
#### Brazil



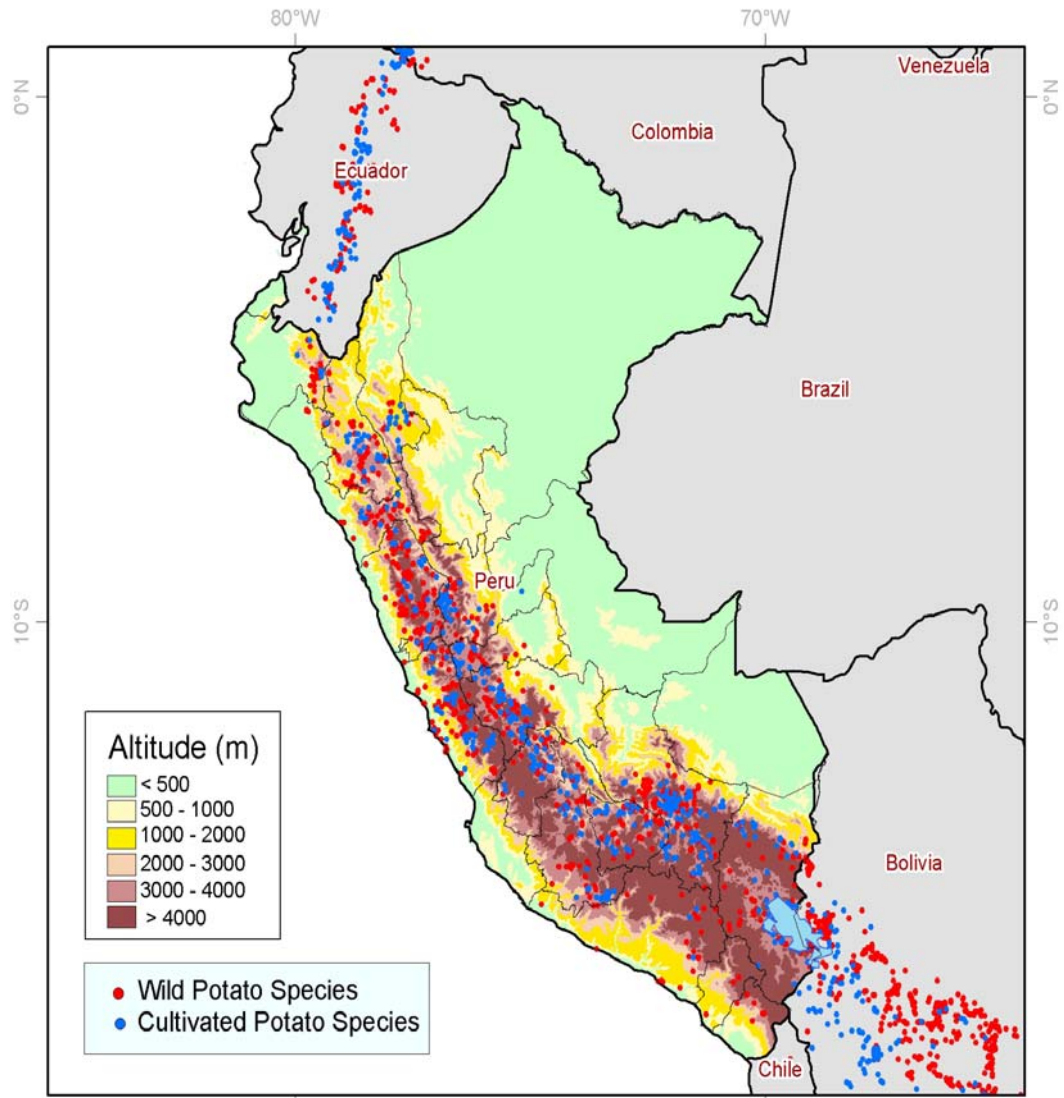
## **Colombia**

Need Maps for experimental sites: cassava, cotton, maize and potato

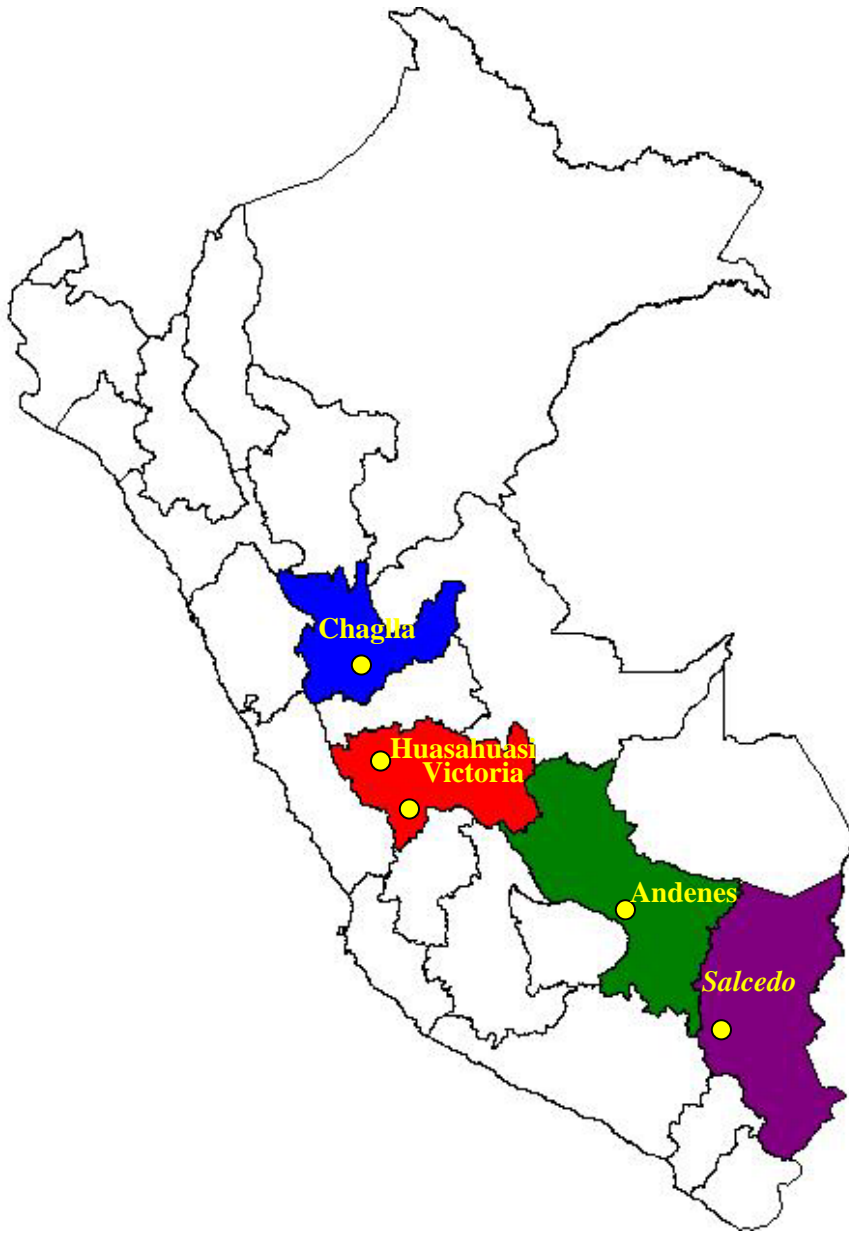
# Costa Rica



# PERU



**Distribution of wild and cultivated potatoes in Peru (Colaboration H. Juarez and courtesy A. Salas, CIP-Lima).**



**Map of the main project sites where potato activities will be developed (yellow circles).**

