REVISED PROPOSAL FOR THE CGIAR INTER-CENTER
AMAZON ECOREGIONAL PROGRAM

Prepared by the Amazon Initiative Management Team
and Amazon Initiative Technical Committee

Presented to the CGIAR Science Council

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List of Acronyms

ACTO ……… Amazon Cooperation Treaty Organization
AI ................ Amazon Initiative Consortium
AI-IMCC …… Amazon Initiative Coordinator of Institutional Management and Communication
AI-EP ……… Amazon Initiative Ecoregional Program
AI-EP ExCo .. Executive Committee of Amazon Initiative Ecoregional Program
ARS ........... Associate researchers
ASB ........... Alternatives to Slash-and-Burn System Wide Program
CAICET …… Centro Amazónico para la Investigación y Control de Enfermedades Tropicales S. Bolivar
CAPRi ........ Collective Action and Property Rights System Wide Program
CC ............ Climate Change
CELOS …….. Center for Agricultural Research in Suriname
CGIAR …….. Consultative Group International Agricultural Research
CGIAR-SC … Science Council of the CGIAR
CIAT ………. International Center for Research in Agriculture
CIAT-BO ...... Centro de Investigación Agrícola Tropical, Bolivia
CIFOR …..... Center for International Forestry Research
CIM ........... Centrum für Internationale Migration und Entwicklung
CORPOICA .. Corporacion Colombiana de Investigación Agropecuaria
CP ............ Challenge Program
DST .......... Decision support tools
ECORAE ….. Instituto para el Ecodesarrollo Regional Amazónico, Ecuador
EMBRAPA ... Empresa Brasileira de Pesquisa Agropecuária
EP .......... Ecoregional Program
EPA .......... Environmental Protection Agency, Guyana
FAO .......... Food and Agriculture Organization of the United Nations
GEBs .......... Global environmental benefits
GHG .......... Greenhouse gases
GTZ .......... German Agency for Technical Cooperation
ICRAF …….. World Agroforestry Centre
IF ............ Innovation Foci
IFAD ……… International Fund for Agricultural Development
IFC ........... Innovation Focus Coordinator
IIAP .......... Instituto de Investigaciones de la Amazonia Peruana, Peru
IICA ………. Inter-American Institute for Cooperation in Agriculture
INIA Peru .. Instituto Nacional de Investigación Agraria, Peru
INIA Venez. .. Instituto Nacional de Investigaciones Agrícolas, Venezuela
INIAP ......... Instituto Nacional Autónomo de Investigaciones Agropecuarias, Ecuador
INPA .......... Instituto Nacional de Pesquisas da Amazônia, Brazil
IPG .......... International public good
JICA .......... Japan International Cooperation Agency
LBA .......... Large Scale Biosphere-Atmosphere Experiment
MDGs ……… Millennium Development Goals
MDRAyMA . Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente, Bolivia
MTP .......... Medium Term Plan
NARI ......... National Agricultural Research Institution
NGOs ........ Non-governmental organizations
NTFP ........ Non timber forest product
PES ........... Payment for Ecosystem Services
PP-G7 ........ Pilot Program for the Conservation of Brazilian Rainforests
RforD .......... Research for development
SLUS .......... Sustainable land use systems
SWP .......... System wide program
UA ........... Universidad de la Amazonia, Colombia
UAP .......... Universidad Amazónica de Pando, Bolivia
UNAMAZ .... Asociación de Universidades Amazonicas
UNDP ........ United Nations Development Program
USAID ....... United States Agency for International Development
EXECUTIVE SUMMARY

The Amazon region and its peoples are at a crossroads. The degradation of natural resources, due to factors such as poor pasture management, unsustainable slash-and-burn agriculture, large-scale commercial agriculture, and logging, has intensified in recent decades. Global climate change (CC) is also an issue: the Amazon is both contributor to CC due to greenhouse gas emissions resulting from land conversion (especially slash-and-burn agriculture) and livestock and will be victim to heating and drying as the effects of CC become more pronounced. Current far-reaching programs for regional economic and infrastructural integration, coupled with continuing population growth, are likely to contribute to more deforestation, land degradation, and biodiversity loss, with drastic impacts on livelihoods of vulnerable local people and on the Amazon environment itself.

National research institutions, research centers of the Consultative Group on International Agricultural Research (CGIAR), and local organizations, have formed an international consortium—the Amazon Initiative Consortium for Conservation and Sustainable Resource Use (AI)—that generates and promotes policy, institutional and technological innovations for the enhancement of livelihoods through sustainable land use systems while maintaining and enhancing ecosystem services. The AI was established in October 2004. Founding members are the National Agricultural Research Institutions (NARIs) of Brazil (EMBRAPA), Colombia (CORPOICA), Peru (INIA), Ecuador (INIAP), and Venezuela (INIA); the Bolivian Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente (MDRAyMA); the Inter-American Institute for Cooperation on Agriculture (IICA); and four centers of the CGIAR: (CIAT, CIFOR, ICRAF, and Bioversity International). In 2005, the AI Steering Committee approved the entry of Centro de Investigación Agrícola Tropical (CIAT, Bolivia), Fundación para el Desarrollo Tecnológico, Agropecuario y Forestal Trópico Húmedo (Bolivia), Instituto de Investigaciones de la Amazonia Peruana (IIAP, Peru), and Asociación de Universidades Amazónicas (UNAMAZ). In 2006, the AI Steering Committee approved the entry of associate institutions: Universidad Amazónica de Pando (UAP, Bolivia), Instituto Nacional de Pesquisas da Amazônia (INPA, Brasil), Instituto para el Ecodesarrollo Regional Amazónico (ECORAE, Ecuador), Universidad de la Amazonia (Colombia), and Centro Amazónico para la Investigación y Control de Enfermedades Tropicales Simon Bolivar (CAICET, Venezuela). The AI has close relations with the Secretariat of the Amazon Cooperation Treaty Organization (ACTO), and is identified as a key partner in ACTO’s current strategic plan.

In the present document, we present a proposal for the establishment of a CGIAR System Wide Ecoregional Program in the Amazon. The Program will be named the Amazon Initiative Ecoregional Program (AI-EP). The creation of such a program gives an unequivocal signal of the CGIAR’s commitment to a regional research for development support agenda in the Amazon, and will strengthen the institutional, financial and technical base of the current initiative. The resulting flow of international public goods will greatly enhance the contribution of the CGIAR to the achievement of Millennium Development Goals in the region. The proposed program has four priority innovation foci (or research thrusts):

- Climate change: mitigation and adaptation
- Sustainable smallholder production on deforested and degraded land
- Enhanced benefits from forests for livelihoods and the environment
- Market chain development of Amazon products
The proposed program strategy regarding these four foci reflects both the complexity of the Amazon and the strengths and diversity of institutions active in the region. The Amazon Ecoregional Program faces the challenge of contributing to research for development that meet the short- and long-term needs of both environmental conservation (and the provision of global environmental benefits) and the welfare of local populations. Because the processes that threaten the livelihoods of the rural poor and the natural resources of the Amazon operate at diverse geographic and political levels, the AI-EP will respond by generating public goods and solutions at nested scales from local, to national, to regional, to global levels. The Program will rely not only on the strengths in natural resource management of international and national research centers, but also on the integration with the local experience of universities, non-governmental organizations, and producer organizations. This approach benefits from the collaborative work of an inter-institutional and inter-disciplinary team of scientists and practitioners that, through the collective action implemented to date by the Amazon Initiative Consortium, is already in place. The social and human capital being built through a coordinated effort of diverse stakeholders and institutions along the broader AI process has set the stage and allows a strategy for collaborative research, to be subsequently integrated with the scaling-out (i.e. replication) and scaling-up (i.e. institutionalization) of innovations that will not lead to further deforestation.

This document presents AI-EP as follows. After the introduction (Section 1), the document sets the boundaries of the AI-EP within the wider AI process (Section 2), and presents Program rationale, and the development challenges it addresses (Section 3). Subsequently, the document focuses on the Program’s scientific agenda composed of four innovation foci, their guiding hypotheses, and implementation strategy (Section 4), and integration as a guiding principle for program implementation (Section 5). Monitoring and evaluation (Section 6) and collaborative and partnership arrangements targeting AI-EP implementation (Section 7) are presented next, followed by governance and management structure of the Program (Section 8), and the material, human, and financial resources required for its implementation (Section 9). The document includes as annexes an overview on AI achievements since its conceptual inception in mid-2003, especially since the formalization of the Consortium in late 2004, the research domains of the four CGIAR member centers of the AI-EP, and the geographical coverage of the AI-EP.

AI-EP Governance will be provided by a Program Executive Committee (AI-EP ExCo), formed by a subset (5 members) of the AI Technical Committee (2 CGIAR, 2 NARIS, 1 Associate Institution). Management for the AI-EP includes a coordination office composed by a program director and program secretary, and coordinators for the four Program’s Innovation Foci. Program Director will liaise and participate in the AI management team, along with the AI General Coordinator and Executive Secretary.

AI-EP’s financial plan includes secured sources of funding, and identifies the financial gap needed for the implementation of Program activities for the initial two years. The budget for the 2008-2009 period totals US$ 1.17 million. Current approved sources account for 50% of this total. The current request to the CGIAR of US$ 300,000/year for 2008-2009 will address this gap. During this period, the Coordination Office of the AI-EP will conduct fundraising for an expanded program in the subsequent six years, after which Program termination is foreseen.

The following sections thus present the CGIAR Amazon Ecoregional Program, an initiative that will use science to reduce natural resources degradation and enhance livelihoods in the Amazon. Outcomes will be achieved by improving collaboration across the region and by linking local, regional and global experiences, knowledge and action.
1. INTRODUCTION

In August 2006, Embrapa, the coordinating institution of the Amazon Initiative Consortium submitted to the Science Council1 of the Consultative Group for International Agricultural Research (CGIAR)1 a proposal for an Ecoregional Program2 prepared by the AI management team and based around the AI’s research agenda. The Science Council’s comments on the proposal were received in October 2006. Following on-line consultations with members of AI Technical Committee, a workshop was convened (May 2007) with a view to addressing the Science Council’s comments and formulating a strengthened second version of the proposal.

The Science Council’s Comments

The Science Council praised a number of aspects of the proposal, for example, its focus on payment for environmental services. Importantly, it also observed that the rationale for an Amazon Ecoregional Program was sound, i.e. addressing complex issues relevant to a specific region / ecology, with generation of international public goods (IPGs)3. It also requested clarifications and modifications in some areas, particularly:

- Clearer definition of the objectives of the proposed program;
- Narrower, less ‘open-ended’ research hypotheses;
- Less ambitious programs for each focal area;
- Clearer connection between hypotheses and the program descriptions;
- Definition of the geographical locations in which the program would work and the criteria used to select them;
- A need for clear milestones, criteria and indicators to assess impact;
- Clearer distinction between the AI itself and the proposed Ecoregional Program, including a clear explanation of the outcomes attributable to the latter;

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1 The CGIAR is a partnership of countries, international and regional organizations and private foundations supporting the work of 15 international Centers, including the four that are members of the Amazon Initiative (Bioversity International, CIAT, CIFOR, World Agroforestry). Brazil, Colombia and Peru are members of the CGIAR and contribute annually to its budget. The CGIAR is co-sponsored by FAO, UNDP, IFAD (International Fund for Agricultural Development) and the World Bank, which appoints its Chair. The CGIAR is funded by its 64 members. The CGIAR System has three principal, independent components: the CGIAR itself, the 15 Centers, and the Science Council. Members of the Science Council and its Standing Committees include 16 distinguished scientists from developed and developing countries. The Science Council Secretariat is based with FAO in Rome. One of the Science Council’s functions is to evaluate proposals for new Ecoregional Programs (see following note).

2 The CGIAR uses two mechanisms to plan and implement research on complex issues: ‘Challenge Programs’ (CPs) and System-Wide Programmes (SWPs). The SWPs involve two or more CGIAR centres and a limited number of external partners. Some SWPs are implemented in specific eco-regions and are therefore known as Ecoregional Programs (EPs). CPs involve significantly more external partners.

3 Public goods are commodities or activities whose consumption by one consumer does not reduce possible consumption by another and whose consumption is not restricted to particular consumers, e.g. a new method of vegetative propagation for a given species, a freely available book. International public goods are public goods where the consumers are conceptualized as nations rather than individuals. The CGIAR SC specifies that IPGs generated by CGIAR centers (including SWPs and CPs) should be ‘knowledge or technology...applicable internationally to address generic issues and challenges consistent with CGIAR goals’.
• A need to justify the proposal in terms of the added value generated by the EP (i.e. presumably with respect to centers acting alone);

• The desirability of generating IPGs on development of effective partnerships and on ways of integrating local and scientific knowledge;

• A need to consider, within the framework of the proposal, the challenges caused by expansion of the soybean and cattle industries (possibly by integrating additional specialized institutions).

• Several other specific points, e.g. regarding budgeting and governance.

**Priority Setting Workshop: Program and Process**

The overall goal of the three-day workshop, attended by representatives of AI member institutions and invited specialists, was to complete a priority analysis for collaborative research in the domain of the Ecoregional Program, with specific reference to the CGIAR Science Council’s comments. This analysis was carried out through the following activities, coordinated by a professional facilitator and guided by daily meetings of a process steering committee:

• Participants’ identification of desired outcomes of the workshop and outcomes to be avoided;

• Discussion and group work to clarify the relationship between the AI-EP and the wider AI;

• Discussion and group work to formulate major research issues to be addressed by the AI-EP;

• Identification of major research ‘thrusts’[^4] that respond to the issues identified;

• For each thrust, group work for: formulation of components, problems and development issues, opportunities, key impacts and outcomes, value added by the EP, identification of other organizations active in the field, research hypotheses, impact pathways, research products, approach and organization, integration with other thrusts, implementation platforms and arrangements, subprojects with key objectives and methodology.

• Group work and discussion for identification of means of integrating ‘thrusts’ and design of a governance structure for the EP.

• Agreement on follow-up steps.

The results of these activities are documented in the following sections.

[^4]: Provisional term used during the workshop, replaced in this document by “innovation focus”.
2. AMAZON INITIATIVE & AMAZON ECOREGIONAL PROGRAM

The AI Cooperation Agreement was signed in 2004. Since then, the AI has developed a substantial portfolio of capacity building, networking, communication, and dissemination. Activities are centered on the AI thematic networks and a communication and knowledge sharing platform. Outputs also include publications, training, and partnerships with universities for student support. The AI has encouraged participation of a broad set of institutions (the AI Associate Institutions). Overall, the AI has effectively built social and human capital that sets the stage for a collaborative research for development agenda on innovations that will not lead to further deforestation, now being proposed as the Amazon Eco-Regional Program (AI-EP).

The AI-EP is neither synonymous with nor parallel to the AI Consortium. The AI-EP will be a component of and an institutional arrangement fostered by the Amazon Initiative Consortium dedicated to jointly-identified collaborative research for development activities. Such research will reflect the shared priorities of participating countries, the region, CG member centers of the AI, and the CGIAR Science Council, as depicted in Figure 1.

![Diagram](image)

**Figure 1. Representation of the process used to identify the Scientific Agenda of the AI-EP**

Figure 2 represents the wider AI Consortium, with the governance and management dimension expressed as the outer layer. The intermediate layer depicts capacity building, knowledge sharing, networking and strengthening governance activities: activities represented in this
intermediate layer will not be constituent parts of the **AI-EP**, but will continue to be implemented by the **AI** Consortium independently, although in close articulation with the proposed Program.

![Figure 2. Representation of structure and mandate of the Amazon Initiative Consortium](image)

The **AI-EP** proposal to the CGIAR is represented by the center of Figure 2, and focuses on a scientific agenda characterized by the four priority Innovation Foci presented in Figure 3. The four foci will address the challenges of land degradation, climate change, maintaining forest ecosystem services and human welfare, and the development of market value chains for Amazon products.

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![Figure 3. Research framework of the Amazon Ecoregional Program (AI-EP)](image)
The AI-EP will thus consist of interdisciplinary and inter-institutional research for development projects to be designed, implemented and monitored by members (including associate institutions) of the AI-Consortium, with the leadership of CGIAR Centers and NARIs.

3. THE RATIONALE OF THE AMAZON ECOREGIONAL PROGRAM

The goal of the Amazon Ecoregional Program is to contribute to the improvement of rural livelihoods and to the conservation of the Amazon ecosystem through research for development. The goal is to be achieved through the development and adoption of “Sustainable Land Use Systems for the Prevention, Reduction and Reversion of Resource Degradation.” The AI-EP will incorporate innovative, collaborative strategies for the production of international public goods contributing to the achievement of Millennium Development Goals (MDGs) in the Amazon.

The AI-EP scientific priorities comprise four innovation foci identified by the AI Technical Committee, validated through participatory consultations at sub-regional workshops in the member countries, and refined through an inter-institutional workshop. A detailed project portfolio is being formulated by national and international agricultural research centers and local associate institutions. The project portfolio will be based on concrete activities to achieve the outputs, outcomes and impacts proposed through this Program.

The AI-EP scientific agenda supports the CGIAR’s core mission of improving the livelihoods of low-income people in developing countries by reducing poverty, food-insecurity, malnutrition, gender inequality and child mortality; and by fostering better institutions, policies, and sustainable management of natural resources. Research outcomes of the AI-EP will directly contribute to the achievement of MDG1 (Reduction of Poverty and Hunger), MDG7 (Ensure Environmental Sustainability), and MDG8 (Development of a Global Partnership for Development). The AI-EP agenda is aligned with the CGIAR Science Priorities in all five System Priority Research Areas for 2005-15, and particularly with Priority Area 3 (Reducing Rural Poverty through Agricultural Diversification), Priority Area 4 (Poverty Alleviation and Sustainable Management of Water, Land, and Forest Resources), and Priority Area 5 (Improving Policies and Facilitating Institutional Innovation to Support Sustainable Reduction of Poverty and Hunger). The scientific agenda and research program of the AI-EP are described below.

Amazon Challenges and Development Challenges.

The AI-EP faces the challenge of contributing to research and development interventions that concurrently meet the short- and long-term needs of environmental conservation and the economic well-being of local populations. The AI member institutions are working towards the identification, development and dissemination of sustainable land use systems that avoid further deforestation; and towards supporting local governments and civil society in their goals related to human welfare, environmental services, and improved governance.

The Amazon region poses several challenges. It contributes to global climate change and will become its victim. Human poverty in the Amazon is linked to undeveloped market chains; insufficient financial mechanisms for the poor; conflicts over resource access; and weak policy foundations and institutional capacity.

Recent human impacts on the Amazon and its global environmental services are largely negative. Most land use change has been associated with substantial emissions of greenhouse gases, contributing to global climate change. Biodiversity has been lost where forests were converted to
other uses. Nearly 70 million ha of Amazon forest were cleared over the last 30 years, mostly in Brazil. Drivers were road building, timber extraction, slash-and-burn agriculture, cattle, and large-scale commercial agriculture. Forests of the other Amazonian countries have also been affected. New roads and policies leading to their construction make forests more accessible. Smallholders clear more forest after soil nutrients are depleted and unmanageable weed infestation makes farming difficult and costly. Ranchers frequently open new areas after pastures degrade within a few years: more than 30 million hectares of Amazonian pasture have been abandoned or are severely degraded. Soybean production has pushed ranching deeper into forested areas. Expanded market demand for timber, beef and soybean contribute to deforestation, unsustainable agro-ecosystems, and natural resource degradation. Land pressure to grow crops for bio-fuels represents a new but powerful threat to the Amazon. In addition, soil erosion from slash-and-burn agriculture has led to leaching of naturally occurring mercury into rivers, eventually concentrating up the food chain in fish consumed by humans--bringing about significant human health problems.

Reviews of the policy-related drivers of deforestation and land degradation in the Amazon refer to colonization schemes, tax codes, fiscal incentives, interstate migration, monetary inflation, land prices, monetary policy, land tenure legislation, commodity price supports, forest reserve laws, and monitoring policies and devices. Much of the deforestation that has taken place in the Brazilian Amazon, for example, was carried out by middle and large-scale ranchers in the 1970s and 1980s, who converted the forest cover to pasture, often with the support of fiscal incentives from federal agencies. Fortunately, the government of Brazil is taking measures to slow deforestation. Many financial incentives for cattle ranching have been withdrawn; and the proportion of land on a property that can be legally deforested was reduced to 20%. Fines have been imposed on landholders caught burning forest without appropriate permission.

Indeed, habitat conversion and resource degradation in the Amazon are driven by multiple factors including the combination of open access to land and forest resources and lack of secure rights to lands occupied and resources used. The AI-EP will address such Amazon challenges, but reformulated as Development Challenges.

**Amazon Challenge 1**

**Climate Change.** The Amazon is both villain and victim in terms of land use change and consequent effects on global environmental services. The Amazon contributes greenhouse gases that cause global climate change as forests are converted to other uses; and will suffer from climate change as the region dries and temperatures increase. Indeed some global circulation models predict the Amazon to suffer greatest in Latin America, with increasing temperatures contributing to greater risk from fire and some authors suggesting severe dieback of natural forests. Climate change is also expected to exacerbate human health problems, especially from diseases associated with water-borne vectors. The possible impacts on biodiversity mean not only loss of global environmental benefits, but of potentially beneficial species for forest communities.

**Development Challenge 1**

**Climate Change: Mitigation and Adaptation.** Research for development will be needed in the area of mitigation: reducing greenhouse gas emissions associated with forest conversion and slash-and-burn agriculture, enhancing sinks of atmospheric carbon, and in the area of adaptation: helping peoples of the Amazon successfully adapt to worsening conditions brought about by climate change through the design of resilient land use systems.
Amazon Challenge 2

**Combination of Open Access and Insecure Tenure: Need for Policy and Institutional Approaches to Prevent and Reverse Habitat Conversion and Natural Resource Degradation.**

The impacts of sustainable land use systems depend largely on resource users intensifying their otherwise extensive production systems: by including trees, shrubs, legumes, managed pastures, mulching, use of crop residues, crop rotations, and other innovations. The challenge is to make such intensification financially attractive to resource users. The constraint is that open frontiers that allow people to move to and open new forest areas usually provides a more attractive alternative: if it is less expensive to clear more forest than rehabilitate a degraded pasture, people will move. Financial and policy measures are needed to effectively close the land frontier. New Amazon products integrated in new market value chains that include from producers to distant consumers and payments for environmental services derived from sustainable land use systems may help to provide financial incentives.

Small farmers are not the only ones to take advantage of an open land frontier. Economic globalization can drive land conversion and use. Free trade, reduction of agricultural subsidies in developed countries, and national support for large-scale agriculture can come at costs of accelerated deforestation, displacement of the poor and loss of rural livelihoods. Large-scale farmers, ranchers, and loggers do not alter private land use strategies for the sake of public benefit. Again, the open land frontier of the Amazon is a policy and institutional challenge that needs to be addressed.

At the same time, land users will be hesitant to invest in more intensive management if they lack some form of tenure security over the lands and resources they are using. Innovative policy and institutional approaches working closely with Amazon communities are needed to assure that people are able to invest in their lands and forests in ways that they will not later be alienated from the gains made. In areas where tenure security is low, timber values increase the net benefit of land clearing and hence encourage deforestation.

The Amazon and its people could benefit by policies favoring the adoption of sustainable land use systems. Policies, however, are often ineffective due to institutional weakness, low levels of participation by land users, poor governance and limited communication of information. The adoption and use of sustainable land use systems can be slowed by weak communication links among providers and users of knowledge. Institutions of the Amazon countries rarely have the opportunity to share research and policy experience. This often leads to duplicated and sometimes conflicting efforts.

**Development Challenge 2**

**Adoption of Sustainable Land Use Systems in Deforested and Degraded Areas**

Research and development have produced the building blocks of sustainable land use systems. Technological innovations, such as bio-fuel production on degraded lands may well be a part of appropriate future sustainable systems. Such technological innovations, however, need to be adapted to particular conditions and geographical areas. For adoption to take place, such things as targeting, community based participatory natural resource management research, and the removal of key constraints are needed. Policy and institutional support, as discussed above, will be highly relevant. Payments for environmental services would be appropriate as people and communities produce global environmental goods from their sustainable land use systems.
Amazon Challenge 3
Sustainable and Value Added Use of the Forest. A portion of the Amazon is protected by virtue of isolation and lack of road infrastructure. Much of the forest, however, is peopled by both indigenous and settler groups. Sustainable forest use that also provides benefits from forest products is a crucial present and future need. Fortunately, the policies of Amazon governments are starting to change, including direct or indirect support of groups working to maintain the forest. The concept of “extractive reserves” was introduced in Brazil as a legal form of land tenure in an attempt to recognize the tenure situation of rubber tappers and traditional populations. Price supports for natural rubber were implemented to support the tappers. These efforts were complemented in the mid-1990s by the introduction of technologically sophisticated systems to monitor deforestation.

Development Challenge 3
Enhanced Benefits from Forests for Livelihoods and the Environment. The challenge facing the AI-EP will be in adding value to the standing forests--increasing options and benefits for people while maintaining the ecosystem and its services.

Amazon Challenge 4
The Need for Market Value Chain Development, including Payments for Ecosystem Services. Adoption and positive impacts of sustainable land use systems will depend in part on the financial rewards resulting from profitable production of Amazon products, both traditional and novel. But a large set of constraints need to be addressed. The constraints--which can be lumped in “lack of market value chain development”—include lack of information systems, lack of seed and germplasm, high initial investments, low returns, long payback periods, lack of credit, need for post-harvest and value added capabilities, need for continual production at given volumes, and lack of confidence in others in the market chain. People are often trapped into mining their natural resources in order to meet daily livelihood needs rather than investing in longer term systems.

Land users who adopt sustainable practices provide ecosystem services in terms of avoided deforestation and associated greenhouse gas emissions, improved hydrological function, biodiversity, and carbon stocks. Such private investments in the generation of public goods should be rewarded. While markets for environmental services exist, they remain small, are fraught with high transactions costs, and can be risky and unreliable.

Development challenge 4
Fair, Financially Attractive, and Effective Market Value Chains. Research for development will seek innovative ways to remove constraints and to take advantage of opportunities in learning how to facilitate the development of successful market value chains for particular Amazon products in selected areas, including the promotion of practical, transparent, effective, and equitable systems of payments for environmental services.

The four development challenges faced by the program are:

- How to mitigate and adapt to climate change.
- How to achieve adoption of sustainable land use systems in deforested and degraded areas.
- How to improve the livelihoods of forest communities while maintaining the forest environment.
- How to develop fair, financially attractive, and effective market value chains for Amazon products.
Overall challenges posed by the Amazon led to the identification of development challenges to be addressed by the AI-EP. The following sections discuss how each development challenge is formulated into an innovation focus with respective innovation areas, expected outcomes and impacts.

4. STRATEGIC INNOVATION FOCI OF AMAZON ECOREGIONAL PROGRAM

4.1. Innovation Focus 1: Climate Change Mitigation and Adaptation

4.1.1. Rationale

The Amazon is of global importance in regulating climate change (CC), representing a significant storehouse of carbon reserves and source of greenhouse gas (GHG) emissions. At the same time, projections show that both peoples and the biodiversity of the Amazon will be at risk as climate changes. The innovation focus would work on both climate change mitigation and adaptation. The proposed areas of work for mitigation are:

- Innovation area 1.1. Analysis of the carbon footprint of land use systems in the Amazon, including the implications for local and global climate change;
- Innovation area 1.2. Development of resilient land use systems to maintain and increase carbon stocks (in collaboration with Innovation Focus 2, degraded lands);
- Innovation area 1.3. Development and testing of payment schemes for the management of ecosystem services (PES), including the exploration of carbon market opportunities;
- Innovation area 1.4. Identification and application of international instruments that can reduce deforestation and forest degradation.

Proposed areas of work on adaptation are to include:

- Innovation area 1.5. Examination of current mechanisms used to cope with risk;
- Innovation area 1.6. Testing of innovative community based fire management;
- Innovation area 1.7. Testing of adapted germplasm and land use systems (in collaboration with Innovation Focus 2, degraded lands);
- Innovation area 1.8. Work with local and national governments on appropriate adaptation programs.

4.1.2. Outcomes and impacts

The overall expected outcomes of work on mitigation are the adoption of appropriate sustainable land use systems (SLUS) that provide positive impacts by increasing carbon (C) stocks through increases in biomass and, eventually, in soil C; and by decreasing GHG emissions through avoided deforestation.

(1.1) Analysis of the carbon footprint of land use systems. Outcomes will be methods for and the measurement of carbon stocks associated with different land use systems, including sustainable

5 Defined by the CGIAR Science Council as ‘the external use, adoption or influence of a Center output or outputs’ (the outputs correspond to the IPGs generated). Impacts are defined as ‘the ultimate social, environmental and economic benefits consistent with the Center’s mission and objectives and the CGIAR goals (e.g. increased productivity, reduced poverty...)'
systems tested and developed by the AI-EP; and of GHG emissions associated with the conversion of land use systems--e.g., the conversion of forest to slash-and-burn agriculture. This innovation area’s impact will be in the form of a building block: adoption of appropriate SLUS is expected to have positive impacts in terms of carbon and decreased GHG emissions. Measurement techniques will be needed to institute PES schemes and to measure impact of the SLUS themselves.

(1.2) Development of resilient land use systems to maintain and increase carbon stocks. This work will be conducted in collaboration with Innovation Focus 2, sustainable production on deforested and degraded lands. Outcomes will be systems and adoption of systems that represent carbon stock increases and reduction of GHG emissions due to avoided deforestation. Impacts are thus the maintenance and increase in C stocks, reduced GHG emissions, and positive welfare impacts from the more sustainable systems (including PES and product market chain development).

(1.3) Development and testing of payment schemes for the management of ecosystem services (PES), including the exploration of carbon market opportunities. This will be a central area of innovation for the AI-EP, with outcomes including development, testing and adoption of schemes to reward local communities for adoption of practices that diminish GHG emissions and systems that increase C stocks; and enhanced effectiveness of organizations working on rights and compensation for environmental services. Impacts are essentially the same as those for 1.2: maintenance and increases in C stocks; reduced GHG emissions; and welfare gains to local communities via PES.

(1.4) Identification and application of international instruments that can reduce deforestation and forest degradation. This innovation area is expected to produce the outcome of analyses of policy options that favor adoption of SLUS and of AI advocacy in support of appropriate policy instruments. Impacts stemming from adoption of appropriate SLUS will again be maintenance and increase in C stocks; and reduced GHG emissions.

The overall expected outcome of work on **adaptation** is adoption of appropriate SLUS that provide positive impacts in terms of people’s and communities’ abilities to maintain and increase their welfare in the face of climate change. Welfare gains are expected through payments for environmental services generated by adoption of SLUS and through financial gains made from product and market chain development generated from the SLUS.

(1.5) Examination of current mechanisms used to cope with risk. This innovation area will provide the outcome of understanding how communities have used their traditional knowledge to face risk related to production activities. Impact will be indirect: a building block to help in the development of local and national mitigation policies and programs.

(1.6) Testing of innovative community based fire management. Accidental and uncontrolled fire will be one of the more difficult problems people will face as the Amazon dries and heats up due to CC. The AI-EP will work with communities to develop fire prevention and management methods. While less fire will mean a decrease in GHG emissions, more important will be maintenance of the productive systems on which communities’ livelihoods depend.

(1.7) Testing of adapted germplasm and land use systems (in collaboration with Innovation Focus 2, degraded lands). The outcome of this innovation area will be critical to success: development, testing, and adoption of appropriate SLUS that are adapted to the future hotter and
drier conditions of the Amazon. More drought and heat adapted crops, varieties, and products will be needed. Successful germplasm development and systems adoption will have the positive impact of sustaining the livelihoods of the peoples of the Amazon.

(1.8) *Work with local and national governments on appropriate adaptation programs.* The AI-EP will have to work closely with local and national governments as they develop programs and policies to help those negatively affected by CC. Outcomes will be that local and national governments formulate and then enforce programs and policies that lessen the negative effects of CC on Amazon communities. The impact would again be the maintenance of livelihood systems on which the peoples of the Amazon rely.

**Innovation Focus 1: Climate Change Mitigation and Adaptation**

<table>
<thead>
<tr>
<th>Innovation area</th>
<th>Mitigation</th>
<th>Outcomes</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Analysis of carbon footprint of land use systems</td>
<td>Quantification of C stocks &amp; GHG emissions associated with different systems</td>
<td>Building block criteria to evaluate SLUSs relative to CC</td>
<td></td>
</tr>
<tr>
<td>1.2 Development of resilient land use systems that increase C stocks</td>
<td>Appropriate SLUS tested, adapted, and adopted (with degraded lands if)</td>
<td>Maintenance &amp; increase in C stocks; reduced GHG emissions; positive welfare impacts</td>
<td></td>
</tr>
<tr>
<td>1.3 Payment schemes for environmental services, including C markets</td>
<td>Testing &amp; adoption of schemes to reward local communities for adoption of practices that diminish GHG emissions and systems that increase C stocks; enhanced effectiveness of organizations working on rights &amp; compensation for environmental services.</td>
<td>Maintenance &amp; increase in C stocks; reduced GHG emissions; welfare gains to local community via PES</td>
<td></td>
</tr>
<tr>
<td>1.4 International policy instruments</td>
<td>Analyses that lead to advocacy for appropriate policy instruments</td>
<td>Maintenance &amp; increase in C stocks; reduced GHG emissions</td>
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**Adaptation**

<table>
<thead>
<tr>
<th>Innovation area</th>
<th>Outcomes</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 Coping with risk</td>
<td>Analysis of the mechanisms Amazon communities currently employ to cope with risk</td>
<td>A building block to help in the development of local &amp; national mitigation policies and programs</td>
</tr>
<tr>
<td>1.6 Community based fire management</td>
<td>Development of innovative community based fire management systems</td>
<td>Reduction in GHG emissions due to accidental fires (more common as the Amazon dries)</td>
</tr>
<tr>
<td>1.7 Development of sustainable land use systems adapted to CC</td>
<td>Appropriate SLUS tested, adapted, and adopted: forward looking to negative conditions associated with CC</td>
<td>Welfare maintenance and enhancement in the face of negative CC impacts</td>
</tr>
<tr>
<td>1.8 Local &amp; national adaptation policies and programs</td>
<td>Local and national governments formulate and enforce programs and policies that lessen the negative effects of CC on Amazon communities</td>
<td>Welfare maintenance and enhancement in the face of negative CC impacts</td>
</tr>
</tbody>
</table>
4.1.3. Knowledge gaps and expected International Public Goods

(1.1) Analysis of the carbon footprint of land use systems. Carbon balances can be accurately determined, but doing so is usually costly and not adapted to the practical concerns of evaluating different land use systems in terms of carbon and of basing systems of PES on such measurements. The knowledge gap is a practical system of measurement that can be implemented by national partners and that provides fair and transparent decision support data. The basics of such a system would be an IPG.

(1.2) Development of sustainable land use systems to maintain and increase carbon stocks. Such land use systems have been developed; but adoption is constrained by a number of factors (discussed in the degraded lands innovation focus). Briefly, because adoption of SLUS represents land and resource use intensification, rational resource users will clear to new forest areas if the land frontier is open and if security of tenure is lacking to the point that intensification cannot be privately justified. The knowledge gaps involve the policy instruments to close the forest frontier and to increase the private returns to intensification. Development of such instruments will constitute and important IPG.

(1.3) Development and testing of payment schemes for the management of ecosystem services (PES), including the exploration of carbon market opportunities. Once changes in the flow of environmental services can be practically measured, the question remains that of how to compensate land users for private investments made for public benefit. The basics of such a system will constitute an important IPG.

(1.4) Identification and application of international instruments that can reduce deforestation and forest degradation. Ideas regarding sound policy are not lacking. Just as for forest product development, the real key is how to facilitate the formation of a “policy value chain” that spans from policy recommendations based on wide stakeholder consultation, to policy and program development, and to effective and equitable implementation. The method to facilitate such a policy value chain would comprise a significant IPG.

(1.5) Examination of current mechanisms used to cope with climate change risk. How do people and communities currently cope with risk? Also, what is the perception of communities to current climate change? Do they perceive climate change as a continuation of the historical climate variability they have experienced or are they willing to change attitudes? Answers to these questions will help form the basis of the development of risk mitigation strategies and policies.

(1.6) Testing of innovative community based fire management. Communities in most of the Amazon will be threatened by more accidental and uncontrolled fires as temperatures rise and climatic conditions become drier. How can people work together at the community level to reduce fire danger and losses and minimize the intrusion of these fires into production forests or otherwise protected forest areas?

(1.7) Testing of adapted germplasm and resilient land use systems (in collaboration with Innovation Focus 2, degraded lands). The argument here is the same as that for area 1.2. The additional significant challenge question in this case is will we be able to come up with germplasm, species, and crops sufficiently adapted to future conditions that they will sustain Amazon peoples? The methods by which this question is positively answered will constitute a globally important IPG.
(1.8) **Work with local and national governments on appropriate adaptation programs.** Local and national governments and agencies will bear the brunt of helping Amazon communities face the effects of climate change. As in the area of international policy development, the key is again how to facilitate the formation of a “policy value chain” that spans from policy recommendations based on wide stakeholder consultation, to policy and program development, and to effective and equitable implementation. The methods used to facilitate such a policy value chain would comprise a significant IPG.

### 4.1.4. Hypotheses

- (1.1) Adoption of appropriate SLUS will increase carbon stocks; and these changes can be practically and transparently measured and used to implement systems of PES.
- (1.2) Constraints to the adoption SLUS that increase carbon stocks can be overcome.
- (1.3) Systems that reward adopters of SLUS for their investments that generate ecosystem services (and global environmental benefits) can be practically and equitably implemented without unreasonable transaction costs.
- (1.4) The constraints that limit appropriate policy development and effective implementation can be overcome through “policy chain development”.
- (1.5) Understanding current risk management strategies can greatly assist in the development of future programs and policies dedicated to risk management in the face of new, worsening conditions.
- (1.6) Individuals and communities can work together to develop strategies to successfully cope with worsening risks such as fire.
- (1.7) Adapted germplasm and systems can be developed in a timely manner for future more difficult environmental conditions in the Amazon.
- (1.8) The constraints that limit appropriate policy development and effective implementation can be overcome through “policy chain development”.

### 4.1.5. Research Approach

Implementation would require:

- Links with ACTO;
- The Amazon Initiative network as a basic platform for wider work with partners and stakeholders, including from the local to regional levels;
- Priority sites identified through AI network;
- Prioritization of AI funds for inventory, database, and comparative assessment and analysis;
- Continuing and enhancing current AI-research support to NGO and government led initiatives to minimize deforestation in the Amazon through payments for avoided deforestation;
- Participatory climate change impact mapping.
4.2. Innovation Focus 2: Sustainable Land Use Systems for Deforested/Degraded Areas

4.2.1. Rationale

Systems and technologies for sustainable production (or sustainable land use systems, SLUS) in deforested areas of the tropics have been developed in recent decades, e.g. improved, legume-based pastures, multistory agroforestry systems, small-scale timber plantations, silvopastoral systems, secondary forest management, and improved fallows. These technologies offer the possibility of harnessing the Amazon’s underutilized interspecific and intraspecific genetic diversity—a possibility favored by increasing awareness and concern for environmental issues among politicians, policy-makers, consumers and producers; new markets for previously untraded goods (environmental services); consumer interest in niche and novel products; and more accessible markets at national levels (due to infrastructure improvements) and international levels (due to removal of trade barriers).

Currently, the adoption of SLUS is limited by a series of constraints: poor targeting; lack of germplasm in sufficient quantity and/or quality or at accessible prices; market limitations, including but not limited to the lack of development of markets for environmental services; the combination of free access to forest frontiers and insecure land tenure; and lack of supporting systems (technical support, credit).

Innovation Focus 2 aims at the removal of these constraints through biophysical, social science and synthesis research for generation of IPGs aimed at critical points in the adoption chain, supplemented by use of established communication channels to producers and policy-makers. It has the following five components:

- Innovation Area 2.1: Technology targeting
- Innovation Area 2.2: Germplasm or seed supply system development
- Innovation Area 2.3: Policy research
- Innovation Area 2.4: Quantification of and payment mechanisms for environmental services
- Innovation Area 2.5: Support systems

4.2.2. Outcomes and impacts

The IPGs produced by Innovation Focus 2 will generate outcomes primarily at national and sub-national level and impacts at all levels.

Outcomes. At the local level, i.e. in priority intervention zones, we envisage the following outcomes of the IPGs generated by Innovation Focus 2:

(2.1) Selection and adoption of SLUS and implementation of appropriate adaptive research.
(2.2) Improved germplasm supply; initiation of additional programs based on improved national technical capacity.
(2.3) Local policies (e.g. at state and regional government levels) formulated or reformulated.
(2.4) Innovative reward for environmental services schemes instituted.
(2.5) New practices and approaches to dissemination and scaling-up adopted.

Impacts. The outcomes listed will produce the following impacts at local and national levels:

- land-use systems that prevent and reverse environmental degradation and that sustain environmental services; and
more resilient livelihoods, including more stable incomes and greater food security.

At **regional and global levels**, in addition to the aggregate of the local and regional impacts, the following emergent impacts will be produced:

- Enhanced biostability of Amazonian ecosystem;
- Reduction in global levels of greenhouse gas emissions.

The achievement of these outcomes and impacts would also rely on the AI (i.e. as distinct from AI-EP) adding an explicit policy advocacy and dialogue component to its remit.

<table>
<thead>
<tr>
<th>Innovation area</th>
<th>Outcome</th>
<th>Impact</th>
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<tbody>
<tr>
<td>2.1. Technology targeting</td>
<td>Matching of SLUS to people, their circumstances, and geographic areas; implementation of appropriate adaptive research</td>
<td>Increase adoption of SLUS with associated gains in ecosystem services, global environmental benefits, and human welfare</td>
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<tr>
<td>2.2. Germplasm or seed supply systems</td>
<td>Improved seed and germplasm supply where needed</td>
<td></td>
</tr>
<tr>
<td>2.3. Policy research</td>
<td>Local policies formulated or reformulated</td>
<td></td>
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<tr>
<td>2.4. Payment for environmental services</td>
<td>Effective reward system for payments for environmental services</td>
<td></td>
</tr>
<tr>
<td>2.5. Support systems</td>
<td>New practices and approaches to dissemination and scaling-up</td>
<td></td>
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**4.2.3. Knowledge gaps and expected International Public Goods**

(2.1) **Technology Targeting:** Existing approaches and tools need to be applied for matching of appropriate technologies to their application domains (in all dimensions, including integration with local knowledge and conditions). There is also a need for site-specific adaptive research, which can be guided by regionally-formulated protocols for technology adaptation.

(2.2) **Germplasm Supply Systems:** Adoption of many SLUS depends on available seed or germplasm for multi-purpose trees, forages, legumes, and crops. The development of end-user oriented seed systems will be a Program priority. Many Amazonian species have underutilized potential for income generation and food security. Their use or marketability is limited by germplasm availability, cost, and quality. Many wild and semi-domesticated species are also threatened with genetic erosion due to deforestation. Due to the number of species involved and their high genetic diversity, it is unlikely that national research institutions can offer an adequate response to these problems. Approaches are needed that facilitate and enable local level action to harness the potential of Amazonian plant biodiversity. These approaches must take into account possible impacts of future climate change on relatively long-lived perennial crops.

(2.3) **Policy Research:** SLUS generally imply land use intensification. The ‘pull’ of an open agricultural frontier, however, discourages land use intensification, as does land tenure insecurity. At present knowledge of appropriate policy approaches to these problems is lacking.

(2.4) **Quantification of Environmental Services and Mechanisms for their Reward:** Land-use intensification can lead to an enhanced flow of environmental services, such as increased carbon
stocks, habitat provision for biodiversity, and water quality or quantity. Producer interest in providing global environmental benefits is understandably minimal; but could be increased if they could be rewarded for generating public benefits. Practical methods for measuring changes in levels of environmental services related to specific land use systems in specific sites need to be developed; and mechanisms for rewarding these increased flows need to be identified and tested.

(2.5) Support systems: Well-targeted technologies and adequate germplasm supply will not in themselves secure widespread adoption. Establishment and maintenance of SLUS may require investments beyond the reach of smallholders. Innovative approaches to meeting farmers’ needs for initial financing—without trapping them in debt—are needed. Similarly, with diminishing public technical support and extension, new ways of making producers aware of technological innovations are needed.

Work under Innovation Focus 2 will be aimed at generating IPGs, as outlined below.

**IPG 2.1: Decision support tool (DST) for SLUS selection and for guiding local adaptive research:** The DST will be based on GIS and ex ante impact analysis of experience to date with SLUS and will output (a) multidimensional (socioeconomic, biophysical, policy environment) application domains, and (b) suggested areas for local adaptive research, based on user input of local conditions, including information derived from local knowledge. The DST will be aimed at NARIs staff and other providers of support to technology dissemination.

**IPG 2.2: ‘Toolkit’ on approaches to local germplasm supply:** Pilot local germplasm supply initiatives will be implemented that include participatory improvement, domestication and seed / plant supply. The toolkit will cover approaches to entrepreneurial organization for germplasm supply, a decision support tool aimed at guiding improvement and domestication strategies, and will be aimed at NARIs staff and other providers of support to technology dissemination. ‘Best practice’ recommendations will be drawn up based on these pilot projects.

**IPG 2.3: Policy recommendations for specific Amazonian regions:** Policy lessons on access and use of land resources will be formulated based on Amazon-wide analysis. The process will be based on exhaustive review of impacts of past experience, based both on published information and field research. The policy recommendations will be formulated at different levels corresponding to policy-makers at Amazonian, national and sub-national levels, in the latter case with reference to specific countries / regions.

**IPG 2.4: Toolkit for facilitating reward for environmental services of SLUS:** This IPG will describe approaches to practical measurement of changes in levels of environmental services at plot and landscape levels and to institutional arrangements for securing rewards for smallholders engaged in positively impacting SLUS. The research team will formulate simple criteria, indicators and measurement variables that can be used to establish, within reasonable bounds of probability, levels of change in environmental services, based on synthesis review, consultations with organizations involved in basic research and comparative, coordinated field research (observational studies). It will also test local institutional arrangements for securing rewards for these services.

**IPG 2.5: Lessons and recommendations on dissemination approaches:** Research to generate this IPG will analyse ‘success/failure stories’ drawn from diverse scenarios throughout the Amazon basin. This analysis, informed by a wider literature analysis, will be used in the formulation of
pilot dissemination projects. The results of these pilot projects, together with the prior region-wide analysis, will be used in the formulation of lessons and recommendations.

4.2.4. Hypotheses

Five research hypotheses, closely related to the rationale of the Innovation Focus, were formulated. All refer to explanations for the lack of adoption of SLUS:

Lack of adoption has been caused in part by:

- (2.1) Poor targeting and ex ante impact analysis;
- (2.2) Deficient seed systems / inadequate genetic material
- (2.3) Free access to forest lands and lack of secure tenure
- (2.4) Requiring private resource users to invest in public benefits
- (2.5) Poor approaches to dissemination.

4.2.5. Research approach

Work on the deforested or degraded lands focal area will require:

- Collaboration and integration with the other focal areas;
- Building on a long history of such work (with attendant successes and failures);
- Recognition of a wide variety of potential SLUS that need to be matched to very particular social, economic, and environmental circumstances;
- Explicitly multinational projects organized around each IPG.
- Enhancing current AI-research support to NGO, producer organizations and government led initiatives to foster sustainable land use systems.

4.3 Innovation Focus 3: Enhanced Benefits from Forests to Livelihoods and the Environment

4.3.1 Rationale

This innovation focus applies research to the challenge, “How to enhance benefits from forests for livelihoods, development, and the environment”. Forests and forest resources provide livelihoods for current forest dwellers and a temptation for loggers, ranchers, and perhaps future bio-fuel crop producers. As such, governance is an over-arching issue. Although the AI-EP will attempt to be stakeholder neutral, community forestry will be a major activity of this focal area. The following three areas of the innovation focus reflect both opportunities not to be wasted and challenges that critically need to be faced:

- Innovation area 3.1: Potential of underutilized forest species
- Innovation area 3.2: Multiple and diversified forest use and management
- Innovation area 3.3. Property use and rights
4.3.2. Outcomes and impacts

The “forest” innovation focus will provide outcomes at the sub-national, national, and regional levels; and impacts at all levels from local to global. Several outcomes and impacts of the three sub-components are expected.

The sub-component working on the potential of underutilized forest species and populations will have the outcomes, first, of the dissemination of appropriate forest seed and germplasm; and of associated needed knowledge for the management of such germplasm; and, second, of the marketing of a wider range of forest products. The expected impacts of use of underutilized forest species would be greater income stability resulting from greater marketed product diversity; and increased income of forest resource users.

The sub-component of multiple and diversified forest use and management seeks the outcome that stakeholders recognize and support such management. In this case, stakeholders are policy makers, NGOs, foresters/forest managers, and end users. Impacts would be the maintenance of environmental services in terms of biodiversity and carbon stocks; and improved, more stable livelihoods of end-users.

A third sub-component would examine the issue of resource access and use. Outcomes would be innovative systems that build on the traditional use rights of forest communities in the establishment of more formal land tenure and resource access rights. The expected impacts would be increased and improved stewardship of forest resources and lands by local communities; and such stewardship would be expected to maintain and enhance the provision of environmental services.

<table>
<thead>
<tr>
<th>Innovation Focus 3: Enhancing the Benefits from Standing Forests</th>
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<tr>
<td><strong>Component</strong></td>
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<tr>
<td>3.1. Underutilized forest species</td>
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<tr>
<td>3.2. Multiple &amp; diversified forest use &amp; management</td>
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<td>3.3. Property rights &amp; resource access</td>
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4.3.3. Knowledge gaps and expected International Public Goods

(3.1) Underutilized forest species: Promising species and their products need to be characterized in terms of existing diversity and its potential, expected benefits and in terms of constraints to development of products and of successful market chains. Research would then address how to overcome such constraints, i.e., how to develop successful, transparent and equitable value chains for the underutilized species. Formulation and subsequent implementation of adequate
complementary conservation strategies (ex situ/in situ) should assure current and future use of the genetic resources.

(3.2) Diversified forest use and management: As mentioned, governance is at the heart of successful forest management. This and the next area (i.e., property rights and use) deal with influencing policy makers. A first step is to discover how to get different stakeholders to embrace diversified forest use and management as an overall strategy. Needed is the development of a communication strategy that reaches and allows participation of all stakeholders. These outcomes will contribute to the impacts of maintenance of ecosystem services and improved livelihoods of stakeholders.

(3.3) Property rights and resource access: The challenge is for the AI-EP to discover ways to work with government agencies responsible for controlling access and use of forest lands and resources—ways that lead to practical and appropriate end user rights and responsibilities. The Program will need to understand and then to build upon traditional systems of access and use rights. The research question will be how to avoid the problems associated with common property resource access, on the one hand, and how to provide incentives for sound management through innovative forms of secure access and tenure, on the other. The expected impacts would be increased investment in and care of forest resources with secure rights, and the maintenance of forest ecosystem services.

Work under Innovation Focus 3 will be aimed at generating IPGs, as outlined below.

IPG 3.1. How to successfully improve welfare through use of underutilized species. The promise of underutilized forest species is seductive. There have, however, been few real successes. The IPG in this case will be in generating lessons from successful cases generated by the AI-EP. The lessons should deal with initial product identification, product and market value chain development based on new local, regional, and global opportunities. Lessons should also consider past failures in an attempt to not repeat them. Appropriate conservation actions will assure current and future use of the existing diversity.

IPG 3.2. How to facilitate adoption of a unified vision by multiple stakeholders. The innovation area will try to have multiple forest stakeholders accept and adopt a somewhat singular vision of multiple & diversified forest use & management. The IPG will be in discovering ways to make this happen. Analysis of potential impact pathways will be needed.

IPG 3.3. How to improve systems of resource access and land tenure that promote improved stewardship while avoiding problems of common access resource use. Work on innovative systems of rights and responsibilities regarding forest lands and resources will initially be conducted at pilot areas. Workable lessons learned that can be applied to wider areas within the Amazon (and elsewhere) will form a set of valuable IPGs.

4.3.4. Hypotheses

Five research hypotheses, closely related to the rationale of the Innovation Focus, were formulated. All refer to enhanced benefits from forests to livelihoods, development and the environment:

- (3.1) The welfare of forest users can be improved through use of underutilized forest species and populations.
- (3.2) Such welfare gains will depend on successful product and value chain development.
• (3.3) Benefits in terms of both welfare and ecosystem services will require that multiple stakeholders accept and adopt a singular vision—i.e., in this case, of multiple and diversified forest use and management.

• (3.4) Maintenance of forest ecosystem services will depend on sound, practical systems of resource access and property rights.

• (3.5) The success of such systems will depend on the balancing of open access problems and the increased potential for improved husbandry that comes with more secure access and tenure rights.

4.3.5. Research Approach

Work on this innovation focal area would be characterized by:

• Integration with the other focal areas, especially market development and (as a seed and germplasm “donor”) with the deforested and degraded lands area;
• Attention paid to multiple, possibly conflicting stakeholders and resource uses;
• A balance between promoting welfare gains and equity, on the one hand, and the maintenance of ecosystem services on the other;
• Multi-institutional and agency collaboration;
• Reliance on the AI platform for policy advocacy based on research outputs;
• Strategies that overall will not lead to further deforestation

4.4. Innovation Focus 4: Market Chain Development for Amazon Products

4.4.1. Rationale

Products from forests and from deforested or degraded lands have the potential to improve the welfare of Amazon communities if appropriate products can be identified and developed, if seed and germplasm systems can be established, and if market value chains can be developed. Integration of such products in sustainable land use systems (SLUS) can have positive impacts in terms of environmental services. The innovation foci dealing with forests and with deforested and degraded lands will work with this market innovation focus to develop products (e.g., tropical fruits and fruit products, non-timber forest products, agricultural outputs, sources of biofuels (with appropriate caution) and seed and germplasm needed in SLUS and systems (e.g., forest, agroforest, agro-silvo-pastoral) to produce those products. The central area of concern of this focus will be establishing innovative, successful ways to facilitate market value chain development.

Product and market development faces the constraints of poor infrastructure, lack of market information and access, lack of economies of scale, periodic rather than constant production, limited value added capabilities, lack of standards and quality control, post-harvest management problems, and limited investment capital. Competition for basic resources by ranchers and loggers, and the economic rationality of extensive slash-and-burn agriculture provide other barriers to product and market chain development.

Opportunities, however, include growing developed country consumer interest in green, fair trade, and equitable products coming from critical environments of global importance like the
Amazon. In spite of negative effects, road-building can improve access to regional and even international markets. Free trade agreements may have positive implications for Amazon producers. Large corporations in developed countries have recently included departments or divisions of corporate responsibility—and such efforts to protect or enhance production ecosystems and to improve the welfare of producer communities are being taken very seriously. Communications have improved: increasingly, villagers can be counted on to have and use cell phones, and may even have access to the internet. Institutional arrangements provided by the AI-EP benefit from improved information on markets, detailed spatial and socioeconomic data bases for targeting and ex-ante impact analysis, and in general an information environment that has expanded greatly in the last five years.

The innovation focus will have the following four components:

- **Innovation area 4.1**: Identification, *ex ante* impact analysis and targeting of potential products, especially but not limited to high value
- **Innovation area 4.2**: Product development and seed and germplasm management (in collaboration with the degraded lands and forest innovation areas)
- **Innovation area 4.3**: Production in SLUS (in collaboration with the degraded lands and forest innovation areas)
- **Innovation area 4.4**: Market value chain development

### 4.4.2. Outcomes and impacts

(4.1) **Identification, *ex ante* impact analysis and targeting of potential products, especially but not limited to high value crops.** Outcomes are to include identification and characterization of potential products, spatial and socio-economic targeting of geographical areas, communities, and expected markets, and *ex ante* impact analysis. Impacts will be positive in terms of welfare if are successfully developed, targeted, and marketed; and if positive investments in failures are avoided.

(4.2) **Product development and seed and germplasm management** (in collaboration with the degraded lands and forest innovation areas). Outcomes will include product development, including domestication and selection, and development of appropriate seed and germplasm systems. Positive welfare impacts will be obtained as new, marketable products are developed and if people have access to affordable needed seed and germplasm (and if market value chains are successfully developed, below).

(4.3) **Production in SLUS (in collaboration with the degraded lands and forest innovation areas).** As an important outcome, crops, trees or other planted products, and forest products will be integrated into SLUS. Positive welfare impacts will be derived from production in sustainable systems. Positive environmental impacts are expected from these more intensive, often tree- and perennial crop based diverse systems.

(4.4) **Market value chain development.** The crucial outcomes are methods to facilitate equitable, sustainable market value chains; and the development of the chains themselves in target communities. Outcomes will depend on overcoming the constraints and taking advantage of the opportunities listed in the rationale. The innovation area will have to deal with information management, negotiation along value chains, problems of infrastructure, developing continuous production and economies of scale, product standards and quality control, resources access and
land tenure, and financial mechanisms. Positive welfare impacts will be derived in terms of income, income stability, employment creation, and value added. Social and human capital gains will accompany successful market chain development and participation.

**Innovation Focus 4: Market Chain Development of Amazon Products**

<table>
<thead>
<tr>
<th>Innovation area</th>
<th>Outcome</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1. Product identification, ex ante impact analysis, &amp; targeting</td>
<td>Potential products identified &amp; characterized by target regions, communities, &amp; expected markets &amp; impacts</td>
<td>Welfare impacts: positive in cases in which products are successfully developed and marketed; positive if investments in failures are avoided</td>
</tr>
<tr>
<td>4.2. Product development &amp; seed and germplasm management</td>
<td>Products (including domestication &amp; selection) and appropriate seed &amp; germplasm systems developed</td>
<td>Positive welfare impacts if market value chain and seed system development are successful</td>
</tr>
<tr>
<td>4.3. Production in SLUS</td>
<td>Products integrated into sustainable land use systems</td>
<td>Gains in ecosystem services (&amp; global environmental benefits)</td>
</tr>
<tr>
<td>4.4. Market value chain development</td>
<td>Methods to facilitate equitable, sustainable market value chains; development of the chains themselves in target communities</td>
<td>Positive welfare impacts in terms of income, income stability, employment creation, &amp; value added</td>
</tr>
</tbody>
</table>

### 4.4.3. Knowledge gaps and expected International Public Goods

(4.1) **Product identification, ex ante impact analysis and targeting.** Are there products from the Amazon awaiting discovery, development, and market chain development? Numerous projects have tried and failed to develop and market new products. Can the **AI-EP** combine its overall multi-foci approach to support successful market chain development? Positive methods to do so will constitute a much needed IPG.

(4.2) **Product development and seed and germplasm management** (in collaboration with the degraded lands and forest innovation areas). It is known that products like tropical fruits need selection or domestication, propagation, and availability of seed and germplasm to potential producers. This area is a necessary but insufficient pre-condition to market chain development.

(4.3) **Production in SLUS** (in collaboration with the degraded lands and forest innovation areas). Can new Amazon products fit into SLUS such that both welfare and environmental impacts are positive? This is not simple: SLUS imply land use intensification and higher private investments with some of the hoped for benefits being global rather than local and private in nature. How can trade-offs be recognized and successfully balanced? How to successfully address trade-offs would provide a much needed IPG.

(4.4) **Market value chain development.** Quite simply, how can the numerous constraints to successful market value chain development be overcome? How can new opportunities be successfully factored into such development? Because success will depend on all of the innovation foci involved in the **AI-EP**, it is the development of a holistic, systems approach involving from PES to resource access rights to plant domestication to market chain development that will result in a key IPG.
4.4.4. Hypotheses

- (4.1) There are Amazon products that can be successfully marketed to benefit appropriately targeted Amazon peoples, communities, and regions.
- (4.2) The products and associated seed/germplasm can be developed such that marketable products and access to potential producers are facilitated.
- (4.3) Identified products can be integrated into SLUSs in ways that benefit both people and the environment.
- (4.4) Market chains can be developed (i.e., constraints can be identified and overcome) for Amazon products and that benefit from local peoples and communities to distant consumers, while not contributing to environmental degradation—and better yet, enhancing environmental services.

4.4.5. Research approach

This innovation focus would be characterized by:

- integration with the other three foci;
- coordination with the many efforts within the Amazon to identify and promote new products, especially fruits and non-timber forest products; and
- contributions to the growing interest and effort within the CGIAR to develop high value crops and market chains for the benefit of the poor.

5. INTEGRATION

5.1. Integration among thrusts. Integration of the four innovation foci (IF) will be a central characteristic of the AI-EP. The counter-productive creation of separate silos of work will be actively avoided. Fortunately, the four IF can be integrated: through: (a) strong, natural thematic overlaps, and (b) implementation featuring equally natural joint development of proposals and collaborative project implementation at appropriate common sites.

Thematic integration. To repeat the innovation focuses:

- Climate change: mitigation and adaptation
- Sustainable smallholder production on deforested and degraded land
- Enhanced benefits from forests for livelihoods and the environment
- Market chain development of Amazon products

Identification and segregation of the AI-EP into four thrusts, while not arbitrary, do represent perhaps only one way to “cut the pie” given strong, natural thematic overlaps. These overlaps will provide opportunities for integration.

First, the two-fold classification of degraded vs. forest lands is somewhat arbitrary. The AI-EP will deal with what is actually a heterogeneous continuum of land use in the Amazon. Such uses include:

- Relatively untouched forest;
- Forests in which the extraction of goods ranges from extensive to intensive;
- Extensive, long-cycle and relatively sustainable slash-and-burn production;
- Intensive slash-and-burn agriculture leading to land degradation;
- Livestock raised on pastures established after logging and/or slash-and-burn, and varying from intensively managed improved pastures to degraded lands with depleted, compacted soils; and
- Secondary vegetation at very different states of succession.

The **AI-EP** will need to provide leadership in understanding the dynamics of major land use changes and conversion, attempting, overall, to assist in reversing land and ecosystem degradation while decreasing the needs to further deforest or degrade forest lands--while providing for the welfare needs of legitimate forest users.

The market chain innovation focus, second, actively recognizes the need to catalyze linkages, relationships, and ways of doing business that enhance the welfare of forest users. The “goods” around which market chain development will take place include from non-timber forest products, from subsistence crops to high value fruits to bio-fuels produced on degraded or deforested lands, to crop or livestock products reflecting new market opportunities associated with fair and free(er) trade. The thrust will need to work in and with the continuum of land uses from degraded to more pristine forest environments, balancing local welfare needs and the maintenance and generation of global environmental benefits (GEBs).

Thirdly, the climate change (CC) focus will be fully integrated with the others. Land use patterns reflect differential provision of ecosystem services--both positive and negative, as in the emission of greenhouse gases (GHGs) from slash-and-burn agriculture--that need to be monitored and, in some cases, purchased through systems developed to provide payments for ecosystem services (PES). The CC focus will also look at both welfare (to the extent that adaptation implies work to diminish the negative effects of CC on local people) and public concerns (to the extent that work on mitigation seeks the maintenance and enhancement of GEBs). The market chain development thrust will also explore northern consumers’ willingness to pay for “green” and fair-trade products—again accentuating the integration of the thrusts and their respective but considerably shared objectives.

The integration of the **AI-EP** is shown in the following schematic diagram: Featured are overlapping, complementary research for development thrusts that will be integrated at the project level through common proposal development, project implementation at appropriate common field sites, and through the production and development of integrated, cross-cutting outputs. Such outputs will address the different needs of stakeholders (e.g., global concerns regarding environmental goods and services vs. local welfare concerns). Such trade-offs can only be addressed if first recognized and then dealt with accordingly.

<table>
<thead>
<tr>
<th>Climate change: mitigation and adaptation</th>
<th>Sustainable smallholder production on deforested and degraded land</th>
<th>Market chain development of Amazon products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced benefits from forests for livelihoods and the environment</td>
<td></td>
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</table>

**Figure 4. Integration among research thrusts of the AI-EP**
5.2. **Integration at the project level.** A few projects may be specific to a particular IF and would not necessarily be integrated with other efforts. For example, a regional survey of non-timber forest products (NTFPs) may be specific to the “enhanced benefits from forests” thrust.

Most projects, however, would necessarily and appropriately integrate more than one IF in order to optimize achievement of outputs. As an example, a project on development and adoption of an appropriate, sustainable improved system on degraded lands cleared from forest would first require inputs and capacities from the “degraded or deforested lands” IF. These would include targeting and *ex ante* impact analysis, identification of adapted species, establishment of seed systems to make needed germplasm available to local participants, and facilitation of community-based testing of the innovative system.

“Enhanced benefits from forests” could provide appropriate seed or germplasm where forest species were used in the land recovery work. The “market chain development” thrust would first provide crucial *ex ante* financial impact analysis regarding new products and product lines produced by communities developing more sustainable systems; and would secondly lend guidance in the actual development of market chains that enable individual and community financial rewards that, in turn, enable adoption of new systems.

The “climate change” (CC) focus would be an integral part of such a project: changes in land use systems from degraded pasture, for example, to systems incorporating trees, new pasture and forage legumes, and livestock--represent probable changes in above- and below ground carbon stocks, and possible but arguable changes in GHG emissions if avoided deforestation is argued as an impact (not to mention potential changes in biodiversity). The CC component of the project would first need to develop simple but effective ways to measure changes in carbon socks (hopefully increases) and GHG emissions (hopefully decreases); and would, second, help to develop realistic and workable systems of payments for environmental services (PES).

5.3. **Integration though project implementation at common sites.** The AI-EP will build upon experience and capital that has accrued from learning alliances such as the “Alternatives-to-Slash-and-Burn” and the AI in terms of field research for development sites. Targeting work will (re-) assess sites in terms of appropriateness for integrated, cross-thrust, multi-institutional field work. Projects, rather than re-inventing the wheel at old or new sites, will carefully build on--and take advantage of--existing assets of human, social, and infrastructural capital. Annex 3 portrays the priority sites for AI-EP research in the seven member countries of the AI Consortium.

5.4. **Integration across levels.** Integration will also occur across local, national, regional, and global levels in terms of knowledge and international public goods (IPGs), welfare or poverty alleviation, and environmental services or the generation of GEBs.

The AI-EP will generate knowledge from work at local sites and from synthesis of local and national analyses. The Program will strongly contribute to the generation of IPGs at the regional and, of course, global levels--as outputs (including comparative syntheses) presented in ways that complement the outputs of others working in the Amazon while highlighting the comparative advantage of the AI-EP.

One particular intended use of the knowledge generated needs to be highlighted: syntheses of findings will be used by the AI Consortium in appropriate policy advocacy at the national level. The advocacy role of the AI-EP would build on growing recognition of the AI as an Amazon-
wide multi-institutional, multi-faceted platform and on recognition that the AI can provide a stronger voice than individual member institutions of the AI-EP.

Efforts to address the welfare/poverty concerns in the region will be integrated across levels and with efforts to maintain or enhance environmental services. Poverty alleviation is the primary goal of the regions’ poor; and national policies to alleviate poverty will be closely considered by the AI-EP. Work at local, national, and regional levels will reflect global concerns on poverty and social vulnerability. Certainly, greater attention is correctly given to the alleviation of much higher absolute and relative poverty in Africa and in Asia. The AI-EP will strive to generate interest at the global donor level based on the tight interaction between existing poverty and the degradation of Amazon environments and the corresponding losses of environmental services provided. Quite clearly, relatively small numbers of the poor--often assisted by poor policy choices or implementation--can wreak havoc on large portions of the Amazon.

The maintenance and enhancement of environmental services is the primary global concern regarding the Amazon. That concern is of the least importance to the local poor. Recognition of this key dichotomy is important to the AI-EP: while local peoples are often asked to invest in changing land uses from less to more sustainable forms, they are little interested in doing so for the creation of global benefits. As a result, the AI-EP will face the issue by developing innovative, workable systems to reward lands users who increase public goods through PES.

A schematic portrayal of the integration of the AI-EP across levels is presented below.

<table>
<thead>
<tr>
<th>Integration of the EP across levels</th>
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<tbody>
<tr>
<td><strong>Local</strong></td>
</tr>
<tr>
<td>Knowledge</td>
</tr>
<tr>
<td>Welfare</td>
</tr>
<tr>
<td>Environmental services</td>
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6. **MONITORING AND EVALUATION**

Monitoring & Evaluation will be part of the design of each project implemented by the AI-EP. Consistent with the participatory character of this Program, internal monitoring will be based on consultations and assessments with the final beneficiaries. The monitoring will follow the Participatory Review and Reflect Process – PRRP, an approach developed by ActionAid-UK for project monitoring. “The overall purpose of these reflection processes is to learn and share learning from achievements and failures to improve on-going programme quality. The aim being to involve stakeholders, particularly poor people, but also partners, donors and peers, in the analysis of what has worked and what hasn’t. The aim of the PRRPs is to increase reflection,
transparency and learning in order to improve on-going work.“

Other tools such as a simplified version of 'outcome mapping' developed by IDRC will help the AI-EP track outcomes for policy advocacy at the national level.

Relatively direct ex-post evaluation of Program impacts will examine:

- On-farm and/or community based adoption of more sustainable systems (in terms of adopters and areas);
- Estimates of sustainability and ecosystem service indicators, e.g., associated change in ground cover, biomass, carbon stocks, biodiversity, and system diversity;
- Indicators of sustainable use of forest resources that also enhance human welfare;
- Development of market value chains in terms of changes in human, social, and financial capital;
- Estimates of the generation of global environmental goods given adoption of innovation—including off-site effects such as avoided deforestation and decreased GHG emissions (and including due to on-site bio-fuel production);

Monitoring and evaluation of project impact will be based, in part, on process “uptake” indicators including:

- Publications and a database to allow citation analysis
- A training database based on group and individual participation
- Follow-up tracking of trainees
- Website downloads
- Project database
- Press releases on success stories

7. PARTNERSHIPS AND COLLABORATIVE ARRANGEMENTS

7.1 Internal Partnerships: Member Institutions of the AI Consortium

Through the leadership of its CGIAR member centers, the AI-EP will promote the participation of member institutions of the AI Consortium in collaborative research activities implemented through the Program. The AI Consortium provides a platform for collaborative research and development by institutions working in the Amazon region. Scientists and development practitioners in seven countries of the Amazon participate in the AI. Formed and led by national and international research centers, the AI fosters broader collaboration between the member organizations and civil society organizations.

The history of AI demonstrates its dynamic nature. The consortium was established after 16 months of preparatory consultation in six Amazonian countries. Initial participants were four CGIAR research centers: CIAT, CIFOR, ICRAF (World Agroforestry), and IPGRI (Bioversity

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6 Transforming development practice – the journey in the quest to develop planning, monitoring and evaluation systems that facilitate (rather than hinder) development. Ros David & Antonella Mancini, ActionAid. PDF document available in 03.02.2004 at http://www.mande.co.uk/docs/ActionAidpaperforDACconferenceFinaldraft.pdf
International); a regional development organization: Instituto Interamericano para la Cooperacion Agricola (IICA); and the National Agricultural Research Institutions (NARIs) of Bolivia, Brazil, Colombia, Ecuador, Peru, and Venezuela.

Within 18 months (October 2004-May 2006), the AI Steering Committee recognized a need to provide greater diversity in its membership. This was accomplished by inviting organizations representing diverse stakeholders involved in the sustainable development of the Amazon. Instituto de Investigaciones de la Amazonía Peruana, IIAP (Peru); Centro de Investigación Agrícola Tropical, CIAT (Bolivia); the Bolivian Fundación para el Desarrollo Tecnológico, Agropecuario y Forestal del Trópico Húmedo; and the Association of Amazonian Universities (UNAMAZ) were admitted in mid-2005. The following institutions became AI associate members in 2006 after sub-regional stakeholder workshops: Bolivia: Universidad Amazónica de Pando (UAP); Brazil: Instituto de Pesquisas da Amazônia (INPA); Colombia: Universidad de la Amazonía; Ecuador: Instituto para el Ecodesarrollo Regional Amazónico (ECORAE); and Venezuela: Centro Amazónico para la Investigación y Control de Enfermedades Tropicales Simon Bolivar (CAICET).

In 2007, the agriculture research organization of Suriname, CELOS, and the Environmental Protection Agency of Guyana, EPA, have expressed interest in joining the AI Consortium, and similar national stakeholder consultations will occur in these two countries. Consultations are ongoing to identify associate institutions that will form country-level AI commissions before the September 2007 AI Steering Committee meeting.

7.2 AI Network for Conservation and Sustainable Resource Use

One mechanism to facilitate the collaborative agenda of the AI-EP will be integration with the AI thematic networks. Since 2006 the AI has facilitated the development of a network of researchers from local, national and international institutions in seven countries. Its operating principle is the participation of research and development actors working together.

Sub-regional workshops in each country allowed people to discuss the technical scope of the consortium, resulting in the identification of eleven themes. Each theme was conceived as the focus of a thematic network with sub-networks in each country. Wherever possible a facilitator was identified for each sub-network. Subsequently, the AI technical representatives worked to increase membership and fill in gaps in facilitators. A workshop with network facilitators was held in March 2006, with the aim of building identity and a shared vision among participants.

This multi-country effort aims to build bridges among government and non-governmental institutions, the agricultural and environmental sectors, and among local, national and international organizations. Benefits of these partnerships include access of less-endowed institutions to valuable scientific and technological assets, opportunities for researchers to work with a broader range of stakeholders, and formulation of realistic interdisciplinary programs targeting sustainability. Collaborative research will thus strengthen a network of institutions on sites that span the Amazon, offering analyses of regional and national problems that are grounded in reality. The output will be an inter-institutional research for development agenda through which thematic and sub-regional networks and project teams collaborate on innovative and integrative methods and generate data comparable across sites. Investment in the AI-EP will stimulate participant institutions to incorporate collaborative approaches, ensuring efficient transitions and an exit strategy.
The **AI** network aims to increase efficiencies through a communication and knowledge management strategy. To that end, the **AI** will develop tools and medias including: (1) on-line networking coordinated from a hub housed at the **AI** Secretariat and ensuring on-line accessibility to less-connected network nodes of the participant countries; (2) web-page design, including on-line guidance on thematic discussions and distance learning tools; (3) a publication series, including newsletters, policy briefs, and technical notes; and (4) multi-stakeholder distance learning dialogues on pathways for effective up-scaling strategies and for enhanced impact of communication tools on extension approaches.

### 7.3 External Partnerships

The **AI-EP** will seek interactive synergies with appropriate institutions and programs operating in the Amazon. Although inclusion of additional CGIAR centers is desirable, the **AI-EP** will begin with the current four centers that are members of the **AI** Consortium. Once the program is established, efforts will be made to integrate other centers.

The **AI-EP** can and should benefit from and build upon the tools, methods, and outputs (including cross-regional synthesis and comparison) produced by the Alternatives to Slash-and-Burn (ASB) CGIAR System Wide Program. The **AI-EP** can be a vehicle for the application of ASB results in the Amazon; and can contribute to the synthesis and translation of ASB outputs into IPGs. ASB is expected to add value to the activities of the **AI-EP** through: sharing of
research methods and comparative frameworks; capacity building in methods and approaches; comparison of results from other regions in the tropical forest margins; bringing Amazon results to the attention of global policy debates; and fundraising for projects of mutual interest. The AI is expected to add value to the ASB regional agenda for the Amazon Basin through: (1) disseminating research methods and approaches from ASB sites in Peru and Brazil to other AI sites, and (2) helping to disseminate relevant ASB results and methods to researchers and policymakers through the AI networks. The AI-EP is expected to contribute to the ASB global agenda by providing context-specific results on issues of relevance across the tropical forest margins. ASB and the AI-EP commit to respecting the intellectual contributions and intellectual property rights of all individuals and institutions involved in research conducted through the AI and ASB. If ASB plays a significant role in the provision of methods, comparative analyses, or fund raising for AI-EP activities, or vice versa, the secretariats of the two initiatives will agree upon appropriate acknowledgement on a case-by-case basis. The relationship between Amazon Initiative and ASB is represented through the diagram below.

![Figure 6. AI x ASB relationship](image)

Other CGIAR programs expected to have synergies with the AI-EP are the Collective Action and Property Rights (CAPRi) and the Consortium for the Sustainable Development of the Andean Ecoregion (CONDESAN), the later given relevant Amazon-Andes ecoregional interface. Outside the CGIAR, the AI-EP will follow the AI in seeking and enhancing integration with major programs and institutions effectively working in the region. The main political support for the bridging of the AI and the AI-EP with donors and ministries of environment is provided by the Amazon Cooperation Treaty Organization (ACTO). ACTO is a member of the AI Steering Committee and has followed the AI process since its inception, having included the Consortium in its strategic plan.

Integration with the Large Scale Biosphere-Atmosphere Experiment in the Amazon (LBA) will be facilitated because Embrapa and INPA (AI member institutions) are members of LBA biophysical and biogeochemical research. The same rationale applies to the implementation of several components of the Pilot Program for the Conservation of Brazilian Rainforests (PP-G7).
In terms of bilateral cooperation, since 2004 the government of Spain has supported work in the Amazon as a strategic priority for the use of its CGIAR contribution. Collaboration with Spain will be expanded in 2008; and the implementation of the AI-EP will generate additional opportunities for the participation of INIA-Spain and Spanish universities in technical and scientific activities of the Consortium.

The integration of the AI-EP with German programs in the Amazon will enhance existing collaboration initiated by the AI through the work of a natural resource economist, who is based at the AI office in Belém since January 2007, being hired by CIAT with the support of the German Centrum für Internationale Migration und Entwicklung (CIM, a human resources recruitment and placement organization for German development cooperation) to lead the AI work on environmental services and ES compensation. In October 2007 the AI will link ACTO, GTZ and UNAMAZ in sponsoring a panel of Amazonian students to present their papers on environmental services in the forthcoming TROPENTAG conference. Another relevant bilateral opportunity being nurtured through the AI is the collaboration with JICA, which involves Japanese funding for a 5-year training program on agroforestry technology promoted by the AI. Another opportunity has been recently established with British international funding of a consortium to be led by the AI to conduct a 7-month situation analysis on the role of ecosystem services on poverty alleviation, to begin in July 2007. The potential for partnerships with USAID and American universities is also significant. Opportunities for such collaboration will include the USAID-CGIAR linkage funds, as was the case of three projects carried out in 2005 and 2006 under the AI, and in collaboration with the University of Florida and Indiana University. The implementation of the AI-EP science agenda will enhance integration of the AI with the recently created Amazon Basin Conservation Initiative (ABCI), funded by USAID. Canadian, French, and European Union partnerships will also be considered in subsequent stages of the AI-EP.

### 7.4 Mode of Operation

Collaborative research projects in the domain of the AI-EP will be carried out according to the process presented below.

- In the second semester of 2007, the AI Management Team (plus the AI-EP Coordination Office after the Program is formally approved) will consult with both the CGIAR member centers and the national and local institutions of the Consortium. Consultations will consist of the following:
  - CGIAR member centers will be requested to coordinate their respective MTP projects with the four Innovation Foci of the AI-EP. Each member center will designate priority projects for collaborative activities in the domain of the AI-EP, and will assign scientists as focal points for project integration for each AI-EP Innovation Focus (July-October 2007).
  - Country consultations will be conducted to compile regionally relevant research for development agendas according to the four AI-EP Innovation Foci. Consultations will be workshops carried out in selected Amazonian sites, and will have the participation of AI founding and associate institutions, including CGIAR scientists (November 2007-February 2008).
  - By March 2008, four interdisciplinary and inter-institutional task forces (one for each IF) will be formed by scientists from CGIAR centers and national...
institutions. These task forces will operate through virtual communication and begin working in March 2008 by outlining their respective action plans. By March 2008 each task force will have identified their respective coordinator, who will form the Management Team of the AI-EP along with the Project Director.

- In the first semester of 2008, the Innovation Foci coordinators and their respective task forces will collaboratively design and formulate research for development projects that will constitute the AI-EP Project Portfolio. In the same period and along with the Program Director, IF coordinators will design and develop cross-cutting projects. It is expected that 6 months will be needed to develop a Project Portfolio composed of four Innovation Focal Area projects, and of two to three cross-cutting projects.

- Once task forces have identified their respective impact pathways, they will invite member institutions to identify and designate Associate Researchers (ARs) for the projects with which they intend to collaborate. ARs should participate in project design, development, implementation and monitoring.

- While the design, development and implementation of collaborative research projects will occur in the domain of the AI-EP, the Program Management Team will liaise with the Amazon Initiative training, networking and communication persons for the proper management of the knowledge and information.

- Projects should show clear links to CGIAR Science Priorities. Project structure should follow CGIAR Science Council guidelines, and include: general objective, rationale, specific goals and targets, methodology, research to development strategy, expected results, performance evaluation and impact assessment, and project timeline. Project structure should be presented in an incremental manner. A 12-month development phase is anticipated for each project.

8. AI-EP GOVERNANCE AND MANAGEMENT STRUCTURE

The AI-EP will be governed by a five-member Program Executive Committee (AI-EP ExCo) that will be a subset of the AI Technical Committee. The Executive Committee will be composed of two (2) representatives of the CGIAR member centers (CIAT, CIFOR, ICRAF and Bioversity); two (2) representatives of the NARIs (Embrapa, Corpoica, INIA-Peru, INIA-Venezuela, INIAP-Ecuador, MDRAyMA-Bolivia), and one (1) representative of AI Associate Institutions. Although the Executive Committee will represent the highest level of Program governance, it will work in liaison with the AI Technical Committee (of which it is a subset) and under guidance provided by the AI Consortium’s Steering Committee.

Membership in the AI-EP is open to all member institutions of the AI Consortium accepted by the Program Executive Committee. Membership of the Program Executive Committee will be based on the designated institutions. Selection of the AI-EP Ex-Co member institutions will take place during AI Steering Committee meetings. The institutional composition of the first AI-EP ExCo will be defined at the AI Steering Committee meeting in September 2007. Committee members and their alternates will be appointed by the directors of each institution, for 3 year terms coinciding with the term of the AI Technical Committee. Each member institution is committed to, and accountable for keeping the institutional memory of their participation in the Program Committee, and will receive support to this end by the AI-EP Coordination Office.
In addition to the five institutional representatives, the AI Steering Committee will consider the possibility of the Program Committee to include an invited chair, who will be a distinguished Amazonian scientist with well-known expertise in areas addressed by the Program. The AI-EP Program Director will participate in the Committee in the capacity of an Ex-Officio member.

Management of the AI-EP will be provided by a Program Director, who will form a Management Team with coordinators of the four Program Innovation Foci, being supported by a secretary. The AI-EP Program Director will be selected through an international search process. The Program Director will liaise with the AI General Coordinator and the AI Coordinator for Institutional Management & Communication (IMCC), with whom s/he will form the Amazon Initiative Secretariat. According to this structure, the AI IMCC will coordinate networking, capacity building and communication activities, while AI General Coordinator will oversee overall governance and institutional partnerships. Governance and management structure of the AI and the AI-EP, and lines of reporting of the two are presented in the diagram.

Figure 7. AI and AI-EP Governance and Management Structure
The **AI-EP** will include a Management Team formed by four “Innovation Focus Coordinators (IFC)” who will be scientists from member institutions of the Program allocating part of their time to this activity (estimated at 25% for the initial two years). IFCs will link the scientific agenda of their respective institutions with priority innovation foci of the Program.

The CGIAR host institution for the **AI-EP** will be CIAT. Operational policies and administrative procedures of the Program are linked to those of the CGIAR host center. Budgetary and financial controls of the **AI-EP** will therefore be carried out through the offices of CIAT. CIAT is entitled to subcontract a third party (a private Foundation based in the city of the physical location of the Program’s Coordination Office) for viable and efficient financial management and administrative support to Program expenses carried out at that location. Management of the **AI-EP** will thus be set in an innovative format, which includes the CGIAR host center (CIAT), the physical host institution (EMBRAPA, the coordinating institution of the **AI** Consortium, physically hosting the Program’s Coordination Office), and a Belém-based foundation, to be contracted to assist with the financial management of Program activities that cannot be directly paid by CIAT.

CIAT will represent the other member institutions as needed, signing contracts and agreements with the CGIAR and other parties on behalf of Program members. Funds transferred from the CGIAR will be channeled through CIAT. Funds for the implementation of **AI-EP** activities by other CGIAR member institutions of the Consortium will be transferred by CIAT to these institutions without overhead charges.

Funding for Program activities shall be derived from contracts, grants, donations, investments and any other sources approved by the **AI-EP** Ex-Co. Raising funds for collaborative research at the regional, sub-regional, and local level is a collective responsibility of **AI-EP** members and partners, who will contribute with the Coordination Office in the preparation of proposals on behalf of the Program. At the project level, decentralized financial management is desirable; and members will maintain the right to propose and manage, individually or in cooperation with third parties, projects or other activities to attract funding for the areas within the scope of the Program. Joint fundraising of **AI** and **AI-EP** will be desirable.

The accounts and financial transactions of the **AI-EP** shall be audited annually by an independent auditor appointed by the Program Committee. A report of such audit, including financial statements of the CGIAR host center related to Program activities shall, within three months after the termination of each fiscal year, be transmitted to the Chairman of the Program Committee, who shall present such report to the next meeting of the **AI-EP** Ex-Co.

The **AI** Cooperation Agreement (Annex 4) is the document establishing and regulating the legal structure and operation mechanisms for governance and management of the broader **AI** Consortium. The **AI-EP** will be regulated by a Charter to be drafted in its initial term of operation, including policies and principles regulating the following lines of accountability:

- Research ethics
- Human subjects in public awareness materials
- Intellectual property rights
- Copyright and fair use of publications
- Data sharing
- Genetic resources
- Invasive alien species
- Conflict resolution mechanisms
The AI-EP will maintain high ethical standards with respect to all of its activities, across all formal and informal structures of the Program. In order to comply with these standards, it will be responsibility of the Program Director to ensure that sufficient information on the above policies and guidelines is provided to the AI-EP Ex-Co, to additional staff and to members of the Management Team. The Management Team shall then prepare a Code of Ethics for the AI-EP, encompassing the above items, to be approved by the Program Ex-Co.

9. HUMAN, MATERIAL AND FINANCIAL RESOURCES

9.1. Facilities, Equipment and Other Resources

EMBRAPA’s support to the operation of the AI Management Team includes providing physical infrastructure for the AI Secretariat. A renovated building at the Belém research center has been operational since December 2005 and functions as the AI headquarters. Current facilities include three research offices and a meeting room, equipped with eight computers (six desk-tops and two notebooks). The suggested physical infrastructure for the forthcoming operation of the Coordination Office of the AI-EP includes expansion of the current AI building with three additional research offices and corresponding computing equipment. Apart from such office infrastructure, the AI-EP will not have equipment such as vehicles or laboratories. The rationale for Program operation consists in the shared use of facilities and equipment of member institutions that, in the case of approved projects, will be the repositories of new equipment and material resources.

9.2. Human Resources: AI-EP Coordination Office, Innovation Foci Team Leaders, and Program Associate Scientists

The AI-EP will fund a full time Program Director, who will be a member of the AI Secretariat. As presented in Section 8, the AI Secretariat will be comprised of the AI general coordinator, the AI IMC coordinator (institutional management & communication), and the AI-EP program director. From September 2003 to June 2007, the AI Secretariat was represented by Dr. Adilson Serrão (EMBRAPA), the general coordinator, and by Dr. Roberto Porro (CIAT-ICRAF joint appointment), AI executive secretary. With the approval of the AI-EP, Dr. Porro will act as AI-EP program director during its first year of operation, at the end of which an international search will be conducted. Beginning in September 2007, the position of IMC coordinator for the AI will be occupied by Ms. Sandra Velarde.

The suggested human resource composition for the AI-EP would include researchers from member institutions to perform the role of Principal Investigators and coordinators for each of its four innovation focal areas (IF). The AI-EP will be a mechanism for implementing collaborative research aligned with the agendas of member institutions applied to the Amazonian context. Some projects implemented in the Amazon by member CGIAR Centers, for example, have not involved collaborative partnerships across Consortium partners. The AI-EP will seek to align implementation of such existing projects with AI-EP priorities. In parallel, a portfolio of new collaborative projects will be designed and developed for each priority innovation focal area of the Program, through the leadership of the Management Team composed by IF Coordinators and the Program Director.
The AI-EP will allocate funds to pay for part of the time of IF Coordinators (25% in the initial two years). IF coordinators will link the scientific agenda of their respective institutions to the innovation focal areas of the Program. Activities of the AI-EP will be directly expressed within each Center’s Medium Term Plan (MTP) or equivalent planning instrument for other, non-CGIAR institutions. Additional resources will be raised through special projects, for an expanded time allocation of IF coordinators in the Program’s subsequent years. Consultation in the second semester of 2007 among AI-EP partner institutions will identify the four IF leading scientists.

The table below presents AI-EP associate researchers from AI member institutions.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Country</th>
<th>Discipline</th>
<th>Education</th>
<th>Focus</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Douglas White</td>
<td>CIAT</td>
<td>Colombia</td>
<td>Agr. Economics</td>
<td>PhD, 1999</td>
<td>1,2</td>
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<td>2. Glenn Hyman</td>
<td>CIAT</td>
<td>Colombia</td>
<td>Geography</td>
<td>PhD, 1997</td>
<td>1,2 TC</td>
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<tr>
<td>3. Alonso Gonzalez</td>
<td>CIAT</td>
<td>Colombia</td>
<td>Plant Physiology</td>
<td>PhD, 1996</td>
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<td>4. Sam Fujisaka</td>
<td>CIAT</td>
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<td>Anthropology</td>
<td>PhD, 1980</td>
<td>1,2,4 TC</td>
<td>R</td>
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<tr>
<td>5. Jan Börner</td>
<td>CIAT</td>
<td>Brazil</td>
<td>Agr. Economics</td>
<td>PhD, 2004</td>
<td>1,2,4 R</td>
<td>R</td>
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<tr>
<td>6. Roberto Porro</td>
<td>CIAT/ICAR</td>
<td>Brazil</td>
<td>Anthropology</td>
<td>PhD, 2002</td>
<td>3,4 MT</td>
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<tr>
<td>7. Andrew Jarvis</td>
<td>CIAT/BIOVERSITY</td>
<td>Colombia</td>
<td>Geography</td>
<td>PhD, 2005</td>
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<td>R</td>
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<tr>
<td>8. Marleni Ramirez</td>
<td>BIOVERSITY</td>
<td>Colombia</td>
<td>Anthropology</td>
<td>PhD, 1989</td>
<td>3 SC</td>
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<tr>
<td>9. Michael Herrmann</td>
<td>BIOVERSITY</td>
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<td>Agronomy</td>
<td>PhD, 1988</td>
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<td>10. Xavier Scheldeman</td>
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<td>Agronomy</td>
<td>PhD, 2002</td>
<td>2,3 TC</td>
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<tr>
<td>11. Maarten van Zonneveld</td>
<td>BIOVERSITY</td>
<td>Colombia</td>
<td>Forestry</td>
<td>MSc, 2005</td>
<td>2,3 R</td>
<td>R</td>
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<td>12. Christiane Ehringaus</td>
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<td>Brazil</td>
<td>Forestry</td>
<td>PhD, 2005</td>
<td>3,4 R</td>
<td>R</td>
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<td>13. Pablo Pacheco</td>
<td>CIFOR</td>
<td>Bolivia</td>
<td>Geography</td>
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<td>14. Peter Cronkleton</td>
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<td>15. Sven Wunder</td>
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<td>Economics</td>
<td>PhD, 1991</td>
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<td>16. Manuel Guariguata</td>
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<td>17. Julio Ugarte</td>
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<td>Forestry</td>
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<td>18. Abel Meza</td>
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<td>Agronomy</td>
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<td>19. Sandra Velarde</td>
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<td>20. Brent Swallow</td>
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<td>21. Louis Verchot</td>
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<td>PhD, 1</td>
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<td>22. Raúl Guirrê</td>
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<td>23. Blas Garcia</td>
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<td>MSc, 1997</td>
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<td>24. Rosnelly Mariaca</td>
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<td>BS, 2000</td>
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<td>25. Rommy Peña</td>
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<td>MSc, 1999</td>
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<td>26. Nelson Joaquin</td>
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<td>27. Oscar Llanque</td>
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<td>28. Daniel Rojas</td>
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<td>29. Armelinda Zonta</td>
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<td>33. Salvador Rojas</td>
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<td>34. Bertha Leonor Ramirez</td>
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<td>37. Jorge Grijalva Olmedo</td>
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<td>38.nelly Judith Paredes</td>
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<td>39. Raul Barahona</td>
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<td>41. Dennis del Castillo</td>
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<td>42. Angel Salazar</td>
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<td>43. Rodrigo Acce</td>
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<td>44. Pedro Ruiz</td>
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<td>Soil Science</td>
<td>PhD, 1994</td>
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<td>45. Juan Carlos Rojas Llanque</td>
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<td>Agronomy</td>
<td>BA, 2003</td>
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<td>46. Luis Quintanilla</td>
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<td>47. Mauricio Scheelje</td>
<td>INIA – Lima</td>
<td>Peru</td>
<td>Forestry</td>
<td>BA, 2002</td>
<td>3 R</td>
<td>R</td>
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</tbody>
</table>
Areas: (1) Climate Change Mitigation and Adaptation; (2) Sustainable Production on Deforested/Degraded Land; (3) Enhanced Benefits from Forests; (4) Value Added Strategies.

Role: (TC) AI Technical Committee; (FT) AI Thematic Facilitator; (SC) AI Steering Committee; (MT) AI Management Team; (R) Researcher.

9.3 Financial Resources

Funds channeled to the AI-EP will be managed separately from funds used for the AI’s wider networking, capacity building, communications and governance activities. The latter are responsibility of the AI Coordinating Institution (presently EMBRAPA), who can subcontract or designate third parties to perform financial management activities. The 2007-2009 AI Cooperation Agreement states that funds for the AI-EP will be managed by CIAT, on behalf of the other CGIAR member centers and other partners.

As the Coordination Office of the AI-EP will be based in Belém, Brazil, the lack of legal status in Brazil for CIAT and/or the AI-EP poses challenges for Program financial management. The major need is to establish a bank account in the city where the Program Coordination Office is based. This account would reduce transaction costs and improve financial management efficiency. While financial management of project activities can occur through direct disbursements to service providers from CIAT’s financial unit, certain payments require local disbursements. A Belém-based foundation will be contracted to allow proper financial management of resources that cannot be transferred directly from CIAT to service providers. The Belém-based foundation will be identified among institutions currently fulfilling project management for EMBRAPA.

Budget needs and sources of funding in the revised document are thus presented separately for the AI-EP. Current donor funding has supported preliminary work for collaborative research to be implemented beginning in 2007. Budget categories for the AI-EP 2008-2009 submission are presented in the table next page:
<table>
<thead>
<tr>
<th>Budget item</th>
<th>units</th>
<th>US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program coordinator (100%)</td>
<td>1 x 2 years @ $120,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Innovation foci coordinators (25%)</td>
<td>4 x 2 years @ $ 30,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Secretary (100%)</td>
<td>1 x 2 years @ $ 24,000</td>
<td>48,000</td>
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<tr>
<td>Program Committee Meetings</td>
<td>2 @ $ 10,000</td>
<td>20,000</td>
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<tr>
<td>Management team meetings</td>
<td>4 @ $ 4,000</td>
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<tr>
<td>Office operations</td>
<td>24 months @ $500</td>
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</tr>
<tr>
<td>Travel / program coordinator</td>
<td>1 x 2 years @ $ 12,000</td>
<td>24,000</td>
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<tr>
<td>Travel research thrusts coordinators</td>
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<td>Equipment, capital items</td>
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<tr>
<td>Publications and communications</td>
<td>2 years @ $ 9,000</td>
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<tr>
<td>Pilot research projects</td>
<td>4 IF x 2 years @ $35,000</td>
<td>280,000</td>
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<tr>
<td>Program total (2008-09)</td>
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<td>975,000</td>
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<tr>
<td>Indirect costs (20%)</td>
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<td>195,000</td>
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<tr>
<td>Total</td>
<td></td>
<td>1,170,000</td>
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</table>

Approved 2008-09 sources of funding for AI-EP activities add to $570,000 (49%) of budgetary needs, and include:

- INIA-Spain $ 230,000 (share of total contribution to the AI = 730K)
- World Bank - IDF $ 160,000 (share of the WB-IDF project to AI = 487K)
- CIM-Germany $ 60,000 (share of salaries for scientist)
- Embrapa-CGIAR contribution $ 80,000 (share of total contribution = 80K/year)
- STC-Peru $ 40,000 (estimated as 20K/year).

The current request to the CGIAR of US$ 300,000/year for the 2008-2009 intends to address this gap, and allow fundraising for an expanded program in the subsequent four years, after which Program termination is expected.
ANNEX 1. AI CONSORTIUM: PRIOR WORK AND ACHIEVEMENTS TO DATE

The initial concept of an Amazon Initiative was born in 2001 as an idea for a Global Challenge Program (GCP), proposed by CIAT and Embrapa, with the participation of ICRAF, CIFOR and IPGRI and, subsequently joined by the NARIs from Amazonian countries which are now AI founding members. Although the AI did not succeed as a GCP proposal, the CGIAR and the World Bank viewed the AI concept favorably and stimulated its continuity. The AI idea matured during 2002 and 2003. In June 2003, Embrapa, CIAT, ICRAF and CIFOR established the AI pro-tempore management team, based at the Embrapa research center in Belém, Brazil (Embrapa Amazonia Oriental), and since then several activities were implemented, aimed at the technical-institutional development of the AI. CIAT and ICRAF jointly contracted in 2003 agronomist/anthropologist Roberto Porro, as a senior social scientist to be AI’s Executive Secretary, giving priority consideration to articulating the Consortium process. At the end of November 2003, with the support of CORPOICA, the first meeting of the (still interim) Steering Committee of the AI was held in Bogotá, Colombia, as previously agreed upon during AGM-03 in Nairobi, Kenya, when the Consortium was presented. In that meeting, the representatives agreed that Embrapa would be the AI coordinating institution during its initial phase of organization and structuring. At the end of 2003, Embrapa nominated Embrapa Amazônia Oriental senior researcher Adilson Serrão as AI Coordinator, representing that entity in the coordinating unit (management team). The 11 founding members decided to make the Consortium official in November 2004 in Mexico City, by signing the AI Cooperation Agreement at AGM-04. The main technical and institutional activities carried out by the AI since its inception and up to May 2007 are presented, as follows.

AI Governance: Support to Steering Committee (SC) and Technical Committee (TC)
During the said period, six meetings of the AI-TC were held: Manaus, Brazil (February 2004), Iquitos, Peru (May 2004), Santa Cruz, Bolivia (May 2005), Belém, Brazil (November 2005), Lima, Peru (March 2006), and Puerto Ayacucho, Venezuela (November 2006). The AI-SC met five times in 2004-2006: Iquitos, Peru (June 2004), Mexico City (October 2004), Santa Cruz, Bolivia (May 2005), Marrakech, Morocco (December 2005), and Madrid, Spain (June 2006), with the next meeting scheduled for September 2007 in Belém, Brazil. The AI Consortium was formalized during AGM-04 in Mexico City, when the AI Cooperation Agreement was signed by representatives of the six National Agricultural Research Institutions, four CGIAR Centers, and IICA. In 2005, the AI-SC approved the terms of reference for the admission of associate institutions, and extended Embrapa’s coordination of the AI until October 2007. In 2005, the AI-SC also approved the preparation, by the AI Management Team, of the Amazon Initiative Ecoregional Program to be presented to the CGIAR. During AGM-05, Consortium advances were presented to the scientific and donor communities. It was an opportunity to evaluate the first year of the Consortium, and to identify critical issues. The 2006 SC meeting has approved the structure and content of the Ecoregional program, in addition to conducting an overall revision of the Consortium’s governance mechanisms.

Structure and Process of the Amazon Initiative Consortium
The Cooperation Agreement signed in Mexico City established a seed-money contribution of US$10,000 by each AI founding institution for activities targeting the institutional process of the AI for its initial 3-year term. Seed-money contribution has been managed by the Coordinating Institution, through an agreement with IICA-Procitrópicos. External support for the AI process began to be sought during AGM-04 upon an initial contact with the government of Spain, through its Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA). A proposal for institutional development of the AI was prepared by the AI management team and submitted in November 2004. INIA-Spain support to the AI (since December 2004), was recently renewed for the 2007-2009 period. The total amount of US$600,000 for the initial two years (2005-2006) and most of the $945,000 approved for the subsequent three years is mostly used for the governance, communication, training, and capacity building activities described next.
AI Management: Building of a Management Team (AI-MT)

Embrapa, CIAT and ICRAF have been allocating core institutional funds for AI management since 2003, respectively through the time of AI’s Coordinator (Adilson Serrão, Embrapa) and Executive Secretary (Roberto Porro, CIAT – ICRAF). Beginning in 2005, funds from INIA-Spain have been used for a share of the time of the Executive Secretary. Seed-money contributions and support from INIA-Spain have been allocated by the AI Secretariat to gradually expand the management team with the incorporation of professional staff. As of May 2007 the AI-MT is formed by four support sections. Support staff in charge of these sections, and their respective date of initiation in the AI-MT are indicated as follows:

- Communication (Eugenia Isnardi, BA.; April 2005)
- Capacity Building (Michael Arnegger, PhD.; August 2005)
- Secretary (Flávia Cunha, BA.; April 2006)
- Information Technology (Fabrício Boaventura, BA.; October 2006)

Communication and Knowledge Sharing Activities

Under the leadership of Mrs. María Eugenia Isnardi, a series of AI communication products have been developed, including: (a) Consortium’s web-site www.iamazonica.org.br, available in Portuguese (April 2006) and Spanish (April 2007); (b) “Idea y Vuelta”, a monthly electronic newsletter written in Spanish (May 2006) that in March 2007 was revamped, and became a biweekly newsletter that is sent to more than 450 professionals; (c) “NoticIA”, AI’s quarterly printed newsletter (May 2007); (d) AI’s in house communication platform, initially through an open source software made available by Embrapa (CATIR, June 2006) and subsequently through inserting the open source software within AI’s own Intranet called “IAnet” (June 2007); (e) AI’s institutional posters to disseminate Consortium’s activities during events (Spanish, Portuguese and English). AI’s Communication sector has also developed institutional communication documents for the Consortium, including the composition of AI’s institutional folder (Spanish and English) that contains information fact-sheets, and AI’s leaflet (Spanish, Portuguese and English). Other publications developed included electronic newsletters for one of the Consortium thematic networks (Agroforestry Germplasm, two issues); the proceedings of two international workshops (Agroforestry Alternatives to Prevent Resource Degradation in the Amazon, 2005: http://www.iamazonica.org.br/conteudo/publicacoes/apresentWorkshop/livrosafs.pdf; Workshop of Amazon Initiative Thematic Networks’ Facilitators, 2006) http://www.iamazonica.org.br/conteudo/publicacoes/apresentWorkshop/workshopFacilitadores.pdf; and the production of two farmer-focused booklets (cartilhas) on environmental services: water quality (November 2005) and soil quality (November 2006).

Capacity Building: Internships of Amazon Students at Research Institutions

In late 2005 the AI initiated a collaborative activity with the Association of Amazonian Universities (UNAMAZ). The activity, named “Programa Amazônico de Intercambio Universitário” (Amazon University Exchange Program) strengthens ties between academic and research institutions through internships offered to undergraduate and graduate students enrolled in Amazonian universities. Seeking inter-disciplinarity and participatory approaches, the activity supports short term (2-4 months) student internships in research projects carried out in an institution located in a different Amazonian country. Three calls for internships were launched since September 2005, and 33 students received fellowships averaging US$2,500 for their internships. Since 2006 an on-line system for internship offers and student applications is available.

Local Consultations: Priority Setting and Enhanced Networking

Nine sub-regional workshops (sub-regions are considered the Amazon regions of participant countries) took place between June and November 2005, with attendance of 400 researchers and practitioners from more than 220 institutions. The events served to the purpose of disseminating the AI mission and vision to local stakeholders. Sub-regional priorities within AI’s thematic agenda, and major gaps and opportunities for AI action were identified according to an assessment of technologies, services and
products supplied in each sub-region. Workshops served for the initial formation of thematic networks according to selected priorities, and for the nomination of thematic facilitators. Workshops also served to nominate institutions to be associated to the Consortium in each country.

- **AI Network for Conservation & Sustainable Resource Use: Formation & Initial Operation**
  Eleven thematic networks were constituted through sub-regional workshops and follow-up coordination by Consortium technical representatives. Networks included 400 participants by February 2006. A workshop with network facilitators was held in Lima, Peru, in March 2006, when facilitators met with AI technical committee members to discuss facilitation and collaborative technologies, to define thematic visions and action plans and to discuss network governance. The workshop program used a range of facilitation and knowledge sharing tools to maximize participant contribution. Resource persons from the CGIAR (CIAT, CIP and ICRAF), from Embrapa and from the World Bank shared their experiences with collaborative information technologies. A publication about the process was produced in June 2006.

- **International Training: AI Courses and Workshops**
  Three workshops convened by Amazon Initiative in its initial year of operation provided state-of-the-art synthesis on themes of AI interest:
  - “Modeling Instruments for Agroforestry Systems” (November 2004), Manaus, Brazil.
  - “Sustainable Management of Pastures in the Amazon” (November 2004), Belém, Brazil. Collaboration with Embrapa and Proctrópicos.
  - “Promising Initiatives and Limiting Factors for Agroforestry as an Alternative to Agro-environmental Degradation in the Amazon” (January 2005), Belém, Brazil. Collaboration with ICRAF training unit.

  Subsequently, the AI has supported Embrapa Eastern Amazon in the design, development and submission to JICA of a project to fund a 5-year program on Agroforestry Technology, including five international training courses for extension agents and practitioners from Amazonian countries. The project was approved in February 2006 with a budget of US$500,000, and JICA’s contribution of approximately US$330,000. The first 3-week course took place in February 2007, with 35 participants from seven countries, selected through the AI network. Course instructors included scientists from CGIAR centers, Embrapa, an invited institutions. Additional financial support for the first course was provided by ICRAF’s training unit, and the Brazilian Cooperation Agency (ABC).

- **Proposal Preparation Workshop**
  In February 2004, Embrapa and the AI (with funds from Embrapa’s contribution to CGIAR/ICRAF), co-promoted a workshop with participation of 40 Embrapa researchers and AI technical representatives. The objective was the preparation of projects in five priority themes of interest to the AI and Embrapa: pasture management, alternatives to slash & burn, forestry management, manioc and tropical fruits. This activity resulted in the 2005 approval of three projects in the total amount of US$600,000 by the Amazon’s Regional Development Bank (Banco da Amazonia).

This range of activities indicates that social and human capital is being built through a coordinated effort of diverse stakeholders and institutions along the broader AI process. These activities set the stage for a collaborative research strategy within the Consortium, and identified feasible mechanisms for scaling-out (i.e. replication) and scaling-up (i.e. institutionalization) of innovations. Indeed, prior to the formalization of the AI-EP, the broader AI process has included activities that strengthen the research component of the consortium through their respective products as presented below.

- **Consultancies on AI Research Priorities**
  Since 2005 Embrapa has earmarked a share of the Brazilian contribution to the CGIAR member centers of the AI for activities to be carried out under the framework of the Consortium. Two disbursements of US$20,000 were approved for each of the four centers. Funds are to be used for activities submitted to the AI Technical Committee according to Embrapa guidelines. The list of activities includes:

- ICRAF: “Innovative Approaches and Proposed Solutions to Measuring Soil Quality at Landscape Scales in the Brazilian Amazon.” Collaboration of ICRAF, Embrapa, and University of Georgia (UG) scientists in the scaling out of ICRAF’s technology to assess soil quality across successional chronosequences using NIR and MIR Spectrometry. (April 2006 – March 2007). Dr. John Paul Schmidt, research associate from UG, prepared a full proposal to be submitted for funding, with collaboration from Dr. Louis Verchot (ICRAF), Claudio Carvalho and Steel Vasconcelos (Embrapa).


- CIFOR: Agrarian Policies and their Impact on Natural Resource Use in the Amazon: a Comparative Study. Consultancy by Dr. Fabiano Toni, professor at Universidade Nacional de Brasilia (UNB). The activity will strengthen the AI Public Policy Network. Methodological and analytical workshops will be carried out with a team of researchers from member countries. Objective is the comparative analysis of case studies, and preparation of a full proposal for subsequent fundraising. Activity partially funded through INIA-Spain grant (May 2007 – April 2008).

- Small grants from USAID-CGIAR Linkage Program

- Environmental Services Research Agenda
  In May 2006 the German CIM, Centrum für Internationale Migration und Entwicklung (a human resources recruitment and placement organization for German development cooperation) has approved a proposal submitted by the AI (through CIAT) for the hiring of an Environmental Services’ Integrated Expert to join the AI management team in Belém. In January 2007, Dr. Jan Börner, a natural resource economist with a Ph.D. from the University of Bonn began working at the AI, through a 2-year contract. He is developing, coordinating and implementing activities related to ecosystem services (ES) and ES compensation, with the primary research focus on pilot studies, syntheses, and tools for designing effective mechanisms that recognize and reward Amazonian smallholders for providing local, national and global ES through appropriate land use strategies.

- Baseline Assessment on Amazon Livelihoods and Environment
  In December 2006 the World Bank’s Institutional Development Fund has approved a $487,000 grant to the AI. The project (submitted through ICRAF) entitled Strengthening the Amazon Initiative Consortium to Address the Need for Sustainable Resource Use Systems in the Amazon will develop mechanisms and tools for sharing knowledge on institutional innovations that promote sustainable resource use and management among Amazon-based research and development institutions. Project activities are expected to start in June-July 2007, and include two main components: (a) capacity building and the sharing
of data and knowledge for collaborative research in the Amazon, including shared inventory and data-base on
sustainable land use systems in the region; (b) Amazon livelihoods baseline approach: based on CIFOR’s
Poverty and Environment Network, the AI will carry out a comparative analysis of how forest resources,
agroforestry, and smallholder agriculture contribute to subsistence and cash income, asset building, security
and welfare in targeted Amazonian locations.

- **Situation Analysis on Environmental Services and Poverty Alleviation**
The British Natural Environment Research Council (NERC), Economic and Social Research Council (ESRC), and Department for International Development (DFID) approved in May 2007 a proposal submitted by the AI (as a consortium leader) for a “Situation Analysis to Identify Challenges to Sustainable Management of Ecosystems to Maximize Poverty Alleviation: Securing Biostability in the Amazon/Andes.” The study will be part of a multi-disciplinary research program addressing major ecosystem services challenges that constrain poverty reduction measure in four global regions. Members of the consortium are King’s College London (KCL), The Nature Conservancy (TNC), Worldwide Fund for Nature (WWF), National University of Colombia and the International Center for Tropical Agriculture (CIAT). The project has a budget of US$500,000, and a 7 month-timeframe for implementation, beginning in June-July 2007.

- **Pilot Collaborative Research Projects**
With funds provided by INIA-Spain, the AI has promoted in late 2006 an internal call for the development of pilot collaborative projects in the framework of its thematic networks. Three awarded projects are being implemented in 2007, with budgets averaging US$10,000:

- “Silvopastoral Alternatives for Sustainable Pasture and Livestock Management in the Amazon.” Proposal submitted by Jorge Grijalva (INIAP-Ecuador) on behalf of thematic facilitators of Bolivia, Brazil, Colombia, Ecuador and Peru.

- “Agroforestry Germplasm Supply Chain for Priority Species in Five Amazon Countries.” Proposal submitted by Julio Ugarte (ICRAF-Peru) on behalf of thematic facilitators of Bolivia, Brazil, Colombia, Ecuador and Peru.

- “Integrated Management of Forest Resources in the Amazon: Bases for Research Networking.” Proposal submitted by Cesar Sabogal (CIFOR-Brazil) on behalf of thematic facilitators of Bolivia, Brazil, Colombia, Ecuador and Peru.

- **Amazon Initiative as a Platform for Collaborative Research in Peru**
Collaboration among ICRAF, INIA, IIAP, and CODESU resulted in the submission and approval of three research projects by Peruvian sources since 2005. Two of these proposals are implemented with funds provided by Innovación y Competitividad para el Agro Peruano, INCAGRO, a program funded by the World Bank, and the third project is funded by Fondo de las Americas, FONDAM-Peru.


- “Use of Selected Germplasm of Bolaina, Capirona, Guaba and Peach Palm to improve Amazonian Smallholder Income through Agro-ecological enterprises” (FONDAM, 2007-2008). CODESU, ICRAF. US$100,000.
## ANNEX 2. AI-EP INNOVATION FOCI AND RESEARCH DOMAINS OF CGIAR MEMBER CENTERS

<table>
<thead>
<tr>
<th>BIOVERSITY MTP PROJECTS</th>
<th>Links to CGIAR Priorities</th>
<th>Project Goal</th>
<th>Project outputs</th>
<th>Links with AI-EP areas</th>
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</thead>
</table>
| BIOVERSITY 1 Enhancing the contribution of agricultural biodiversity to human wellbeing | 1A 1B 3A | **Purpose**: Knowledge & capacity increased to enhance the strategic roles that biodiversity plays in human wellbeing, including food and nutritional security and income generation. | • Nutritional and health benefits of agricultural biodiversity demonstrated.  
• Agricultural biodiversity-based income options for marginal groups identified, developed, validated and made available. | 1.3 1.7 2.4 4.1 4.4 |
| BIOVERSITY 2 Productivity, resilience and ecosystem services from community management of diversity in production systems | 1B 5C 5D | **Purpose**: Practices developed for the use of genetic diversity for greater productivity, resilience, resistance, & ecosystem services in production systems; & support seed systems, communities & institutions for maintenance and evolution of diversity in production systems. | • Practices that use genetic diversity to maintain and improve productivity, resilience and resistance in production systems.  
• Methods that support seed systems, communities and institutions to use genetic diversity in production systems. | 1.2 2.4 4.3 |
| BIOVERSITY 3 Managing biodiversity to improve livelihoods in commodity crop-based systems | 3A 4D 5C 5D | **Purpose**: National partners and stakeholders in Musa, coconut and cocoa generate and access improved information, methods and knowledge to increase production of and value from commodity crop biodiversity, sustainably and innovatively. | • Biodiversity-based strategies for improving root, plant and soil health in commodity crops developed.  
• Methods to plan more effective systems for cultivar deployment, seed multiplication and sustainable production piloted.  
• Tools and learning resources piloted for adding value to diversity in commodity crops through processing and marketing.  
• Strategies and tools developed for network-based priority setting, partnership formation to develop GPGs and output delivery. | 1.2 1.3 2.2 4.4 |
| BIOVERSITY 4 Conserving and promoting the use of genetic resources of commodity crops | 1A 2A 2B 2D | **Purpose**: Musa, coconut and cacao biodiversity conserved, characterized and sustainably used. | • *Musa* genetic resources effectively conserved and exchanged.  
• Conservation of coconut gene pool is strengthened and rationalized.  
• Diverse cacao genetic resources conserved and evaluated on research stations and in farmers’ fields.  
• Understanding of *Musa* genetic resources in support to breeders enhanced.  
• Documentation of the diversity of *Musa*, coconut and cacao enhanced. | 1.2 1.3 2.2 4.4 |
| BIOVERSITY 5 Enhancing the ex situ conservation and use of genetic diversity | 1A 1B | **Purpose**: To generate knowledge & tools to allow germplasm holders to effectively, efficiently maintain, characterize, facilitate and promote the use of *ex situ* conserved material to meet the needs of poor people. | • Guidelines and technologies for efficient and *ex situ* conservation of genetic diversity of major crops and their wild relatives and other plants of importance to poor people developed and made available.  
• Technologies and methods developed and promoted for facilitating the enhanced use of genetic diversity in *ex situ* collections. | 2.2 4.1 4.2 |
| BIOVERSITY 6 | Purpose: To develop and disseminate priority IPGs (information, practices, policy strategies and capacity), expected to have major impact on improved conservation and sustainable use of wild species diversity, notably forest genetic resources & crop wild relatives. | • Critical knowledge for improved conservation and use of wild species diversity generated, compiled and disseminated.  
• Best practices for conservation and sustainable use of wild species diversity developed and disseminated.  
• Policy options for improved conservation and use of wild species diversity developed and promoted. | 2.2  
2.4  
3.1  
3.2  
4.2  
4.3 |
| --- | --- | --- |
| In situ conservation and use of forest and other wild species | 1A  
1B  
3A  
3D  
5A |  |  |
| BIOVERSITY 7 | Purpose: People & institutions cooperate to develop & strengthen a global information system to facilitate exchange of information on plant genetic resources for food & agriculture. | • Best practices to collect, manage, analyze and share PGRFA information are developed and promoted.  
• The information about PGRFA in the CGIAR is made available through SINGER in support of the global information system.  
• A global information facility on PGRFA is established in support of the ITPGRFA. | 1.4  
1.8  
2.3  
3.3 |
| Biodiversity informatics | 1A  
1B |  |  |
| BIOVERSITY 8 | Purpose: An enabling policy environment fostered for the conservation and use of genetic resources for food and agriculture and to ensure its contribution to improving livelihoods. | • Technical contributions prepared that support the development of international policies and their implementation.  
• Technical and process-based contributions made that support the development of regional and national policies and their implementation.  
• Development of system-wide policies, legal instruments and practices conducive to the proper management and use of genetic resources for food and agriculture and intellectual assets, consistent with the international legal framework. | 1.4  
1.8  
2.3  
3.3 |
| Policy and law | 1A  
1B  
1C  
5A  
5B  
5C |  |  |
| BIOVERSITY 9 (Project F09) | Purpose: The effectiveness of global systems of conserving and using biodiversity of importance to food and agriculture is increased. | • Analyses and strategies are available that inform development and operation of global systems for conservation and use of genetic resources.  
• International agendas are informed and influenced on the importance of the maintenance and use of biodiversity.  
• Operations, mechanisms and frameworks are established or supported that strengthen the conservation and use of genetic resources.  
• System-wide collaboration on the conservation and use of agricultural, forest and aquatic biodiversity is coordinated. | 1.8 |
| Strengthening global systems for conservation and use of genetic resources | 1A  
1B  
1C  
1D  
3D |  |  |
| BIOVERSITY 10 (Project F10) | Purpose: To develop indicators and tools for generating information and knowledge on the status, trends and valuation of genetic diversity that will allow researchers, & decision- and policy-makers to develop plans for effective and efficient maintenance & use of diversity for sustainable food security, environmental protection and enhanced livelihoods. | • Indicators and tools for evaluating the status and trends of plant genetic diversity for selected model species of agrobiodiversity developed and made available.  
• Valuation tools for genetic diversity for researchers, decision and policy makers developed, tested and refined for selected model components of agrobiodiversity. | 3.1 |
| Status, trends and valuation of agrobiodiversity | 1A  
1B |  |  |
<table>
<thead>
<tr>
<th>CIFOR MTP Projects</th>
<th>Links to CGIAR Priorities</th>
<th>Project Goal</th>
<th>Project outputs</th>
<th>Links with AI-EP areas</th>
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</table>
| CIFOR 1 Sustainable Use of Forests | 4A | Sustainable use of natural & plantation forests & appropriate forest mgmt. practices towards competitive and sustain. production of goods & services | • Identification of best practices, regulations, & criteria that will help to encourage use of sustainable forest mgmt. practices that are not currently widely adopted  
• Analysis of the long-term sustainability of the supply of timber, fibre and other forest products from natural forests and plantations | 2.5  
3.1, 3.2  
4.1, 4.2, 4.3 |
| CIFOR 2 Biodiversity in Fragmented Landscapes | 1B 4A 4D | Conservation & sustainable use of forest biological diversity through generation and diffusion of improved knowledge about biodiversity in forested rural landscape mosaics. [Crosscutting Project links with Projects 4, 5 and 7] | • Tools and strategies to integrate biodiversity conservation into improved management practices at the landscape level  
• Support to conservation and sustainable use of biological diversity through the collection and use of better information and participatory tools regarding biodiversity in landscape mosaics for problem diagnosis, priority setting and decision making | 2.1, 2.2  
4.1 |
| CIFOR 3 (ES & SUF-3) Forest Ecosystem Services | 4A 4D | To increase resilience & reduce vulnerability by developing tools and best practices for integrated planning & mgmt. of forest ecosystem services (ES) that enhance synergies between forest ES | • Tools and best practices for balancing water use and carbon sequestration services from forests at the landscape level  
• Identification of pro-poor climate change mitigation and adaptation schemes involving forest ecosystems and articulation of the role of forest ecosystems in adaptation to climate change | 1.1, 1.2, 1.3, 1.7  
2.4 |
| CIFOR 4 Governance of multi-stakeholder forested landscapes | 5A 5C 5D | To strengthen multi-stakeholder processes, policy frameworks, institutions and capacities for socially just sharing of benefits, and sustainable management of forested landscapes. | • Analysis of decentralisation policies and practices in selected countries in Asia, Africa and Latin America  
• Analyses, tools and recommendations for effective stakeholder collaboration, forest-related conflict mitigation, and institution building for collaborative forest management | 2.3  
4.3 |
| CIFOR 5 Forest Finance and Trade, Law Enforcement and Corporate Accountability | 3 A 3 D 5 A 5 B 5 C 5 D | To assist governments, ngos & private sector to develop, adopt economic, financial, & governance policies & practices to encourage sustainable forest management, enhance social justice and livelihood security. | • Analyses of legal timber verification methods, and policy-relevant forest trade scenarios with assessment of implications for forest sustainability, economic development and human well-being, especially among the forest dependent poor  
• Analysis, guidelines, strategies and approaches for improved regulations and business practices of corporate entities involved in forestry-related transactions and operations in tropical developing countries | 1.8, 1.4  
2.3 |
| CIFOR 6 Managing Landscapes for Sustainable Livelihoods | 5B | To improve conservation and development policies and projects by helping policy makers and project managers understand how their actions affect livelihoods and land use. | • Analyses of conservation-development initiatives (including payment for environmental services (PES) schemes) to identify optimized methods and strategies for managing landscapes for sustainable livelihoods  
• Concepts, methods, & analysis, at the landscape scale, of the socio-economic and physical determinants of landscape change and the consequences for livelihoods and poverty alleviation | 1.4, 1.5, 1.8  
2.4 |
| CIFOR 7 Improving Human Well-being through Forests | 1B 4A 4D | To improve human well-being by enhancing local forest-based practices, involving smallholder in industrial forestry, increasing the forestry content of poverty alleviation policies, strategies and programmes. | • Analysis of the conditions and factors that facilitate successful small enterprise development and secure safety nets from forest biodiversity  
• Guidelines, strategies and policy recommendations to improve involvement of poor people in timber and natural product industries  
• Recommendations for poverty alleviation policies, strategies & programmes that consider new insights on roles that forests/forestry play in promoting well-being | 1.6  
4.4 |
<table>
<thead>
<tr>
<th>ICRAF MTP PROJECTS</th>
<th>Links to CGIAR Priorities</th>
<th>Project Goal</th>
<th>Project outputs</th>
<th>Links with AI-EP areas</th>
</tr>
</thead>
</table>
| **ICRAF 1**  
Multi-scale assessment of agroforestry practices and impacts | 3D 5D | To improve agroforestry research and development investments through a better understanding of how different agroforestry systems and species can provide benefits across varying landscapes, communities, and people. | • Tools and methods for ex ante, ex post and trade-off assessment at different scales, emphasizing complex interactions common with agroforestry systems  
• Strategies for creating impact of agroforestry systems, including sets of interventions required and investment needs  
• Major opportunities for agroforestry development and targeting; identification of key constraints for adoption of AF systems; success factors for creating AF impact; actual impacts of AF on welfare and the environment at different spatial and temporal scales  
• Capacity built on: use of best practices for assessment of AF and NRM impacts and best practices to communicate the impacts of AF systems to relevant stakeholders. | 2.1 2.5 |
| **ICRAF 2**  
Tree genetic resources and domestication | 1B 2D 3A 4A 5D | Smallholders, support agencies, researchers access information & knowledge to improve rural livelihood options through tree genetic resources & seed & seedling systems characterized, conserved & developed | • Cutting edge methodologies, strategies & procedures developed to characterize, document, conserve & disseminate AF tree genetic resources & related information.  
• Develop innovative generic tree domestication technologies and practices for improved germplasm, with farmers & other partners, considering emerging global challengesTechnologies improved and strategies developed for sustainable multiplication, dissemination and deployment of agroforestry tree genetic resources | 2.2 4.2 |
| **ICRAF 3**  
Tree-based diversification and intensification of smallholder agriculture | 3D 4C, 4D | Smallholder farmers and their support agencies have access to the knowledge needed to improve rural livelihoods options through appropriate intensification & diversification of farming systems | • Principles, methods and options developed for improved agroforestry management, including their economic and ecological impacts on smallholder farms.  
• Knowledge and options developed for improved water use in agroforestry systems including tradeoffs at the farm level.  
• Knowledge of opportunities developed and promoted for agroforestry to improve agricultural productivity, including changes in tree diversity, and to create greater system resilience and alternatives for income generation within small-holder farming systems. | 1.7 2.1 2.5 4.3 |
| **ICRAF 4**  
Tree product markets: markets as drivers of AF land use | 3A, 3D 5B, 5D | To increase small-scale farmers’ and entrepreneurs’ benefits from selling agroforestry tree products by improving their marketing systems. | • Understanding of constraints and opportunities of agroforestry tree product market chains (Other knowledge)  
• Best practices and institutional innovations for improving smallholder access to markets (practices)  
• Capacity enhancement for improved smallholder tree product market chains | 4.1 4.2 4.4 3.1 |
| **ICRAF 5**  
Multifunctional agroforestry landscapes for ecosystem services | 4A, 4D 3D | To synthesize models of ecolog. - econ. tradeoffs between goods & services from multifunctional landscapes; To build & test rapid appraisal tools for INRM with diversified AF in complex landscapes & multistakeholder negotiations; To support landscape scale research with incentive systems for enhancing multifunctional AF systems. | • Dynamic tradeoff models (based on empirical studies) for ‘goods’ (for subsistence and markets) and ‘services’ (carbon stocks, biodiversity indicators and quantifiable watershed functions) from multifunctional landscapes with trees  
• Rapid appraisal tools for biodiversity, watershed functions and carbon stocks at landscape scale that support multistakeholder dialogue on options for increase or change in the tree presence and (agro)forest cover in the landscape  
• Learning landscapes (and IPG’s derived from them) with long term analysis of change and experiments with modification of incentive systems for enhancing the role of multifunctional agroforestry systems in avoided deforestation for climate change mitigation, watershed protection and biodiversity conservation | 1.3 1.7 2.3 2.4 3.2 |
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<thead>
<tr>
<th>ICRAF 6</th>
<th>Agroforestry for land rehabilitation: assessments and technological options</th>
</tr>
</thead>
<tbody>
<tr>
<td>4A, 4D</td>
<td>To provide governments, land managers &amp; other stakeholders with the knowledge and decision support tools needed to assess and tackle land degradation through AF</td>
</tr>
<tr>
<td></td>
<td>• Land and soil degradation assessment methods and empirical results generated</td>
</tr>
<tr>
<td></td>
<td>• Decision support tools for targeting agroforestry based land rehabilitation developed and applied</td>
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<tr>
<td></td>
<td>1.2 1.7 1.8 2.1 2.5 4.3</td>
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<tr>
<th>ICRAF 7</th>
<th>Agroforestry systems for climate change (CC) adaptation and mitigation</th>
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</thead>
<tbody>
<tr>
<td>3D</td>
<td>To assess the impact of CC on smallholders, AF systems, and rural landscapes, and the social &amp; economic factors that expose or protect households to climate related shocks; To examine how can tree based systems buffer smallholder farmers against current climate variability and extremes, and manage its impact on biodiversity and related ecosystem services</td>
</tr>
<tr>
<td>4A, 4D</td>
<td>• Principles, empirical evidence, and decision support tools for enhancing the contribution of agroforestry for buffering farmers, communities and landscapes against the climatic variability associated with climate change, and for increasing the resilience of agricultural landscapes for biodiversity conservation and regulating / supporting services.</td>
</tr>
<tr>
<td>5B</td>
<td>• Models of potential climate change impact on distribution, adaptation and performance of agroforestry trees and systems in tropical agricultural landscapes</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of technological and management options for enhanced resilience of smallholder farmers, agroforestry trees and systems in the face of climate change</td>
</tr>
<tr>
<td></td>
<td>1.1 1.2 1.3 1.7 1.8 2.3 2.4 3.2</td>
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<tr>
<th>ICRAF 8</th>
<th>Policy options and incentive mechanisms for strengthening agroforestry</th>
</tr>
</thead>
<tbody>
<tr>
<td>4A</td>
<td>To design and implement multi-lateral, national and local policies and programmes that strengthen farmers’ incentives to invest in AF systems enhancing farm income and environmental services of benefit locally, nationally and internationally.</td>
</tr>
<tr>
<td></td>
<td>• Action research, assessments and syntheses of policy options that can strengthen land and tree tenure rights and agroforestry incentives for smallholder farmers.</td>
</tr>
<tr>
<td></td>
<td>• Pilot studies, syntheses, and tools for designing mechanisms that recognize, compensate and reward smallholders for providing local, national and global environmental services through appropriate agroforestry strategies.</td>
</tr>
<tr>
<td></td>
<td>• Syntheses, policy studies, policy options and support to developing country negotiators on how multi-lateral environmental agreements, regional agreements, and national action plans can be modified to enhance the contributions of agroforestry.</td>
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<td>1.4 1.8 2.3 2.4 3.3</td>
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<tr>
<th>ICRAF 9</th>
<th>Knowledge and learning tools for agroforestry innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A</td>
<td>To generate and make accessible scientific insights and research results addressing key concerns of main stakeholders in ‘rural lives and landscapes,’ and link them to actions by a range of actors and institutions that induce ‘transformations’ of the type needed to enhance the provision of goods and services from the landscape in which AF and active use of trees is expected to play a major role</td>
</tr>
<tr>
<td>5D</td>
<td>• Good practice guides, advocacy and learning tools for boundary spanning linkage of knowledge to action in integrated natural resource management</td>
</tr>
<tr>
<td></td>
<td>• Policy, learning tools and partner Institutional Capacity for the advancement of Agroforestry science, innovation and practice</td>
</tr>
<tr>
<td></td>
<td>• Strategies and networks for enhancing and managing Agroforestry knowledge</td>
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<td>1.5 1.6 2.5 3.2 3.3 4.1</td>
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<tr>
<td>CIAT MTP PROJECTS</td>
<td>Links to CGIAR Priorities</td>
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</tbody>
</table>
| CIAT 1 Markets, Institutions and Livelihoods | SP3 SP4 SP5 | To deliver innovations (mostly in the form of approaches, methods, tools and policy options) that contribute to improving the effectiveness of agricultural research and development and the uptake of research results by small scale farmers. | • Institutional arrangements and mechanisms for targeting, increasing and evaluating impacts  
• Diagnostic, targeting and information tools that improve market value chain management for the economic and environmental benefit of smallholder farmers and the poor  
• Approaches, tools and technologies for improving the competitiveness of smallholder producers of high value commodities including tropical fruits  
• Technologies for better product and environmental quality through management of diseases and pests  
• Policy guidelines, tools and innovations for adaptation to risk, high stress and vulnerability. | 2.1; 2.5 |
| CIAT 2 Tropical Soil Biology and Fertility (TSBF) Institute | SP4 | To strengthen capacity to manage tropical ecosystems with a focus on soil, biodiversity and primary production; ensuring environmental sustainability through research on the biology and fertility of trop soils. | • Biophysical and socioeconomic processes understood, principles, concepts and methods developed for protecting and improving the health and fertility of soils;  
• Economically viable and environmentally sound soil, water, and nutrient management practices developed and tested by applying and integrating knowledge of biophysical, socio-cultural and economic processes;  
• Partnerships and tools developed and capacity enhanced of all stakeholders for improving the health and fertility of soils;  
• Improved rural livelihoods through sustainable, profitable, diverse and intensive agricultural production systems;  
• Options for sustainable land management (SLM) for social profitability developed, with special emphasis on reversing land degradation. | 1.1 1.2 1.3 1.7 2.1 2.4 2.5 |
| CIAT 3 Improved Beans for the Developing World | SP2 + 3A 5A, 5B | Increase in availability of food and income for the poor through improved bean productivity | • Beans with improved micronutrient concentration that have a positive impact on human health  
• Beans that are more productive in smallholder systems of poor farmers  
• Beans that respond to market opportunities  
• Strengthened institutions that enhance bean product development and delivery  
• More than 35,000 accessions are conserved, documented and available for distribution | 2.1 2.2 4.2 |
| CIAT 4 Improved Cassava for the Developing World | SP2 + 4D 5B 3B 1A, 1B | Improve rural livelihoods by increasing cassava productivity, protecting environment and enhancing values of cassava derived products. | • Maintenance and distribution of accessions from the germplasm collection  
• Genetic stocks adapted to the most common cassava growing environments and their abiotic stresses, with emphasis in drought.  
• Clones with high-quality traits for food, feed, starch and ethanol industries identified or bred.  
• Management of pests and diseases, likely to cause acute problems in large areas planted with cassava.  
• Organizational approaches, processing technologies and cultural practices for competitive and sustainable cassava production, processing and utilization systems.  
• New breeding tools: genetic transformation, use of molecular markers, rapid multiplication and production of doubled-haploids. | 2.1 2.2 4.2 |
| CIAT 5 | Improved Rice for Latin America and the Caribbean | SP2 + 1A, 1B 3B 4D 5A | To generate food security and employment associated with rice production with emphasis on improving the options for the small farmers. | • Rice germplasm for improving human health and nutrition in Latin America  
Description: Development of high iron & zinc rice lines to combat malnutrition in LAC  
• Broadening the genetic base of irrigated rice in Latin America Description: Utilization of wild rice species and synthetic populations to broaden the genetic base of irrigated rice in LAC  
• Broadening the genetic base of upland rice in Latin America Description: Rice synthetic population breeding and participatory breeding of upland rice for small farmers | 2.1 2.2 4.2 |
| CIAT 6 | Improved Forages for the Developing World | SP2 + 1B 3B, 3C 4B, 4D 5A, 5B | To improve livelihoods of rural communities and contribute to greater access of poor urban consumers to high and safe quality animal products by strengthening forage-based feeding systems while taking advantage of the potential of forages to enhance natural resource management and provide environmental services | • Long term production and environmental benefits of multipurpose grasses and legumes secured through conservation, documentation and distribution, of forage germplasm  
• Improved Brachiaria grasses  
• Forages as and for high value products developed to capture differentiated markets for smallholders  
• Benefits of multipurpose grasses and legumes realized in crop/ livestock systems through adaptation, innovation and integration | 2.1 2.2 4.2 |

|---|---|---|---|
| S1: Sustaining Biodiversity for Current and Future Generations | 1. Climate Change Mitigation and Adaptation | 1.1 Analysis of carbon footprint of land use systems  
1.2 Development of resilient land use systems that increase C stocks  
1.3 Pavement schemes for environmental services, including C markets  
1.4 International policy instruments  
1.5 Coping with risk  
1.6 Community based fire management  
1.7 Development of sustainable land use systems adapted to CC  
1.8 Local & national adaptation policies and programs  
2 Sustainable Production on Degraded/Deforested Areas  
3. Enhanced Benefits from Forests to Livelihoods and Environment |  
2.1 Technology targeting  
2.2 Germplasm or seed supply systems  
2.3 Policy research  
2.4 Payment for environmental services  
2.5 Support systems | |
| 1A: Promoting conservation and characterization of staple crops  
1B: Promoting cons., & charact. of underutilized plant genetic resources  
1C: Promoting conservation of indigenous livestock  
1D: Promoting conservation of aquatic animal genetic resources | | |  
2A: Maintaining and enhancing yields and yield potential of food staples  
2B: Improving tolerance to selected abiotic stresses  
2C: Enhancing nutritional quality and safety  
2D: Genetically enhancing selected high-value species | | 3A: Increasing income from fruit and vegetables  
3B: Increasing income from livestock  
3C: Enhancing income through increased productivity: fisheries & aquaculture  
3D: Promoting sustainable income generation from forests and trees |  
4A: Promoting integrated land, water and forest management at landscape level  
4B: Sustaining and managing aquatic ecosystems for food and livelihoods  
4C: Improving water productivity |  
4D: Sustainable agro-ecological intensification in low- and high-potential areas | | |  
SP4: Poverty Alleviation & Sustainable Management of Water, Land, & Forest Resources | | |  
5A: Improving science and technology policies and institutions  
5B: Making international and domestic markets work for the poor  
5C: Improving rural institutions and their governance  
5D: Improving research & development options to reduce rural poverty and vulnerability | | |  
5E: Promoting sustainable income generation from forests and trees  
6: Innovation in multi-stakeholder development processes | | |  
SP5: Policies and Institutional Innovation to Support Reduced Poverty & Hunger | | |  
5A: Improving science and technology policies and institutions  
5B: Making international and domestic markets work for the poor  
5C: Improving rural institutions and their governance  
5D: Improving research & development options to reduce rural poverty and vulnerability |  
6: Innovation in multi-stakeholder development processes | | |  
SP6: Knowledge Commons for Achieving Sustainability | 4. Value-Added Strategies for Amazonian Products | 4.1 Product identification, ex ante impact analysis, & targeting  
4.2 Product development & seed and germplasm management  
4.3 Production in SLUS  
4.4 Market value chain development | | |
<table>
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<tr>
<th>Site #</th>
<th>Site name = State or Province</th>
<th>Country</th>
<th>Area (Km²)</th>
<th>Population (2006 est.)</th>
<th>Dem. density (inh./Km²)</th>
<th>% Rural Population</th>
<th>Main Urban Center</th>
<th>Population main city</th>
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<td>Suriname</td>
<td>214,970</td>
<td>784,000</td>
<td>3.65</td>
<td>40%</td>
<td>Georgetown</td>
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<td>Suriname</td>
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<td>784,000</td>
<td>3.65</td>
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<td>Georgetown</td>
<td>285,000</td>
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<td></td>
<td>Cattle herd (2005)</td>
<td>Milk (1,000 l (2005))</td>
<td>Rice (ha) (tons)</td>
<td>Beans (ha) (tons)</td>
<td>Maize (ha) (tons)</td>
<td>Manioc (ha) (tons)</td>
<td>Soy (ha) (tons)</td>
<td>Sug. cane (ha) (tons)</td>
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<td>(2004)</td>
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<td>180.000</td>
<td>180.000</td>
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<tr>
<td>20</td>
<td>110.000</td>
<td>(2004)</td>
<td>31</td>
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ANNEX 4. DRAFT 2007-2010 AMAZON INITIATIVE COOPERATION AGREEMENT
(to be ratified and signed in the September 4-6, 2007 AI Steering Committee Meeting)

COOPERATION AGREEMENT

Among the national research institutes CORPOICA, EMBRAPA, INIAP, INIA-Peru, INIA-Venezuela, the Bolivian Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente; and the International Research Centers Bioversity International, CIAT, CIFOR, and World Agroforestry

The Corporación Colombiana de Investigación Agropecuaria, a national organization established in accordance to the laws of Colombia, headquartered in Bogotá, Colombia, hereinafter called CORPOICA, represented in this act by its Executive Director Arturo Vega; the Empresa Brasileira de Pesquisa Agropecuária, hereinafter called EMBRAPA a state-run enterprise within the scope of the Ministry of Agriculture, Livestock and Food Supply (MAPA) of the Federal Government of Brazil, headquartered in Brasília, DF, Brazil, represented in this act by its Director President Silvio Crestana; the Instituto Nacional Autonomo de Investigaciones Agropecuarias, hereinafter called INIAP, national organization constituted under the laws of Ecuador, headquartered in Quito, Ecuador, represented in this act by its General Director, Julio Cesar Delgado; the Instituto Nacional de Investigación y Extensión Agraria, hereinafter called INIA-Peru, national organization constituted under the laws of Peru, headquartered in Lima, Peru, represented in this act by its Executive Director Daniel Reynoso Tantalian; the Instituto Nacional de Investigaciones Agrícolas - INIA, national organization constituted under the laws of the Bolivarian Republic of Venezuela, headquartered in Caracas, Venezuela, represented in this act by its President, Prudencio Chacón; the Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente - MDRAMA, headquartered in La Paz, Bolivia, represented in this act by its Minister Hugo Salvatierra Gutiérrez; the Bioversity International, non-governmental international research center, headquartered in Rome, Italy, represented in this act by its General Director Emile A. G. Frison, the Centro Internacional de Agricultura Tropical - CIAT, non-governmental international research center, headquartered in Cali, Colombia, represented in this act by its General Director, Joachim Voss; the Center for International Forestry Research - CIFOR, non-governmental international research center, headquartered in Bogor, Indonesia, represented in this act by its General Director, Frances Seymour; and the World Agroforestry Centre - ICRAF, non-governmental international research center, headquartered in Nairobi, Kenya, represented in this act by its General Director Dennis Garrity; jointly called “the parties”, agree on the following CONSIDERATIONS:

1. The Amazon Initiative - AI is formed to establish links of cooperation and collaboration in science and technology, in order to contribute to the sustainable development of the Amazon region, the improvement in living conditions of populations that inhabit it, and to the resolution of global environmental problems and natural resource management problems.

2. During the initial phase of execution of joint activities, the participant entities recognized both the convenience and need to broaden the scope of action of the AI by an expanded membership of associate institutions, and the participation of new stakeholders, enabling greater impact through broader institutional presence and geographical coverage in a larger number of participating countries;

3. In order to achieve the objectives of the AI it becomes necessary to develop mechanisms for inclusion of new members and of other appropriate administrative instruments to manage routine activities within a democratic, participative spirit and institutional commitment.

4. It is therefore necessary to define mechanisms and responsibilities in the administrative and legal management of the Consortium.

5. Considering the importance of the Amazon Cooperation Treaty Organization -OTCA, in its capacity as a multilateral organization that builds venues of cooperation and communication
among the different governmental, institutional and social stakeholders therefore contributing to the sustainable development of the Amazon Region, the parties express their willingness to seek harmonization of the activities executed under the auspices of the Consortium, with OTCA’s Strategic Plan, the political framework guiding the activities of its Permanent Secretariat. This will enable the Consortium to broaden its results to all OTCA Member Countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.

6. The AI also seeks harmonization of the activities carried out by member institutions in areas of common interest, with the activities of programs and networks for research and higher education already active in the region, and that operate under the guidelines and strategies of OTCA, such as the Cooperative Program for Research and Technology Transfer to the South American Tropics – Procitropicos, and the Association of Amazonian Universities – UNAMAZ.

With these considerations the representatives of institutions that form the Amazon Initiative do hereby agree to modify the provisions of the AI Cooperation Agreement signed in October 2004, as follows:

**Clause One – Objective and Purpose**

a. Establish links of collaboration and cooperation in science and technology among the parties, with the objective of contributing towards sustainable development of the region, improvement in living conditions of Amazonian populations and resolution of global environmental problems and natural resource management problems. The AI strategy includes implementing inter-institutional and interdisciplinary research activities, technology transfer, dissemination of information and capacity building, providing the technical foundation for sustainable development, and promoting sustainable land use systems that prevent, reduce or reverse natural resource degradation.

b. The AI is a non-profit institutional association and consortium formed for the purpose of:

   i. Establishing an international, inter-institutional and interdisciplinary group of scientists, practitioners and researchers, who will implement a collaborative, agreed upon and jointly identified agenda.

   ii. Preparing research and development proposals of interest to the Amazon region and to present them to national and international donors, in addition to other interested agencies.

   iii. Providing further information to donors and other organizations in matters related to themes addressed through the collaborative work.

   iv. Preparing negotiated contractual agreements, with the consent of its members, for execution with donors and other funding agencies.

   v. Fostering mechanisms to strengthen the institutional framework for participation of resource users and other stakeholders, in research programs on land management, natural resource management, and social and environmental policy.

c. The AI is the result of the present Agreement, through which capacities are expected to be built in order to achieve its objectives. The AI is not an autonomous organization independent from the entities of which it is formed. Consequently, AI activities do not result in liabilities to the members of the Consortium or toward third parties, except when the parties expressly accept responsibility for specific programs or projects conducted through the AI.

**Clause Two – Areas of Cooperation**

Cooperation shall include, but not be limited to the following areas:

i. Assessment, identification and analysis of the magnitude of the degradation processes of natural resources, as well as analysis and explanation of the causes, impacts, biophysical processes and social-cultural dynamics associated to these processes;

ii. Sustainable land use systems, including management practices to prevent, reduce and reverse degradation of natural resources, while creating opportunities for expansion of livelihood enhancing options of vulnerable rural populations.
iii. Analysis and design of socially just and ecologically sustainable policies and instruments to support development, thus contributing to improvement of living conditions of Amazon populations and conservation of natural resources.

iv. Design and develop value-added strategies to sustainable production.

v. Understanding of the cultural and social-economic dimensions of resource degradation caused by current farming, ranching and forestry practices in the Amazon, and thus establishing a participative process to identify alternatives to reduce poverty, improve social well-being and increase social equity in the Amazon.

vi. Strengthen capacity of institutions and local groups for generating knowledge, and transferring and adopting technology for the Amazon.

Clause Three – Consortium Membership

a. Membership in the AI is based on institutions and not on individuals. The Consortium includes advocate members and associate members.

b. The following institutions are considered advocate members:

i. The institutions that signed the Amazon Initiative Cooperation Agreement, which shall have the status of founding members.

ii. The NARIs or equivalent institutions from Suriname and Guyana, countries that are members of the Amazon Cooperation Treaty Organization (OTCA), which shall sign this agreement upon their formal expression of interest in joining the Consortium, having the same rights and obligations of a founding member.

c. For the signing of this Addendum, ten institutions are considered as advocate members of the Amazon Initiative Consortium:

- Corporación Colombiana de Investigación Agropecuaria - CORPOICA (Colombia)
- Empresa Brasileira de Pesquisa Agropecuária – EMBRAPA (Brazil)
- Instituto Nacional Autónomo de Investigaciones Agropecuarias - INIAP (Ecuador)
- Instituto Nacional de Investigación y Extensión Agraria – INIA (Peru)
- Instituto Nacional de Investigaciones Agrícolas – INIA (Venezuela)
- Ministério de Desarrollo Rural, Agropecuario y Medio Ambiente – MDRAMA (Bolivia)
- Bioversity International
- Centro Internacional de Agricultura Tropical – CIAT
- Center for International Forestry Research – CIFOR
- World Agroforestry Centre – ICRAF

d. The following criteria are used to govern admission and membership of associate institutions in the AI:

i. The objectives of the institution and its operational principles shall be in accordance to those of the AI Consortium: poverty alleviation, rural livelihood enhancement, and natural resource conservation.

ii. The institution must conduct or actively support one or more of the following activities: research, extension, education or agricultural (including sustainable ranching), forestry or agroforestry development.

iii. The institution must be based within or conduct its activities in the Amazon Region.
iv. The institution must demonstrate stability and sound operations, as well as demonstrate knowledge and experience in field(s) in which it operates.

v. The institution must be nominated by a member of the AI Steering Committee.

vi. The institution must demonstrate interest and ability to contribute towards sustainability of the AI, not only through its human and material resources, but also with financial resources.

e. The admission of new members to the Consortium shall take place during Steering Committee Meetings, which shall endorse national level consultations and subsequent nominations by a national founding member of the AI. The Steering Committee shall also examine requests from institutions operating at the regional level.

f. The institutions mentioned below, nominated by AI advocate members, had their membership as associate members of the Amazon Initiative Consortium approved by the AI Steering Committee in the May 2005 and June 2006 meetings. Responsibilities of these institutions will be detailed in the Membership Agreement prepared for this purpose.

- Centro de Investigación Agrícola Tropical – CIAT (Bolivia)
- Fundación para el Desarrollo Tecnológico y Agropecuario del Trópico Húmedo – FDTA-TH (Bolivia)
- Universidad Amazónica de Pando – UAP (Bolivia)
- Instituto Nacional de Pesquisas da Amazônia – INPA (Brazil)
- Instituto para el Ecodesarrollo Regional Amazónico – ECORAE (Ecuador)
- Universidad de la Amazonia – UNIAMazonIA (Colombia)
- Instituto de Investigaciones de la Amazonia Peruana – IIAP (Peru)
- Centro Amazónico para la Investigación y Control de Enfermedades Tropicales Simon Bolivar – CAICET (Venezuela)
- Association of Amazonian Universities - UNAMAZ

Clause Four – Governance and Management of the Amazon Initiative

a. The parties shall jointly designate one of the participating institutions as Coordinating Institution. This Coordinating Institution shall serve a three (3) year term, from the date of the last signature of the original agreement, being allowed a renewal for an equal period. By means of this present instrument, the parties designate EMBRAPA as Coordinating Institution for an initial term of three (3) years. The following provisions apply to the Coordinating Institution of the Amazon Initiative:

i. The Coordinating Institution shall present a list of three candidates so that the Steering Committee can select and appoint a general coordinator for the Consortium. The General Coordinator shall compose the AI Management Team, and coordinate with officers of the Coordinating Institution the implementation of policies established by the AI Steering Committee.

ii. The Coordinating Institution shall strive to provide support to the Consortium by supplying physical facilities for its management and administrative structure.

iii. The Coordinating Institution shall support the Consortium with its strategic institutional capacity in operational and administrative matters. The Coordinating Institution may request that the Steering Committee delegate the task of administrative support of the Consortium to another member institution, or contract third parties for this purpose.

b. Consortium members shall establish a Steering Committee (referred to as “AI-SC”) for the purpose of providing guidance in the administrative management of the Amazon Initiative. The AI-
SC is the Consortium’s decision-making body, formed by members of institutions that support the objectives and operational principles of the Consortium. The following provisions apply to the AI-SC:

i. The Steering Committee shall be comprised of one (01) representative from each of the following signatory parties of the Cooperation Agreement, with sufficient authority to appoint a main representative and a substitute representative:

- One representative from each of the NARIs (INIAs) or equivalent bodies in Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela, which are founding members of the Amazon Initiative Consortium.
- One representative from each one of the NARIs (INIAs) or equivalent bodies in Suriname and Guyana, upon formally expressing their desire to become members, availing themselves of the same rights and obligations as a founding member.
- One representative from each of the following CGIAR centers: Bioversity, CIAT, CIFOR, and ICRAF, which are founding members of the Amazon Initiative Consortium.
- One representative from the Amazon Cooperation Treaty Organization (OTCA), in its capacity as a multilateral organization in the Amazon, with right to voice.

ii. A member may resign its participation in the Consortium and Steering Committee by means of a written notification to the Steering Committee through the Coordinating Institution, with at least three (3) months advance notice of its withdrawal. Any withdrawing member shall continue to perform its obligations and exercise its rights until the date of withdrawal or until completion of the collaborative projects underway in which it is involved.

iii. The representative from the institution that acts as Coordinating Member shall also act as Chairperson of the Steering Committee.

iv. The AI-SC may only dissolve or modify the Consortium based on a written motion by a member institution of the AI-SC that shall be sent by the AI Management Team to all AI-SC members at least three (3) months in advance of the date scheduled for the next AI-SC meeting at which time the matter will be considered. The adoption of such measure requires at least three-fourths of votes cast by AI-SC members and shall be implemented by means of an addendum.

v. In the event of dissolution, the AI assets shall be distributed to one or more public institutions whose purposes are similar to those of the Consortium upon agreement by the AI-SC.

c. **Steering Committee Meetings** shall be attended by one representative for each member institution, and shall be held in accordance to the following provisions:

i. The Steering Committee may meet as often as it deems necessary to perform its duties; but shall meet ordinarily at least once every twelve (12) months. The meeting shall be considered valid if assembled with the presence of a quorum of at least two-thirds of its members.

ii. The annual AI-SC meeting shall be held in the country that headquarters the Consortium Coordinating Institution, or at a venue decided upon at a previous meeting of the AI-SC.

iii. The Coordinating Institution shall call ordinary meetings of the Steering Committee and may invite—with the agreement of the SC-other institutions to participate in the capacity of observers.
iv. A member can request the Chairperson to call a meeting of the Committee at any time, so long as this request is endorsed by a minimum of half of the members of the Steering Committee.

v. The parties must be notified in writing regarding any meeting, at least eight (8) weeks in advance.

vi. The representative of the Coordinating Institution shall chair AI-SC meetings, and may assign in an ad-hoc manner his or her duties to other members, or designate a facilitator if necessary.

vii. The AI-SC shall strive to reach decisions through consensus. When voting is required, the decisions will be made by a simple majority of members present in the meetings, with dissenting votes recorded.

viii. Each institution member of the AI-SC—with the noted exception—shall have the right to one vote, and in the event of a tie vote, a new round of voting shall be initiated until a decision is reached.

ix. The minutes of the AI-SC meetings shall be written in Portuguese Spanish, official languages of the Amazon Initiative, and ratified at the next AI-SC meeting. Each party to this Agreement shall receive a copy of the minutes of each meeting.

x. A summary of the minutes of the AI-SC meeting including resolutions and points of action shall be distributed to members within eight (8) weeks after the meeting is held.

xi. Addenda signed by the legal representatives of institutions participating on the Steering Committee shall be necessary for approval of any additional provision to this Agreement.

d. The responsibilities of the AI-SC, which operates as a decision-making body on determining priorities for the Consortium are as follows:

i. Designate a participating institution as Coordinating Institution. This institution shall perform the responsibilities of coordination for a period of three (3) years, renewable for an equal term, from date of the signature of the original agreement.

ii. The Coordinating Institution is required to establish a Management Team consisting of a general coordinator, an executive secretary, a research coordinator, a communication officer, and support staff. The Coordinating institution shall approve the terms of reference for the Management Team operations.

iii. Monitor and evaluate the performance of members of the AI Management Team.

iv. Approve entry of other institutions in the capacity of AI associate members.

v. Approve the terms of reference to form a Technical Committee with representatives of Consortium founding and associate members.

vi. Define general priorities and long-term strategic Consortium plans and programs.

vii. Approve criteria and guidelines for preparation of research and development proposals.

viii. Provide guidelines for use of annual resources, using criteria of equity, focal areas, geographical coverage, scientific opportunities and administrative capacity.

ix. Approve annual operational program (Work and Budget Program) prepared by the AI Management Team for the following period.

x. Approve annual reports prepared by the AI Management Team, as well as rendering of accounts on use of basic funding for each term.

xi. Approve AI Consortium policies regarding sharing data, intellectual property rights, research ethics and conflict resolution.

e. The primary mechanism for the Consortium to develop its regional collaborative development research and intervention agenda is the Technical Committee (hereinafter called “AI-TC”). The AI-TC is comprised of specialists appointed by founding and associate institutions, and proposes guidelines for implementation of technical activities to be performed within the scope of the Consortium. The representatives appointed by their respective institutions must have recognized
experience, qualifications and capacity in subjects related to scheduled Consortium activities and objectives. The following provisions apply to the AI-TC:

i. The AI-TC shall be comprised of one (01) representative from each of the following signatory parties of the Cooperation Agreement, with sufficient authority to appoint a main representative and a substitute representative:

- One representative from each of the NARIs (INIAs) or equivalent bodies in Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela, which are founding members of the Amazon Initiative Consortium.
- One representative from each of the following CGIAR centers: Bioversity, CIAT, CIFOR, and ICRAF, which are founding members of the Amazon Initiative Consortium.
- One representative from each of the NARIs (INIAs) or equivalent bodies in Suriname and Guyana, upon formally expressing their desire to become members, availing themselves of the same rights and obligations as a founding partner.
- One additional representative of the associate institutions from each participating country, appointed by the NARI (INIA) or equivalent bodies of the respective countries and serving rotating terms every 3 years.
- One representative from the Association of Amazon Universities – UNAMAZ.
- One representative from INIA-Spain, in the special capacity of an institution providing technical-scientific support to the Amazon Initiative.

ii. The AI-TC shall support the Management Team in implementing the Consortium’s programmatic agenda, and its members shall undertake the following responsibilities:

- Attend the annual AI-TC meetings and participate in electronic discussions to identify problems at the regional, sub-regional and local level to be addressed by Consortium.
- Collaborate in organizing workshops, conferences, training courses and human resource development activities proposed within the framework of the Consortium.
- Share information and knowledge related to the AI in their respective regions and institutions.
- Collaborate in fundraising initiatives for regional collaboration proposed by the Management Team.
- Contribute to the design, preparation, implementation and supervision of scheduled Consortium activities, conducted within their respective thematic and geographical areas.
- Facilitate teamwork regionally, through the constitution, internal supervision and evaluation of a network of institutional researchers active in their respective thematic and geographical areas: the AI Network for Natural Resource Conservation and Sustainable Use.

iii. Representation on the AI-TC is institution-based. Each institution has the right to appoint one representative to the AI-TC. In the event that an individual cannot attend a meeting, the institution can designate a substitute representative to participate in its behalf. Technical Committee meetings shall take place annually, preferably at least one month before the AI-SC meeting.
iv. The Technical Committee member of the Consortium Coordinating Institution shall provide support to the Management Team in designing, developing and conducting follow-up of technical activities.

f. The AI administrative structure consists of a Management Team (hereinafter called “AI-MT”), which shall be established by the AI Coordinating Institution and insofar as possible located within its facilities, in accordance to the terms of reference approved by the Steering Committee. The AI-MT is responsible for providing support to collaborative work performed by Consortium members, for facilitating communication and contributing to definition of tasks and responsibilities among partner institutions and their researchers. The main responsibilities of AI-MT include:

i. Establish the AI-MT office at a location defined by Amazon Initiative Coordinating Institution according to the terms of reference approved by the Steering Committee.
ii. Provide operational, monitoring and evaluation guidelines of programmatic AI activities.
iii. Provide staff support to achieve transparent and efficient AI-SC performance in tracking actions approved at AI-SC meetings.
iv. Develop a coordinated fundraising strategy from global, regional and national financial sources, ensuring human and financial resources necessary for efficient administration.
v. Identify funding opportunities and coordinate proposal submission.
vi. Develop the appropriate means for scientific collaboration among member institutions, coordinating internal and external links and opportunities for joint activities.
vii. Coordinate human resource development and institutional strengthening activities for Consortium member institutions.
viii. Organize and communicate results produced by the Consortium.
ix. Provide mechanisms for exchange of information and knowledge among members and with third parties.
x. Prepare periodic reports on progress of the Amazon Initiative.

The Management Team shall be comprised of the following members:

i. General Coordinator: The General Coordinator shall be appointed by the Steering Committee from a short-list of three persons proposed by the Consortium’s Coordinating Institution. The main activities and responsibilities of the General Coordinator include:
   - Ensure proper coordination between provisions of the Coordinating Institution and the Consortium’s objectives.
   - Constantly liaise with officers of the Coordinating Institution to inform, discuss and guide those officers regarding issues and the development of the Consortium.
   - Represent the Director of the Coordinating Institution on issues regarding the AI, except during AI-SC meetings.
   - Establish liaison with Directors and representatives of all Consortium member institutions in order to inform them on advances and consult them regarding relevant issues.
   - Conduct fundraising efforts on behalf of the Consortium, maintaining contact with donors and potential partners.
   - Make operational decisions based on guidelines ratified by the AI-SC, including with regards to human and financial resource management and assessment of AI Management Team performance.
   - Summarize annual successes of the Consortium in the form of an Annual Activities Report and ensure broad and appropriate internal and external distribution.
ii. Executive Secretary: The Executive Secretary shall be appointed by AI-SC from candidates put forth by member institutions and is responsible for leading and managing Consortium networking, capacity building, and communication programs and operational activities. The main activities of Executive Secretary include:

- Design networking, capacity building, and communication Consortium activities in accordance to priorities identified by the AI-SC.
- Develop project proposals and concept notes, and lead collaborative development of these instruments for successful performance of the networking, capacity building, and communication agenda approved by the AI-SC.
- Support the General Coordinator in conducting fundraising efforts for networking, capacity building, and communication activities on behalf of the Consortium, maintaining contact with donors and potential partners.
- In conjunction with the General Coordinator, prepare annual work and budget plans for the Consortium to be approved by the Steering Committee.
- Establish liaison with AI technical representatives in order to assure implementation of programmatic activities, including regular visits to review programmed activities in Amazon sub-regions or research sites.
- Summarize programmed activity results and lessons learned from them, and ensure appropriate internal and external distribution of progress reports, including the report to donors on programs that they have supported financially.

iii. Research Coordinator: The Research Coordinator shall be appointed through an international search process put forth by the AI-SC and is responsible for leading and managing Consortium scientific programs. The main activities of Executive Secretary include:

- Design scientific Consortium activities in accordance to priorities identified by the AI-SC.
- Develop project proposals and concept notes, and lead collaborative development of these instruments for successful performance of a scientific agenda approved for the AI.
- Conduct fundraising efforts for scientific activities on behalf of the Consortium, maintaining contact with donors and potential partners.
- Establish liaison with AI technical representatives in order to assure implementation of programmatic activities, including regular visits to review programmed activities in Amazon sub-regions or research sites.
- In conjunction with the AI-Technical Committee, coordinate work groups or special teams to prepare research proposals and perform other technical activities.

iv. Communication Officer: The Communication Officer shall be a contracted professional who jointly with the Executive Secretary will establish the Communication Strategy and Annual Communication Plan for the Amazon Initiative. The activities listed in the Annual Communication Plan include:

- Writing, production of texts and publication in Spanish, Portuguese and English
- Creation, writing and updating of contents on the AI website
- Design and production of graphic material
- Organization of events
- Press activities
• Internal communication
• Selection, contracting and supervision of services provided by third parties to implement the Communication Plan.
• Establishment of collaboration mechanisms with those responsible for communication in Consortium member institutions.

h. AI financial accounts and transactions shall be audited annually by an independent auditor appointed by the AI-SC and a report from said audit, including financial statements of the Coordinating Institution related to Consortium activities, shall be transmitted within three months after termination of each fiscal year by the Management Team to the Chairperson of the AI-SC, who shall present the report to the SC in time to be analyzed at its next meeting.

i. Funding of Consortium activities should come from contractual agreements, contributions, donations, investments and any other source approved by the AI-SC. Raising funds for collaborative work on a regional, sub-regional and local level is the collective responsibility of AI-SC members and Consortium partners, which will aid the Management Team in preparing fundraising proposals on behalf of the Consortium. Nevertheless, members are ensured the possibility of proposing and managing projects or other activities to provide funding resources in areas encompassed in this Agreement, either individually or in cooperation with third parties.

j. Operational policies and administrative procedures of the Consortium are linked to those of the Consortium’s Coordinating Institution, which shall provide assistance with its strategic institutional capacity in operational aspects of the Amazon Initiative. Financial and budgetary control of the AI shall be performed by offices of its Coordinating Institution. The Coordinating Institution, pursuant to consent by the Steering Committee, may subcontract third parties to provide efficient financial management and administrative support to Consortium activities.

1. Members are ensured the possibility of proposing and managing projects or other activities to provide funding resources in areas encompassed in this Agreement, either individually or in cooperation with third parties.

2. Pursuant to provisions in item 1, by this present instrument, the parties designate the CGIAR centers that are members of the Consortium (Bioversity, CIAT, CIFOR, and World Agroforestry) as the entities that shall manage implementation and financial resources related to the Amazon Eco-regional Program that shall be presented to CGIAR. Contracts and agreements that may be executed and that are related to this program shall be signed by the Centro Internacional de Agricultura Tropical (CIAT), which shall represent the other AI’s CGIAR members for this purpose.

Clause Five – Implementation Activities

a. Cooperation shall take place through execution of Collaborative Programs (CPs) related to the Areas of Cooperation of the Consortium mentioned in Clause 2, and approved by the Steering Committee, which shall clearly define, among other topics, the following: objectives and rationale; human, material and financial resources that shall be contributed by each party; rights and obligations of each party; intellectual property rights to processes or products obtained through said cooperation.

b. The terms of this cooperation shall not hinder participants from developing, individually or in collaboration with third parties, activities in areas encompassed by this Agreement.

c. The AI Network for Conservation and Sustainable Use of Natural Resources: the AI Thematic Sub-networks are informal communities formed to promote exchange of information and knowledge, and the design and implementation of collaborative activities in thematic areas of the Consortium, and to promote interaction between scientific and traditional knowledge. Some main characteristics of this AI Network are:

i. The Network topics are identified and approved by the Technical Committee.
ii. One of AI technical representatives in each country, called the National Network Coordinator, shall lead in the organization of thematic sub-networks in each respective country, and shall coordinate the general activities of that country’s network.

iii. The Network structure includes a liaison officer (facilitator) for each topic or theme in each country and a general coordinator per theme selected by thematic liaison officers (theme facilitators) in each country. The former shall facilitate network activity in each country and thematic activities. The latter shall lead the theme and shall promote intra-regional interaction.

iv. A central network coordinator shall provide general liaison for the network.

v. Each thematic sub-network shall develop its own outlook (vision), strategies and action plans to fulfill its mission.

d. This Agreement establishes a contribution of US$ 10,000.00 (ten thousand US dollars) to be transferred by each member to cover basic management costs for Consortium activities during the period from 01 November 2007 to 31 October 2010.

Clause Six – Dissemination of Results

Pursuant to this instrument, the parties do hereby agree to disseminate information and knowledge generated from activities within this Agreement, ensuring that this shall not obstruct granting of intellectual property rights with respect to any process or product obtained as result of cooperation provided for in this Agreement. Intellectual Property Rights criteria, when applicable, shall be detailed more specifically in separate agreements.

Clause Seven – Unforeseen Circumstances

a. Any party that undergoes institutional restructuring or suspends its activities as result of governmental action, transfer or any other legally approved act, is obligated to state in the document regarding this alteration, transfer or suspension the provisions concerning Intellectual Property Rights negotiated and included in CPs under the framework of this Agreement, or in any other subsequently binding legal commitment.

b. Any unforeseen event causing losses or damages shall be informed in writing by the affected party to the other party(ies), for the purpose of reviewing the obligations previously agreed on; however, this shall not exempt the affected party from any scheduled payment.

Clause Eight – Legal Institutional Relations

Each party is an independently managed institution. No other relation, such as incorporation, association or contractual risk shall be created among parties through this instrument; no labor liability of one of the parties shall compromise the others.

Clause Nine – Duration

a. This Addendum shall be valid for a period of three (03) years, from the date of signature by two thirds of its members. It can be renewed for an additional period, by way of execution of an Addendum, with prior notification to each one hundred and eighty (180) days in advance of the date mentioned.

b. Any party can request in writing the cancellation and/or annulment of a CP, in the event the other parties fail to comply with provisions of any Clauses of this Agreement, as long as it grants other
parties full right to defense. The other party(ies) shall be obligated to refund to the first party any
damage proven to result from cancellation of aforementioned CP.


c. Any party may withdraw from this present Agreement, at its discretion, independently of just
cause and without any sanction being applied, as long as it does so by written communication to
the other parties, with no less than one ninety (90) days prior notice, as stated in Clause 4.b.ii.
The remaining parties may, at their discretion, continue executing this present Agreement.

d. This Agreement can be altered by consensus of the parties upon execution of an Addendum.

Clause Ten – Conflict Resolution

The Parties hereby agree to utilize Arbitration Court to resolve any disputes arising from this Agreement.

Clause Eleven – Effect of Modifications

The Clauses of this Addendum modify and replace the Clauses of the Initial AI Cooperation Agreement
executed in 2004 among the founding members.

IN WITNESS THEREOF, the parties of this instrument, acting by means of their legal representatives,
undersign the present Agreement, in three (03) copies of equal tenor, in Portuguese, Spanish and
English.

Silvio Crestana
Director President of Embrapa
Venue and date:.................................

Arturo Vega
Executive Director of CORPOICA
Venue and date:.................................

Julio Cesar Delgado
Executive Director of INIAP
Venue and date:.................................

Suzana Ribeiro
Minister – MDRAyMA - Bolivia
Venue and date:.................................

Prudencio Chacón
Executive Director of INIA
Venue and date:.................................

Daniel Reynoso Tantalian
Executive Director of INIA
Venue and date:.................................

Dennis Garrity
Director General of ICRAF
Venue and date:.................................

Joachim Voss
Director General of CIAT
Venue and date:.................................

Frances Seymour
Director General of CIFOR
Venue and date:.................................

Emile A. G. Frison
Director General of Bioversity
Venue and date:.................................

Witnesses:

1. _____________________
Name:__________________________
Identity Document:______________
Venue and date:......................

2. _____________________
Name:__________________________
Identity Document:______________
Venue and date:......................