COOPERATIVE EVALUATION OF THE SMITHSONIAN INSTITUTION'S ACTIVITIES UNDER THE USAID/BRAZIL GLOBAL CLIMATE CHANGE PROGRAM

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LIST OF ACRONYMS

APA	Área de Proteção Ambiental (Environmental Protection Area)
ARIE	Área de Relevante Interesse Ecológico (Area of Relevant Ecological Interest)
BDFFP	Biological Dynamics of Forest Fragments Project
CI	Conservation International
CNPT	Centro Nacional de Desenvolvimento Sustentado das Populações Tradicionais (National Center for Sustainable Development of Traditional Populations)
CPATU	Centro de Pesquisa Agroflorestal da Amazônia Oriental, ex-Centro de Pesquisa Agropecuária do Trópico Úmido (Eastern Amazon Agroforestry Research Center, former Humid Tropics Agricultural Research Center)
EIA	Environmental Impact Assessment
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária (Brazilian Corporation for Agricultural Research)
FINEP	Financiadora de Estudos e Projetos (Funding Agency for Studies and Projects)
FNS	Fundação Nacional de Saúde (National Health Foundation)
FVA	Fundação Vitória Amazônica (Amazonian Victory Foundation)
GCC	Global Climate Change
GIS	Geographic Information System
GTA	Grupo de Trabalho Amazônico (Amazon Working Group)
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Institute of Environment and Renewable Natural Resources)
IDB	Interamerican Development Bank
IMAFLORA	Instituto de Manejo em Certificação Florestal e Agrícola (Institute of Management of Forest and Agricultural Certification)
IMAZON	Instituto do Homem e Meio Ambiente da Amazônia (Institute of Man and Environment in the Amazon)
IMTM	Instituto de Medicina Tropical de Manaus (Manaus Institute of Tropical Medicine)
INPA	Instituto Nacional de Pesquisa da Amazônia (National Institute of Amazon Research)
IPAM	Instituto de Pesquisa Ambiental da Amazônia (Institute of Amazon Environmental Research)
IPHAE	Instituto de Pré-História, Arqueologia e Ecologia (Institute of Pre-History, Archaeology and Ecology)
ISA	Instituto Socioambiental (Socioenvironmental Institute)
ISPN	Instituto Sociedade, População e Natureza (Institute for Society, Population and Nature)
MMA	Ministério do Meio Ambiente, dos Recursos Hídricos e da

	Amazônia Legal (Ministry of Environment, Water Resources and the Legal Amazon)
MOU	Memorandum of Understanding
MPEG	Museu Paraense Emílio Goeldi (Emílio Goeldi Museum of Pará)
NAEA	Núcleo de Altos Estudos Amazônicos (Center for Advanced Amazon Studies)
NGO	non-governmental organization
ODA	Overseas Development Administration
ORSTOM	Institut français de recherche scientifique pour le développement en coopération
PASA	Participant Agency Service Agreement
PMFS	Plano de Manejo Florestal Sustentável (Sustainable Forestry Management Plan)
PNMA	Programa Nacional de Meio Ambiente (National Environment Program)
PPG7	Pilot Program to Conserve the Brazilian Rain Forest
REBRAF	Rede Brasileira Agroflorestal (Brazilian Agroforestry Network)
RPPN	Reserva Particular do Patrimônio Natural (Private Reserve of Natural Patrimony)
SI	Smithsonian Institution
SNUC	Sistema Nacional de Unidades de Conservação (National System of Conservation Units)
SO	Strategic Objective
TNC	The Nature Conservancy
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WHRC	Woods Hole Research Center
WWF	World Wide Fund for Nature

1 INTRODUCTION

This evaluation report of Smithsonian Institution (SI) activities under the Global Climate Change (GCC) Program was prepared for the United States Agency for International Development (USAID) in compliance with Part A of Purchase Order 512-0784-0-00-5924-01. The Statement of Work is in Annex 1.

1.1 USAID Global Climate Change Program

In 1990 the U.S. Congress authorized the U.S. Agency for International Development (USAID) to implement a program to address important global climate change issues in "key" countries, including Brazil. In response to the Congressional mandate and to the Brazilian Government's interest in addressing the issues, USAID launched a Global Climate Change Program (GCC) in Brazil. The primary goal of the program was to reduce Brazil's contribution to global emissions of greenhouse gases by abating deforestation in Brazil's Amazonian states. Toward this end, the GCC program promoted the development of ecologically and economically sustainable policies and activities to manage forest resources in the region.

The GCC Program included activities in three main areas: 1) applied research on and practical demonstrations of ecologically and economically sustainable forest management and conservation practices; 2) human resources training and institutional strengthening; and 3) policy analyses and environmental impact assessments.

Recently, the GCC Program was expanded to include biodiversity conservation issues. The proposed new activities build on the success of the existing GCC Program by including new partnerships in the most highly threatened ecosystems of Brazil, the Atlantic Forest and the Cerrado.

1.2 Smithsonian Institution Activities within the USAID/GCC Program

The BDFFP, managed by the National Museum of Natural History of the Smithsonian Institution, has been under way for 15 years with the purpose of studying the effect of the size of forest fragments on biological diversity. The project is housed at the National Institute for Amazon Studies (INPA) and has field sites north of Manaus.

Under the GCC Program, support has been provided primarily for training in month-long field biology courses on forest ecology and conservation. Some support was for graduate student research. There has also been considerable effort to take stock of and disseminate the results of research over the years.

2 METHODOLOGY

The evaluation was conducted in the context of SI's contribution to AID/Brazil’s

strategic objective of "environmentally and socioeconomically sustainable alternatives for sound land use adopted beyond target areas". The overall objectives of the evaluation were:

- assess the continuing validity and relevance of project components.
- assess the effect of external and unanticipated actions and/or events on project effort.
- review and analyze progress to date in execution of SI's activities as specified in the grant documents.
- evaluate whether performance to date is consistent with expectation and if changes are needed to sustain the positive effects.
- review and analyze current project indicators and log-frames.

Evaluation of the SI activities involved site visits in Amazonas. The various evaluation activities are summarized below.

From October 17 to 20, 1996, Donald Sawyer and Eric Stoner visited the Biological Dynamics of Forest Fragments Project (BDFFP) carried out by SI in Manaus. On the morning of October 17, Donald Sawyer went with Claude Gascon to visit the Colosso field site of forest fragments north of the city. In the afternoon, after lunch with Claude Gascon, the team went to the National Institute of Amazon Research (INPA) and met with Renato Cintra of the Ecology Department, who is course coordinator, and Luis Carlos Joels, Coordinator of Extension at INPA.

On the morning of October 18, there were meetings with Rita Mesquita and Heraldo Vasconcelos, former course participants who have joined the program. The team had lunch with Niro Higuchi, first Coordinator of the project (1991-1994). In the afternoon, it met with Ana Cristina Duarte, former student assistant. There was then a meeting with Eloy Castelon, Coordinator of the Graduate Program at INPA, and Adalberto Luiz Val, researcher. The team also met with the researchers Susan Lawrence, from Australia, and Eurico Bernard, from Minas Gerais.

During the visit to Manaus, Donald Sawyer examined the course books, which contain short papers written by the participants on the basis of field research. He also took various publications of the BDFFP with him to examine in Brasília. Other documents which were examined in Brasília include project files and bibliography.

3 FINDINGS AND RECOMMENDATIONS

3.1 Findings

Although the original experiment with forest fragments has been overtaken by events, the SI program is now adapting to the new circumstances and is proceeding well. The evaluation exercise led to the following specific findings with regard to the three main

areas considered in the evaluation:

3.1.1 Effective partnerships and capacity building

Partnership with INPA. Within INPA, the project has been seen by some researchers or administrators as a project outside the institution's priorities which receives outside funding and which sooner or later will come to an end. Others who have had more contact see it as permeating INPA, both contributing to and receiving from the host institution's activities. The need for greater institutional integration, without losing control of essential scientific and administrative processes which require a certain degree of autonomy, is well perceived by the project management. Regardless of perceptions, there is *de facto* increasing participation of INPA researchers in project activities.

Other local partnerships. With its emphasis on science and the broader scientific community as its primary reference group, the project has had little contact with local colleges/universities, with EMBRAPA or with local government agencies. Nor has it interacted significantly with USAID-supported NGOs except for the Woods Hole Research Center. Closer contact with local agencies and institutions is now part of INPA's redefined mission, as part of outreach efforts to overcome its isolation.

Co-financing. The project is actively seeking financial support from other sources. The Inter-American Development Bank (IDB) funds non-Brazilians and logistics in the OTS field course. The MacArthur Foundation has also provided support. On the other hand, funding from the PPG-7 was delayed since FINEP claimed that it could not support foundations.

Training. SI has the INPA project that has trained more students than any other, including Max Planck and ORSTOM. The project has a specific role within INPA by providing field biology training and student assistantships. The OTS field course has been offered four times, and may now be offered more than once a year. It lasts 30 days, with 20 students selected among approximately 50 candidates. The project provides a natural laboratory, better in terms of infrastructure than the Ducke Reserve, and includes primary forest and secondary growth (regeneration).

3.1.2 Institutional capacity and participation of government and civil society

Institutional capacity. The BDFFP itself is consolidated, with good management, a well-designed building on the INPA campus and appropriate facilities as well as a very valuable field site. Its institutional capacity is well established. There is, however, uncertainty over funding and the advantages and disadvantages of greater integration into INPA.

Government participation. Because of the emphasis on universal science as opposed to practical applications to regional problems, there has been little participation on the part of government. This was also the case for INPA as a whole. However, in recent

years, INPA has begun a concerted effort to transfer research results to various levels of government and to producers, an effort in which the project could participate.

Civil society participation. For similar reasons, there has been little participation so far on the part of civil society in the project or in INPA, be it in terms of economic, social or political actors. The original forest fragments project was indirectly associated with large ranches which received fiscal incentives. This model of corporate frontier expansion is no longer as relevant in the Amazon as when the project began. At present, there is a strong need to identify and diffuse sound and sustainable land use for small farmers and traditional populations and to establish relationships with the social and environmental movements which represent and support them. Such movements are weaker in Amazonas and Roraima than in the rest of the Amazon region, but there are groups such as the USAID-supported Amazon Victory Foundation (FVA) in Manaus with which there could be more interaction.

3.1.3 Impact and presence

Geographical scope. The scope of the program activity is limited to various sites around Manaus, including several different ecosystems, from floodplain to terra firme. On the other hand, the program has broad reach by providing training for people from other regions of Brazil and from abroad. There is little demand for the OTS course from the state of Amazonas or other states in the Amazon region.

Specific scientific contributions. The “border effect” of deforestation is an important scientific contribution. The shift from an isolated fragment to a matrix or landscape focus promises further contributions more directly relevant to conservation and development policies and efforts in the Amazon, thus facilitating achievement of the BDFFP’s original goal of being policy relevant (minimum size of fragments).

Impact. The program provides training in basic tropical ecology, specifically for the Amazon. There is emphasis on integration among taxa, which is not common in biology. The program innovates in that it does not work exclusively with intact natural ecosystems, but also with the interfaces of forest with cleared areas. There is increasing emphasis on the use of ecology for management. The training, however, is for researchers, not for direct application.

Applied research. While the training and research in the project go beyond narrow disciplinary approaches and deal increasingly with anthropic transformations, few of the project results deal directly with regional needs. There is considerable potential for contributions in such areas as biological control, ecological impact of selective logging and enrichment of secondary growth (capoeira). There is also a need for a stronger scientific basis for decisions on policy initiatives such as Ecological Corridors as proposed to the PPG-7.

Outreach. The project is interacting more closely with the extension office of INPA, which is particularly concerned with the third element in INPA’s mission as defined in the

strategic planning undertaken in 1992-1993: research - training - diffusion. INPA is particularly interested in reaching decision-makers and raised the status of extension office from an advisory capacity to a directorate. It works with clientele that include the school system, small farmers, the wood industry, the food industry and environmental management projects. It is starting to work in Roraima and Acre, to be followed by Rondônia, i.e. the western Amazon. This offers opportunities for the project.

3.2 Recommendations

The evaluation led to the following recommendations:

Ecology. Although the project makes very significant effort to integrate various fields of biology, which are conventionally seen in isolation, there is room for greater integration in a systemic approach so that trainees complete their studies with an overall view of the forest and its dynamics, not just fragmented pieces in terms of one or two species or interactions. The challenge is particularly great given that the course is taught by many different specialists from different places. More weight might be given to ecological theory and to research methodology, a basic need. It may be necessary to extend the duration of the course.

Socioenvironmental focus. The project should effectively incorporate the fact that it is dealing with altered ecosystems and explicitly address the human dimension, including people in the forest and moving beyond ethnobotany into human ecology. This broadening of the focus will make the project's work more relevant to regional needs and will also open up new sources of domestic and international funding beyond those now available for pure natural science research. Without much change in the project staff, this new approach could be guided by an advisory board including social scientists and representatives of economic and social groups.

Applied research. The training program should include contact with local small farmers or traditional populations so that the trainees may become more familiar with their use of resources and their needs. The potential for agroforestry systems or "agroforestry poles" (as in the case of Rio Branco, Acre) seems to be high because of land availability (abandoned ranches) and proximity via paved road to an urban market of one million consumers. The challenge is great because of low productivity of the ecosystem. Research could be used for methodology of environmental impact assessment (EIA). The health dimension, especially as it relates to vector-borne tropical diseases, is another promising avenue of applied research for the project.

Dialog. With a broader focus, it is important for the project to interact on a more regular basis with federal government agencies such as CNPT, state and local governments (the forest fragments are mostly within the Manaus municipal limits), universities, NGOs such as IMAZON and IMAFLORA and networks such as the Amazon Working Group (GTA), communities, social and environmental movements and business (farmers, ranchers, loggers). This networking within the Amazon region would help identify qualified local candidates for training. In the health area, interaction with the National

Health Foundation (FNS) and the Manaus Institute of Tropical Medicine (IMTM) would be important.

Geographical focus. Because of the high but sometimes unrecognized heterogeneity of the Amazon biome, the comparative focus of the project could be increased to include greater variety of ecosystems or sites and greater interchange with research institutions working in other parts of the region, such as the Goeldi Museum (MPEG) and WHRC/IPAM. Because of the vacuum of local capacity in Roraima and the potential impact of pavement of the BR-174 highway, contributions in that state are urgent, perhaps though a specific course.

Local trainees. The project could undertake a kind of affirmative action or active recruiting of qualified candidates from the Amazon region, with some preparation (*nivelamento*) if necessary, in order to make a greater contribution to strengthening of local capacity.

Graduate training. The project could improve its impact in the region by greater integration with the INPA graduate program, since 80% of the graduate students later work in or on the Amazon region. Along the same lines, it could seek closer contact with the local colleges and universities, particularly the Federal University of Amazonas.

INPA extension. The project should seek greater involvement with INPA extension and outreach programs as a means to improve integration with the host institution, transfer the results of its research and receive feedback about practical applications.

Institutional support. More regular and long-term support should be provided by the Smithsonian Institution and by INPA as “parent” institutions.

Internships. The project should continue its efforts to promote improved coordination and accountability in internships and to complete the transition from low-cost labor to young scientists.

GIS. The project should make use of Geographic Information Systems (GIS) technology, which is especially important in the context of analysis of matrices, mosaics or landscapes. While the cost of equipment and software is not particularly high, the recurrent costs, especially of human resources, for operating the system can be prohibitive. Thus, the best solution is probably to seek simple systems that do not require specialists and to establish partnerships with other institutions.

Sites. The project should offer use of research sites and field facilities to INPA and other Brazilian or international research institutions or programs. The Colosso site has the advantage that, in contrast to the Ducke Reserve, there are and can be interventions. After pavement of the BR-174, the site is only two hours away from Manaus, which permits site visits without overnight stays. Such use could open up opportunities for partial cost recovery and improvement in facilities and communication. The Area of Relevant Ecological Interest (ARIE) should be expanded to include the matrix, not just the fragments, and the whole area should be protected against poachers and squatters.

4 CONCLUSIONS AND LESSONS LEARNED

In concluding this analysis it is useful to return to the questions and measures of success identified in the scope of work for this evaluation. For the SI component of the GCC Program to be successful it must accomplish the following:

- create effective partnerships in Brazil, that build capacity and expertise for resolving Brazilian environmental problems:
- contribute to increase local institutional capacity and participation of governmental bodies and the civil society in environmental management, and
- make more effective use of the existing mechanisms to increase impact and presence in Brazil.

With regard to partnerships, the SI component is aware of the problem of relative isolation in the past and is taking appropriate steps to establish closer links with INPA and other institutions. The undertaking is complex and requires skills beyond those of pure scientists who know little about local realities, but the project is on the right track.

As for the second point, the project has been more oriented toward the scientific community in Brazil than to local or regional needs, but it has great potential to contribute to local institutional capacity to implement sustainable development in tropical forest areas and is moving in that direction.

As in the case of partnerships and capacity-building, effective use of existing mechanisms has been a problem in the past but the project management is learning how to overcome the obstacles.

The general lesson that can be drawn from the SI experience is that a project can change in very significant ways as it moves from conception to implementation to maturity and that making it appropriate and sustainable depends to a very large extent on adaptation to local needs. Such adaptation can be learned the hard way or it can be stimulated by the program. The GCC Program is contributing to adaptation of the SI project and can contribute even more.

ANNEX 1

STATEMENT OF WORK

The Statement of Work of Part A of Purchase Order 512-0784-0-00-5924-01 is as follows:

Activities to be Evaluated

The evaluations will focus on the activities of the following projects under the USAID Global Climate Change (GCC) Program in Brazil:

Woods Hole Research Center (WHRC)
Grant No. 512-0784-G-00-3007
Authorized and obligated on Sep 28, 1993
Project assistance completion date (PACD) - Sep 30, 1996
Funds obligated to date - US$ 722,581,00

Smithsonian Institution
Grant No. 512-0784-G-00-3008
Authorized and obligated on Sep 28, 1993
Project assistance completion date (PACD) - Sep 30, 1996
Funds obligated to date - US$215,172

U.S. Environmental Protection Agency (EPA)
PASA No. 512-0784-P-EP-1045-00/512-0784-P-EP-3006
Authorized and obligated on Aug 30, 1991
Project assistance completion date (PACD) - Sep 30, 1996
Funds obligated to date - US$122,000

Purpose of the Evaluations

The evaluations of the above institutions' activities, under GCC funding, are intended to be a collaborative participatory process involving staff, field personnel responsible for project implementation, AID/Brazil project officers and an external specialist, as members of the evaluation panel. These evaluations will be conducted as a component activity of the overall AID GCC Program performance evaluation. The actions should be evaluated in the context of their contribution to the AID/Brazil strategic objective of environmentally and socioeconomically sustainable alternatives for sound land use adopted beyond targeted areas.

The overall objectives of the evaluations can be summarized as follows:

1) Assess the continuing validity and relevance of project components, and suggest such modifications as may be required to increase the likelihood that the

efforts will achieve their objectives in a sustainable manner.

2) Assess the effects of external and unanticipated actions and/or events on project effort.

3) Review and analyze progress to date in execution of the institution's activities as specified in existing grants documents.

4) Evaluate whether performance to date is consistent with expectations and if changes are needed to sustain the positive effects of these efforts.

5) Review and analyze current project indicators and log-frames.

The following are some key questions to be answered by the evaluation team:

. Are the projects achieving satisfactory progress toward their stated objectives? What are the positive and negative effects resulting from the projects?

. Are the effects of the projects likely to become sustainable, will they continue after the end of the projects?

. Should the EPA and Smithsonian establish a full-time presence in Brazil? Should these institutions strive to strengthen the capacity of a sister institution (NGO) in Brazil?

. How is the technical assistance and training being utilized? What are the specific results in this area?

. What is the degree and effectiveness of the interaction of the institutions and local implementators?

. What are the results of the partnerships established in Brazil? How can these grantees become more relevant within the context of the GCC objectives?

. Are the projects cost-effective? Are there alternative approaches to accomplish the same objectives at lower costs?

. How effective is their collaboration with other CGG grantees and AID?

Each evaluation report should provide empirical answers to these questions, conclusions (interpretations and judgments) that are based on the findings, and recommendations based on an assessment of the results of the evaluation exercise. For projects which involve scientific research, the report should evaluate how relevant the research is to USAID's development objectives and indicate how well this research is being tested in field/community situations. It also should identify what further research areas, if any, have become relevant as a result of the grantee's work. The reports should provide the "lessons learned" that might emerge from the analysis.

Methods and Procedures

These evaluations are timed as mid-term evaluations, intending to provide guidance in how project implementation could be improved over the remaining life of the projects.

The evaluations will be conducted through field visits and interviews with all grantees' counterparts in Brazil. The evaluation team will have preparatory meetings in Brasília to review the available documentation and discuss procedures and organization.

Evaluation Team Composition

The core evaluation team will be composed of the grantees' coordinators, AID/Brazil Environmental Advisor and a consultant (external evaluator). Portuguese fluency is highly desirable for all members of the team.

The team will be led by the external evaluator, who will be responsible for compiling and synthesizing individual sections of the final evaluation reports. The entire team will participate in interviewing, debriefing, review of drafts and final discussion of the findings, conclusions and recommendations, so that the final product will be a consensus piece.

ANNEX 2

LIST OF PERSONS CONTACTED

Eric Stoner, USAID
Adriana Moreira, former USAID
Adalberto Luiz Val
Ana Cristina Duarte
Claude Gascon
Eloy Castelon
Eurico Bernard
Heraldo L. Vasconcelos
Luis Carlos de Miranda Joels, INPA
Niro Higuchi, INPA
Renato Cintra
Rita de Cássia G. Mesquita
Susan Lawrence
Muriel Saragoussi, Fundação Oswaldo Cruz and Fundação Vitória Amazônica

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