

DRAFT

AMAZONIA SUBREGIONAL PROGRAMMING PAPER

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This document is based on investigative missions to the largest Amazon countries during 1992. It was drafted by a Working Group consisting of : Manuel Aristy (OPS), Marc Dourojeanni (PRA), Manuel Romano (DES), and Elaine Zuckerman (DPL), Coordinator. Susana Hecht (consultant) and Karen Truzell (Summer Intern) also contributed.

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AMAZONIA SUBREGIONAL PROGRAMMING PAPER
EXECUTIVE SUMMARY

- 1.1 To achieve sustainable development, the major challenge facing Amazonia today is to translate good policies into practice, primarily through strengthening institutions and providing correct incentives. How the IDB can assist the eight Amazonian countries and the subregion to attain socially and environmentally sound economic development of Amazonia is the subject of this report.
- 1.2 While supporting subregional integration is a general Bank objective, it has been easier to pursue it in subregions-like the Caribbean and Central America where governments have developed trading blocs. Without such arrangements among Amazonian countries, commercial integration is not a current objective. Rather, sustainably developing the fragile Amazonian ecosystem and improving the social welfare of its inhabitants are the paramount goals. To achieve these difficult objectives will require that the eight Amazonian countries adhere to unified policies to sustainably develop their Amazon territories. Success will be predicated on the will and resources committed by the countries.
- 1.3 This paper recommends a two-pronged approach for the Bank: at the subregional level, the Bank should provide support for institution strengthening of the Amazon Cooperation Treaty (TCA) to transform it into an effective body capable of influencing the eight governments, and at the bilateral level, the IDB's entire programming process -- from ISEs, through CPPs, PMPs, programming missions, PMRs and other dialogue with each of the eight countries -- should ensure that policies and investments conform to the strategy proposed in this paper. Only through such a consistent approach, pursued both subregionally and bilaterally, can the Bank effectively assist the Amazonian countries in their goal of achieving sustainable development.
- 1.4 The scope for bank assistance for Amazonia is enormous. Optimizing it in the goal of achieving sustainable Amazon development will require (1) educating people to change behavior and governments to alter incentives to reward socially and environmentally constructive activities; (2) establishing viable institutions to monitor and enforce policies and legislation; and (3) addressing poverty in other parts of Amazonian countries to stem the flow of poor migrants seeking a mythical Amazonian El Dorado in vain.

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The IDB and the Amazon Basin

TABLE I

IDB OPERATIONS AFFECTING THE AMAZON - 1975 TO THE PRESENT

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I. INTRODUCTION

- 1.1 Amazonia contains the world's greatest zoological and biological diversity, most extensive tropical moist forests, largest and most productive river on earth and a multitude of indigenous cultures.¹ While there are differing definitions of what constitutes Amazonia, the most widely-accepted geographic measure of Amazonia is used in this paper, referring to the Amazonian basin, an area exceeding seven million square kilometers divided among eight countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela (see Map). Over centuries, Amazonia's riches have attracted waves of population groups seeking to make a fortune. However, continuous unregulated migration and development schemes have resulted in the extinction of numerous native indigenous groups and precious species of animals and vegetation. Estimates vary widely on the magnitude of Amazonian forests lost but about 10% is an often cited average.
- 1.2 While much of Amazonia's wealth remains intact, national, regional and global concerns about the social and environmental consequences of continuous unbridled Amazonian development have mounted, motivating country policies to improve. The major challenge today is to translate good policies into practice, primarily through strengthening institutions and providing correct incentives, in order to achieve sustainable development. Even with capable institutions and correct signals, however, this objective will be difficult to achieve in the face of powerful cocaine, cattle, logging and mining interests and because the enormous Amazonian territory is divided among eight sovereign states. However, since the development dynamic in the Amazon is unlikely to be derailed, the challenge is how best to harness it, confronting existing constraints. How the IDB can assist countries and the subregion to achieve socially and environmentally responsible economic development of Amazonia is the subject of this report. Because subregional trade and economies are addressed in other subregional programming papers with geographical overlap -- the Andes (Bolivia, Colombia, Ecuador, Peru and Venezuela), the Caribbean (Guyana) and the Southern Cone (Brazil), this paper focuses primarily on institutional, social and environmental issues.
- 1.3 The Bank strategy proposed in this paper, which aims to improve Amazonian policies and practices in the eight countries, is two-pronged, subregional and bilateral.² First, the IDB, through providing support for institutional strengthening to the weak subregional Amazonian Cooperation Treaty (TCA), could transform it into an effective body

¹ Rather than catalog this amazing wealth, the reader is referred to the publication, Amazonia Without Myths (AWM), which serves as this RPP's background report. AWM was prepared by the Amazonian Cooperation Treaty's Commission on Development and Environment for the 1992 UNCED Conference in Rio. It was jointly financed and published by the IDB and UNDP. Refer to the References at the end of the main text for this and any other sources cited.

² Bilateral in this paper denotes interventions by agencies or governments in one Amazonian country rather than in more than one.

capable of influencing the eight governments. Second, bilaterally, the Bank should incorporate Amazonian strategies into the programming and operational cycles of each of the eight countries. While subregional integration along trade and economic lines common to other Latin American subregions is not a current objective, developing and implementing unified policies to protect the fragile Amazon and improve the social welfare of its inhabitants are important goals for the Bank to support. As prescribed in Amazonia Without Myths (AWM), any future Bank assistance must conform to the "New Amazonian Ethic", governed by the principles of close consultation with the subregion's inhabitants, adequate compensation for services rendered and products sold and repatriation of specimens and scientific information by outside researchers using Amazonian resources.

- 1.4 The organization of this paper is as follows: Section II examines existing Amazonian institutions; Section III presents the subregion's key institutional, social and environmental constraints and issues as the basis for the IDB strategy proposed in Section VI; Sections IV and V respectively examine international support and past IDB activities in the Amazon.

II. EXISTING INSTITUTIONS

A. Regional Institutions.

- 2.1 Compared to some other Latin American and Caribbean subregions, the Amazon does not have a plethora of institutions, reflecting its still tenuous subregional bonds. Existing treaties and institutions, described below, have greater environmental and cultural than commercial objectives.
- 2.2 (1) The AMAZONIAN COOPERATION TREATY (TCA) is the premier subregional institution. It was established in 1978 by the eight Amazon countries to promote the basin's subregional development, the welfare of its populations and conservation and rational use of its resources. TCA has spawned a variety of bureaucratic instruments.
- 2.3 At the highest levels, there have been TCA summits (1989, 1992) and meetings of foreign affairs ministers (1980, 1983, 1989, 1991). A Council on Amazonian Cooperation, created to annually review compliance with TCA agreements, has only convened sporadically (1983, 1986, 1988 and 1990); a rotating Secretariat pro tempore hosts Council meetings and presides over day to day TCA affairs (Peru, Bolivia, Brazil, Colombia and presently Ecuador have hosted the Secretariat); Permanent National Commissions exist in each country to execute TCA policies; and Regional Special Commissions on the Environment, Science and Technology, Health, Indian Affairs, Transport, Infrastructure, Communications and Tourism are supposed to design and implement projects. Despite this complex bureaucracy, TCA is a weak organization with few staff, no permanent headquarters, and politicized decision making. As a result, decisions are often inefficient. For example, the Tourism Commission for the

eight countries is headed by Guyana, the country with least tourism experience. Some external agencies have supported the TCA, but sporadically and with little coordination. It is unlikely to become an effective organization without more concerted institutional strengthening, establishment of a permanent secretariat and, above all, enhanced commitment by the eight governments to work together.

- 2.4 Nevertheless, two important TCA documents were prepared for the June 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil. They are summarized below because they should influence the Bank's Amazonian strategy.
- 2.5 First, a political Declaration was signed by the TCA country presidents. It emphasized the right of the eight sovereign countries to use their own resources, including forests, to their advantage; the desirability of establishing the Fund for the Development of Indigenous Populations of Latin America and the Caribbean (Fondo Indigena) which the Bank will cofinance together with bilateral sources (Annex I); and the need for external users of Amazonian genetic materials to compensate the countries of origin and for international cooperation to maintain genetic banks. It called for economic and ecological zoning of Amazonia and for the restoration of degraded soils. It underlined the importance of educating the public about environment and water resources, of providing health and housing services and of strengthening national and subregional institutions. It attributed primary blame to the developed countries for deterioration of the ecosystem, including carbon gas concentrations, and for the developing countries' environment and poverty problems. Finally, it called for additional external financial resources, enhanced access to technology and expanded commerce and debt reduction from the developed countries to finance poverty reduction.
- 2.6 Second, under IDB and UNDP sponsorship, the TCA prepared Amazonia Without Myths (AWM), which contains a comprehensive description of subregional problems with a proposed strategy for sustainable and profitable Amazonian development based on judiciously managing forests, hydrobiological resources and wildlife, extractive activities and ecotourism (see footnote 1).
- 2.7 (2) Another subregional organization is The ASSOCIATION OF AMAZONIAN UNIVERSITIES (UNAMAZ). UNAMAZ was created in 1987 at University of Pará in Belem, Brazil. It aims to promote cooperation among Amazonian universities and research institutions and train policymakers on Amazonian issues through interdisciplinary and graduate courses. With Bank support, it is establishing a regionwide network of Amazonian data called the System of Scientific, Technological and Cultural Information (SIAMAZ).
- 2.8 (3) There is also a strong Amazonian program with an Andean focus within the regional academic institution, THE LATIN AMERICAN FACULTY OF SOCIAL SCIENCES (FLACSO), Quito branch. So far, it is the only Latin American institution offering a multidisciplinary graduate degree in Amazonian studies. FLACSO is seeking external finance to establish the Andean and

Amazon Information Center (CANAMI), another Amazonian data network, oriented toward the Andes, to complement SIAMAZ which it expects will be Brazil oriented. In interviews, both institutions stated their intent to be mutually supportive and complementary. Both UNAMAZ and FLACSO publish widely on Amazonian problems ranging from narcotrafficking to rural development.

- 2.9 (4) In recent years, INDIGENOUS peoples of the Amazon have formed their own subregional federations and confederations including the COORDINATING AGENCY OF THE INDIGENOUS PEOPLE OF THE AMAZON BASIN (COICA), established in 1984. Its affiliates include the Interethnic Development Association of the Peruvian Jungle (AIDSESEP), the Indigenous Confederation of East Bolivia (CIDOB), the Confederation of Indigenous Nationalities of the Ecuadorian Amazon (CONFENIAE), the National Indigenous Organization of Colombia (ONIC) and the Union of Indigenous Nations of Brazil (UNI). Indigenous federations are increasingly influencing policy decisions on land titling, bilingual education, curriculum, environmental, mining and logging issues.

B. National Institutions.

- 2.10 Some national institutions must be mentioned because they play pivotal roles in Amazonian development within countries. While national political institutions tend to be weak as described in Section III, a multitude of non-government organizations (NGOs) more effectively address Amazonian issues in each of the countries. As noted above, national indigenous federations are becoming strong policy lobbies. Influential private thinktanks are also undertaking Amazonian policy advocacy work including, for example, in Colombia, the Rastrojo Foundation, in Ecuador, the Foundation for Agricultural Development (FUNDAGRO), and in Peru, the Peruvian Foundation for Nature Conservation (FPCN). Important scientific research is conducted by national institutes like the Colombian Corporation for the Amazon (ARARACUARA), the National Amazon Research Institute (INPA) in Brazil and the Peruvian Amazon Research Institution (IIAP). There are numerous other social and environmental NGOs of significant stature.

III. CONSTRAINTS AND ISSUES

A. Institution and Laws

- 3.1 Preventing spontaneous development in Amazonian countries is difficult because of public institutional weaknesses and lack of resources and commitment to enforce policies. Government institutions tend to be overcentralized, and local and central institutions tend to have conflicting constituencies and interests. A major problem is insufficient human resources in all Amazonian countries to enforce policies. For example, there is hardly any personnel to ensure that mines do not pollute or trees are not cut down. While Brazil has designated over one million km², approximately one fifth of its Amazon, as reserves or parks, its one guard per 6,000 km² cannot effectively prevent land occupation and forest burning. Moreover, the guards who

are on duty lack training, vehicles and equipment necessary to monitor and enforce regulations. This lack of human resources affects most of the Amazonian countries.

- 3.2 Sometimes national institutions have been misguided. For example, Brazil's Superintendency for the Development of Amazonia (SUDAM) has provided tax breaks, subsidies and investment funds for deforestation and large land development programs. Brazil's National Indian Foundation (FUNAI)'s erratic behavior has converted indigenous tribes to mainstream Brazilian culture, triggering the breakdown of integrated communities and the spread of alcoholism and drugs.
- 3.3 While policies and legislation in the Amazonian countries still need improvement, they increasingly reflect sensitivity to environmental and social concerns. All eight national constitutions state their intent to regulate natural resources and protect the environment. Brazil's and Peru's refer specifically to the Amazon: Brazil's states that its Amazonian Forest shall be used to ensure preservation of the environment, "including the use of mineral resources", and Peru's that "the State is responsible for the development of the Amazon", which can be interpreted positively and negatively. Most of the constitutions enshrine the rights of indigenous people to their traditional lands, culture and languages, most explicitly those of Brazil and Peru. Colombia's constitution devolves environmental decisions to municipalities and subregions.
- 3.4 Several governments, including Colombia, Ecuador and Peru, are enacting discrete Amazonian legislation, although sometimes it is weak, and too often it remains unenforced. Brazil's "Nossa Natureza" program on paper eliminates some, but not all, of the fiscal incentives to clear land and establish land title. However, Brazilian laws still need improvement. A 1965 law, still on the books, prohibits clearing land greater than 50% of any holding, making it possible to clear half, sell the remaining half and apply the 50% limit again. In any case, even the 50% regulation is barely monitored. There are numerous initiatives to conserve permanently in specified zones, for example, along rivers and in protected parks. Ecuador, in 1992, granted over 1.2 million hectares of territory to about 150 indigenous communities in its Amazonian Pastaza province while still maintaining government rights and proceeds from oil exploitation within this territory. Several of the other Amazonian countries have likewise de jure conferred vast territorial expanses to indigenous populations.

B. Social

- 3.5 Underlying Amazonian social and environmental degradation is chronic poverty. The majority of Amazonia's 20 million inhabitants fled deep poverty elsewhere in their countries. They joined emiserated indigenous people, extractivists and earlier migrants. Poor migrants have not gained much from Amazonian economic activities such as oil pumping or cattle ranching which tend to generate wealth for a few local and outside interests. Colonist attrition is high: two out of three

Handwritten notes and signatures on the right margin, including "H. H. H.", "S. S. S.", and "ag - land / 1/8".

occupiers move on within five years, abandoning land, unable to sustain short term returns or eke out a living on temporary contracts; many become slum dwellers in proliferating Amazonian cities.

- 3.6 Amazonia's poor lack access to social services. As a result, their education and health indicators are below national averages. An example is the severe cholera epidemic, a disease of poverty and poor hygiene, which has badly affected Amazonia since the regionwide outbreak began in 1991³. Lacking sewage disposal and potable water systems, populations concentrated along the Amazon, especially in its municipalities, are extremely vulnerable to contamination. Poor indigenous people and migrants living in Amazonia's backward areas have been worst afflicted by cholera. Bolivia's greatest cholera incidence is in Cochabamba and Santa Cruz, Brazil's in Amazonia and Pará and Peru's throughout its Amazonian territory.
- 3.7 Two especially poor Amazonian subgroups are discussed briefly below, indigenous populations and women:
- 3.8 Indigenous Populations. Although not all indigenous people are poor, the majority are and they tend to be the poorest Amazonians. Estimates vary on pre-Columbian indigenous populations in the Amazon from about 7 million (AWM) to 15 million (Hecht & Cockburn) in some 2,000 tribes. Most were decimated by diseases. Today, approximately 400 ethnic groups remain, totaling only between 1.0 and 2.5 million (AWM). In contrast, Amazonia's settler population is estimated at about 18-20 million.
- 3.9 Under constant pressure from colonizers, suicide and drug addiction keep increasing among indigenous people. They lead a precarious existence, even where traditional holdings are recognized, because spontaneous economic developments tend to ignore their rights. Oil and gold mining, timber poaching, land clearing for ranches, roads, narcotics airstrips and laboratories are examples of illegal activities occurring on indigenous lands without legal prosecution.
- 3.10 Indigenous people were not traditionally consulted on most developments affecting them, but indigenous organizations are today undertaking important educational, health and land titling initiatives. Governments are beginning to recognize native rights to land, language and culture, but policy enforcement will be difficult because of opposition from powerful local interests such as some politicians, narcotraffickers and ranchers, and lack of enforcement mechanisms.

³Regionwide, since the 1991 outbreak of the cholera epidemic, by mid-1992, there had been over 5,000 deaths and some 500,000 ill people reported. These data are underestimates because the true extent of the disease far exceeds reported cases. The following is a breakdown of this total in Amazonian countries (Blake; Presensia):

COUNTRY	DEATHS	ILL
Peru	3,500	330,000
Ecuador	1,000	75,000
Bolivia	350	30,000
Brazil	300	16,000
Colombia	250	4,000
Venezuela	56	2,000

*One many
with another
P...*

3.11 Women. There is a dearth of data on Amazonia, especially disaggregated by gender. Nevertheless, it is clear that women of poor Amazonian families tend to have even less financial security than men. Most Amazonian countries do not recognize the right of women to own land. In rural Andean Amazonia, women are involved in subsistence agriculture and marketing in addition to their household chores. Men frequently migrate to towns during the dry season, leaving women to manage families and farm alone. Women who do migrate to mining towns or commercial centers permanently are typically employed in service occupations as domestic servants, hotel maids, prostitutes and market vendors, earning lower wages than men who typically work in the productive sectors like mining and construction. Amazonian women have less access than men to education. In the absence of Amazonwide data, Bolivia's, where 75% of national territory and population reside in the Amazon, is indicative:⁴ in 1988, 19% of Bolivia's rural men and 43% of rural women were illiterate; as were 3% of men and 12% of women in urban areas. Average infant mortality exceeded 105 per 1,000 (Coordinadora de la Mujer).

C. Environment

3.12 Environmental degradation of Amazonia's rich ecosystem has put Amazonia on the international agenda. The environmental outcry by industrialized countries against Amazonian deforestation to contain global climate warming keeps increasing, although a double standard is applied since developed countries have been mainly responsible for this climate problem. There is a growing consensus in the scientific community that deforestation produces carbon, releases greenhouse gases and depletes the protective atmospheric ozone layer. In the Brazilian Amazon alone, it is estimated that over 10,000 forest fires burn on any given day. The broader environmental losses are complex and wide-ranging -- destruction of biodiversity, erosion of precious germplasm and tropical systems, degradation of soil and water, depletion and loss of wild animal and plant species and tropical hardwoods, and dislocation of indigenous populations. Amazonia has provided the world with many of its most useful and valuable foodcrops, trees and pharmaceuticals, but some of these products have perished and there is serious concern about the potential extinction of other valuable genetic material and information. Amazonian environmental damage is compounded by an inexorable urbanization pattern. As Amazonia urbanizes -- already the majority of its 22 million inhabitants are city dwellers -- urban pollution and industrial wastes exacerbate environmental degradation.

← Soil
conversion

3.13 This section examines diverse causes of Amazonian environmental problems: land speculation and the conversion of forested ecosystems into ranches and agriculture; the forestry industry; road construction; mining and energy development; and illegal activities.

⁴Although Bolivia is overall poorer than other Amazonian countries, its data is still indicative because Amazonian populations in all the countries constitute pockets of deep poverty.

1. Land, Ranching and Agriculture.

- 3.14 Much Amazonian development has been stimulated by national geopolitical concerns to establish frontiers through land occupation and integration. Land speculation in the Amazon has been motivated by numerous factors: the drive for quick profits through agriculture, cattle ranching, mining and timber extraction; high inflation rates making land an important asset; large infrastructure projects -- hydropower, roads and railways; and not least, government incentives for clearing land.
- 3.15 Livestock occupies some 80% of cleared Amazonian lands in countries like Brazil and Colombia. Until recently, livestock was made attractive by fiscal incentives. Moreover, it presented one of the safest investments for laundering profits earned illegally in coca and gold. However, livestock precludes environmentally sound fallow periods required by most Amazonian soils to recuperate land and forests. As the environmental consequences of ranching become apparent, governments are eliminating incentives, but the dynamics of conversion have become entrenched and it continues without subsidies. *not shown.*
- 3.16 Generally, Amazonian soils are inappropriate for colonial-style agriculture which also often precludes the fallow periods required to maintain soil productivity in the Amazon. Agriculture revenues in Amazonia are insignificant except in Bolivia's Santa Cruz Department where 60% of the country's crop value is produced. In the other countries, tropical crops like cocoa, coffee, bananas and grains are farmed on non-Amazonian soils at less risk and lower cost. In general, in Amazonia, crop prices tend to be too low to compete with coca or to allow farmers to make sound environmental decisions. *- def -> Penalties*

2. Forestry and Timber.

- 3.17 Timber extraction in Amazonia has been environmentally destructive because it has not been managed to conserve the forests, other biological resources and wildlife. Wastage of forest products reaches 70% of timber extracted and byproducts like charcoal and energy are often disregarded. Of Amazonia's estimated 4,000 forestry species, only about 50 are exported. Nevertheless, timber revenues for Amazonian countries are important. For example, in Brazil, Amazonian timber output in 1975 supplied 14% of the country's wood production; by 1987, the proportion had increased to 54% (World Bank). Guyana is granting logging concessions to Korean, Taiwanese and European firms to export its wood and wood products. Bolivia intends to increase timber exports fourfold over the next decade. Peru has established 60% of its forestry areas for permanent timber production.
- 3.18 Good forestry practices exist which could provide revenues without harming the environment, based on sustainable extraction of forest

products like food and medicines. These practices need to be propagated through education and extension activities.

3. Roads.

- 3.19 Road construction has been the greatest catalyst to land clearing and deforestation. It is not unusual for one kilometer of road to open up 1,000 hectares of forest land (World Bank). Some countries, like Brazil and Colombia, claim they are controlling road building to reduce its devastating social and environmental effects, while others like Bolivia, situated mainly within the Amazon basin, intend to continue road building as a development priority. Brazil is financing roads into other Amazonian countries to facilitate timber exports through Caribbean and Pacific ports, especially to Japan. For example, the only major road project underway in Guyana, from Lethem at the Brazilian border to Mabura Hill which has an access route to the Caribbean, is being financed by Brazil for about US\$30 million.⁵ To gain access to the Pacific, Brazil is also constructing roads through Peru's Amazon.

4. Mining and Energy.

- 3.20 Amazonia offers vast mineral resources and energy sources. However, mining and hydropower developments have been environmentally destructive and have resulted in conflicts between miners and indigenous populations. Oil and ferrous metal extraction is of increasing importance and of fairly reliable return compared to many other Amazonian options. In Ecuador, 70% of foreign exchange is derived from Amazonian oil. In 1992, to accelerate oil production, Ecuador announced its intention to quit OPEC, to explore new fields in the Amazon, and approved a US development project which partly covers Yasuni National Park, a rainforest natural reserve assigned to the Huaorani natives. Other companies from France, Indonesia, Italy, the UK and US are interested in exploring for oil in Yasuni territory. Oil deposits are also exploited in the Putumayo subregion of western Colombia. In Brazil, state-owned Petrobras is drilling in the Urucu for oil and gas, while simultaneously reforesting in response to environmental criticism.
- 3.21 Ferrous metal extraction includes iron ore, notably from the Brazilian Carajas mine, site of the world's largest iron ore deposits and from Tapaje in Suriname; bauxite from Trombetas, Venezuela, one of the earth's largest aluminum mines; and gold, which is discussed in the next section because more than half its extraction is illegal. These are environmentally controversial activities. Hydropower already supplies 96% of Brazil's electricity and there remains vast untapped capacity elsewhere in the Amazon. There has been severe environmental criticism of past hydropower projects. Charcoal, from tree cutting, is used for

⁵Over 200 km of the total 315 km highway had been completed by the Summer of 1992.

domestic cooking both by poor people and in industrial steel production. Gas is of increasing interest. In August 1992, Bolivia and Brazil signed an accord to build a gas pipeline from Santa Cruz in the Bolivian Amazon to Sao Paulo, Parana, Santa Catarina and Rio Grande do Sul in Brazil. Brazil will enjoy the right to import almost 560 million cubic feet per annum of Bolivian gas through 2030.

- 3.22 Most of the above mining and energy activities have directly or indirectly generated environmental problems through deforestation.

5. Illegal Activities.

- 3.23 Amazonia's biggest commerce is in illegal activities, mostly in drugs, but also in unauthorized gold and exotic animal species. Amazonian countries face the major challenge of stimulating legal activities that can vie financially with coca, unauthorized gold and exotic animals at a time when traditional high employment sectors, such as tin in Bolivia and tourism in Peru, have collapsed. Governments forego potentially significant revenues from illegal operations. *← mahos only*
- 3.24 Illegal drugs, the fifth largest commodity in international commerce, play a crucial financial role in the Amazonian territories of Bolivia, Colombia and Peru and are also significant in Brazil, Ecuador and Venezuela. Peru is the world's major source of coca base, supplying more than 60% of coca leaves. The Fujimori administration is attempting some anti-cocaine measures -- prosecuting money laundering, authorizing the airforce to take charge of civil airports in cocaine-producing areas and arresting traffic to processing labs in Colombia. However, drug planes still travel freely to and from dozens of landing strips, and with the Shining Path controlling much of the coca-producing Upper Huallaga Valley, Government effectiveness is stymied. Colombia is the world's top refiner and shipper of cocaine, supplying about 80% of the final product. It also grows coca, opium poppies and marijuana. Colombia's Government increased illegal drug seizures from 23 metric tons in 1988 to 87 metric tons in 1991. Colombia's drug traffickers are diversifying away from cocaine into heroin, which is eight to ten times more profitable than cocaine by volume. Colombian poppy growers can raise three lucrative crops per annum. Bolivia is the world's second largest source of coca base and a major transshipment point for cocaine. In 1992, the Government launched "Operation Ghost Zone" to seal off the subregion where most of the crop is grown and to prevent chemicals for processing cocaine from reaching the area. During 1992, Venezuela became the subregion's second largest heroin and cocaine transshipment point after Colombia, following the establishment of a new customs union between the two countries. Brazil is also a major transshipment point for cocaine bound for Europe and a marijuana supplier. Ecuador grows some coca leaves and cocaine flights cross its airspace.
- 3.25 Unauthorized gold mining generates some \$2 million daily. Over a million "garimpeiros", or small goldminers, extract gold illegally in the Amazon. Gold deposits occur mainly between the Tertiary sediments

and the Guyana and Brazilian shields, benefitting these two countries and Venezuela. In addition, there have been recent discoveries in the Upper Huallaga Valley and the Madre de Dios areas of Peru, in southern Ecuador, in the Uaupes Guiana territories of Colombia and there are minor deposits in Bolivia. Contraband wildlife has been decreasing in the Amazon, thanks to the International Convention on Trade in Endangered Species, which compels both exporting and importing countries to comply with strict controls. Most unauthorized goods are smuggled out of the countries of origin for sale abroad.

- 3.26 Both the health and environmental consequences of illegal drug and gold activities are dangerous. Illegal coca production accelerates deforestation and sulfuric acid and kerosene are dumped into waterways in coca paste processing. Mercury used in gold extraction poisons Amazonian populations, waters, fish and food. The "garimpeiros" who breathe and eat mercury are killing themselves prematurely. Surrounding populations also suffer health problems. Moreover, spreading AIDS among gold mining communities has received little attention.

IV. INTERNATIONAL SUPPORT

- 4.1 This section sketches international support in the Amazon provided by agencies other than the IDB (discussed in sections V and VI). Given Amazonia's high international profile, a plethora of official bilateral and multilateral external agencies and NGOs are involved in research and investment activities. Most external assistance is uncoordinated. An inventory of which agencies and countries engage in what type of bilateral and multilateral aid in the Amazon is a prerequisite to coordinating assistance. A possible role for the IDB in such an exercise is proposed in Section VI. The varied motivations of external actors are sometimes at odds with each other -- there is desire to both exploit Amazonia's resources and also to conserve them; to reduce global climate warming; and to address poverty. Most external intervention occurs on a bilateral basis. Only a handful of agencies, governments or NGOs have formulated regionwide strategies or projects. As an intermediary approach, a few bi- and tri-national border projects are also being piloted.
- 4.2 Regionwide donor Amazonian initiatives include: (1) Institution strengthening for the TCA through seconding external staff from UNDP, Canadian and European governments to the TCA Secretariat Pro Tempore and supporting TCA publications. (2) An environmental study called Amazonia; Cause and Case for International Cooperation (EDRC/IUCN), which from a green standpoint, analyzes for the European Community past exploitation and potential markets for Amazonian resources including iron and steel, gold, bauxite and aluminum, tin, wood and non-wood products and oil and gas. It advocates environmentally sensitive development in close collaboration with local populations. (3) The Cooperative Program on Research and Technology Transfer for the South American Tropics (PROCITROPICOS), sponsored by the Inter-American Institute for Cooperation in Agriculture (IICA), to spread efficient and

sustainable agricultural practices and coordinate research throughout the subregion. Project profiles are under preparation to present to the donor community.

- 4.3 Bi- and tri-national border projects are being piloted as a more manageable and less costly intermediate approach jointly by the Organization of American States (OAS) and Canadian International Development Agency (CIDA). They are studying Amazonian country frontiers to identify investment projects. So far, they are financing cross-border studies along the Bolivia-Brazil, Brazil-Colombia, Brazil-Peru, Colombia-Ecuador and Colombia-Peru borders based on bilateral cooperation treaties signed between the countries. Investments have already been identified to support cross-border zoning⁶ inventories, establish national parks, develop ecotourism, fisheries, waterway transport, and small businesses engaged in harvesting, storage and marketing of local products and rehabilitate degraded ecosystems.
- 4.4 Bilateral Amazon projects are too numerous to list comprehensively but prominent examples are provided. The World Bank has the largest bilateral portfolio. It executes the multinational Global Environment Facility⁷ which contains numerous bilateral Amazonian subprojects: protection of natural resources and biodiversity in each of Bolivia, Brazil, Colombia, Ecuador and Peru; sustainable tropical forestry in Guyana; afforestation in Ecuador; and promotion of energy conservation and biogas in Brazil to reduce global warming. The WB also executes the G-7 Pilot Program to Conserve the Brazilian Rainforest (PPCBR).⁸ Of the many Amazonian country operations directly financed by the WB, significant examples include in Bolivia, a natural gas pipeline to supply electricity to Brazil, and the Eastern Lowlands natural resource management and agricultural production project to promote soya and agro-exports; in Brazil, natural resource management projects in Mato Grosso and Rondonia, and a natural gas development project; in Colombia, a rural development project with roads, schools and health centers for migrant ranchers; and in Ecuador, an environmental technical assistance project to train indigenous people in natural resource management.
- 4.5 UNDP supports a wide variety of Amazonian projects in individual countries ranging from zoning to agroforestry as well as regionwide support for the TCA for institution strengthening and research. FAO is sponsoring Tropical Forestry Action Plan initiatives in most of the

⁶The purpose of zoning is to inventory Amazonian human, economic and ecological resources to guide policy making. Zoning, like good policies, is a prerequisite but not sufficient for improved Amazon development. Rigorous policy enforcement must follow. Zoning tools include ground mapping, satellite imagery and sociological investigation. Biological, geological, climatic, social and infrastructure data are systematically collected and analyzed. Zoning is already underway in scattered Amazonian areas with external funding.

⁷GEF projects are supported by 25 nations and co-financed by the IDB, UNDP, the World Bank and other agencies. The Amazonian projects cited are estimated to cost almost US\$200 million.

⁸Of the US\$1.6 billion requested by the Brazilian Government for the PPCBR, US\$250 million was approved in 1991 as Phase One.

Amazonian countries. UNICEF and other international agencies also sponsor Amazonian projects.

- 4.6 Among government agencies, USAID concentrates assistance to Amazonian countries on countering drug production and trafficking in Bolivia, Colombia, Ecuador and Peru and on sustainable forestry in a number of countries. Brazil, otherwise ineligible for US assistance because of its relatively high average income, receives US funds channelled through the PPCBR, to curtail global climate warming. Canadian aid includes support for environmental, forestry and mining activities, mostly through technical assistance. CIDA is financing an extractive reserves project in Brazil. Germany, the Netherlands, Switzerland and the UK also support environmental and zoning projects and Japan is expanding its assistance in these sectors. Japan is also financing roads and extracting timber and other resources. Government research centers like the US Smithsonian Institution and the UK Kew Gardens, and large international environmental NGOs like the Nature Conservancy, the World Resources Institute and the World Wildlife Fund sponsor projects to catalog and protect Amazonian species, study global climate changes, and establish nature reserves and debt-for-nature swaps. A vast number of environmental NGOs conduct bilateral activities in the Amazon, or lobby industrialized countries to reduce Amazonian "exploitation".
- 4.7 These are only examples in the spectrum of international initiatives. With such a multitude of countries and agencies supporting separate Amazonian operations, especially bilaterally, effective donor coordination has been elusive. Steps toward achieving it are proposed in Section VI.

V. PAST IDB ACTIVITIES

- 5.1 This section briefly summarizes key IDB activities in the Amazon since 1975 as background to the Bank's future strategy for the subregion proposed in Section VI. A more detailed description is presented in Annex I. It is accompanied by Table 1 which lists past IDB projects and their impact as well as operations approved and in the pipeline.
- 5.2 Section III argued that past agriculture and infrastructure projects like roads and mining precipitated Amazonian social and environmental destruction. Lacking foreknowledge of these negative consequences, the IDB and other donors and governments financed such activities in the past. Past Bank loans have generally been bilateral in scope, either targeting a given country's Amazonian territory specifically or covering it through nationwide projects. Since 1975, roads were the main focus of Bank Amazonian financing, including four projects in Bolivia, three in Brazil and one in Peru. In Peru, the Bank also supported two mining operations and a project to reinforce an oil pipeline and curtail leakages into surrounding soils. Peru also received IDB assistance for two rural development projects. The Bank also supported a project in Guyana to exploit forestry resources in its Amazon territory.

- 5.3 However, the nature of Bank assistance to Amazonia is changing to reflect sensitivity to the social and environmental effects of traditional infrastructure and rural development operations in the Amazon. The Bank is reducing exposure in these sectors and increasing it in projects to conserve the ecosystem, use natural resources sustainably, protect indigenous communities and improve the welfare of Amazon populations. These objectives have sharpened since the 1990 founding of the Bank's Environment Protection Division. For example, in 1992, the Board approved an environmental Technical Cooperation to assist Brazilian NGOs and communities to sustainably extract natural resources and halt deforestation. Commercial products like the Brazil nut bar and Cupuacu punch will be popularized through the project. Where "seringueiros" or rubber-tappers lack land titles within project boundaries, the Government will buy the territory they occupy and contract it to tappers' associations which will lease it to the seringueiros.
- 5.4 Other recent Technical Cooperations and Small Projects also reflect the Bank's new approach. A 1991 TC supported preparation of the TCA publication for UNCED, Amazonia Without Myths. Another 1991 TC is financing the TCA's System of Information on the Amazon (SIAMAZ) through establishing a computerized data network among numerous institutions. Indigenous populations throughout Latin America and the Caribbean will be supported through two Bank TCs, one approved in early 1993 establishing the Fondo Indigena headquartered in La Paz⁹ to finance small development projects proposed by indigenous peoples and the other the 1991 Instituto Indigenista Interamericano headquartered in Mexico to support native research and culture. The Bank also provided a Small Project and a TC to Venezuela in 1988 for its Centro de Education y Promocion de la Autogestion Indigena (CEPAI), to Colombia in 1990 to prepare its National Forestry Action Plan and to Bolivia in 1991 to undertake economic-ecological zoning to guide sustainable development of the Amazon.
- 5.5 Although these TCs and Small Projects demonstrate increasing sensitivity to social and environmental consideration, other new operations may generate controversy, like the highway project approved in late 1992 transversing the Bolivian Amazonian to the Peruvian border.

VI. AN IDB STRATEGY

- 6.1 Scope. While supporting subregional integration is a general Bank objective, it has been easier to pursue it in subregions like the Caribbean and Central America where governments have developed trading blocs. Without such arrangements among Amazonian countries, commercial integration is not a current objective. Rather, sustainably developing the fragile Amazonian ecosystem and improving the social welfare of its

⁹Agreed at the July 1992 Iberoamerican Summit. Spain, the Summit host, and other developed countries will cofinance the Fund with the Bank.

inhabitants are the paramount goals. To achieve these difficult objective requires that the eight Amazonian countries adhere to unified policies to sustainably develop their Amazon territories.

- 6.2 To support the objective of sustainable development of Amazonia, this paper recommends that the Bank pursue a two-pronged approach: at the subregional level, the Bank should provide support for institution strengthening of the TCA, and at the bilateral level, the IDB's entire programming process -- from ISEs, through CPPs, PMPs, programming missions, PMRs and other dialogue with each of the eight countries -- should ensure that policies and investments conform to the strategy proposed in this paper. Only through such a consistent approach, pursued both subregionally and bilaterally, can the Bank genuinely assist the Amazonian countries in their goal of achieving sustainable development.
- 6.3 Future Bank assistance for Amazonia should directly address the three greatest constraints to sustainable development identified in Section III: institutional, social and environmental. In response, the following discussion proposes Bank support for institution strengthening and policy reforms; and for social and environmental improvements through funding investments and research.

1. INSTITUTION STRENGTHENING, POLICY AND LEGAL REFORMS, AND COMMUNITY INVOLVEMENT

- 6.4 TCA Institution Strengthening. The fundamental requirement for a unified policy to sustainable development within Amazonia is the unequivocal commitment of the eight sovereign countries. They have repeatedly stated this intent and established the TCA to achieve it. Although the TCA has been extremely weak historically, if strengthened, it remains the most promising mechanism to promote and ensure this unified approach. Therefore, this paper recommends that the IDB provide institutional strengthening to the TCA with the goal of transforming it into an effective institution capable of influencing the subregional members to adopt and enforce a common agenda. Other external agencies have supported the TCA previously, without coordination, through seconding external staff to the TCA secretariat pro-tempore and/or financing the production of documents. A serious institutional overhaul has not been attempted.
- 6.5 Recently,¹⁰ the TCA requested Bank support for institution strengthening. Given the coincidental timing of this request with the preparation of the IDB's first subregional programming paper for Amazonia, it is appropriate and propitious for the Bank to respond positively. This paper proposes as a first step that the IDB finance a detailed diagnostic study of TCA human and financial resource needs to determine how best to pursue institution strengthening and coordinate

¹⁰At a meeting of donors hosted by the TCA Secretariat Pro-Tempore in December 1992 attended by the Bank's representation in Quito.

foreign assistance. Following completion of this study, the Bank would assist the TCA to undertake the necessary measures to become an influential body, such as establishing a permanent secretariat with a permanent staff, replacing the temporary, ad hoc arrangements of past years which kept the TCA weak.

- 6.6 To facilitate coordination of now scattered and duplicatory external assistance, the IDB would assist the TCA to conduct a comprehensive inventory to identify all sources of international finance for bilateral, cross-border and multilateral activities in the subregion.
- 6.7 It is also proposed that the Bank support institution strengthening bilaterally, through all country projects affecting the Amazon, to ensure that policies and legislation are enforced. This bilateral institution strengthening should be concentrated at the local level where the impact would be greatest. Local enforcement staff working in Amazonia need to be augmented, they need training in forestry management and pollution regulations, and equipment and vehicles, including boats.
- 6.8 Policy and Legal Reforms. This paper has repeatedly cited the negative social and environmental effects of some past Bank-supported activities in Amazonia, notably road construction, ranching and migration. Government fiscal incentives encouraged these activities. The Working Group (and the CAM?) therefore recommend to the Programming Committee that the Bank no longer finance these activities for Amazonia and that the Bank encourage the countries to eliminate these incentives. At the same time, possibly through the TCA institutional support proposed above, the IDB could assist the subregion to ensure that Amazonian natural resource management policies and legislation in the eight countries are compatible. Refining the TCA's covenants to facilitate achieving sustainable development might also be warranted if identified in the diagnostic study.
- 6.9 Community Involvement. To improve Bank support for the subregion, all future operations should incorporate a consultative approach with local populations, governments and NGOs including indigenous groups. This need has not received sufficient attention in the past. Grassroots consultations may provide the only hope to successfully confront entrenched economic interests pursuing socially and ecologically harmful activities. OK
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2. INVESTMENTS AND RESEARCH OPERATIONS

- 6.10 All Bank instruments, including TCs,¹¹ small projects, pre-investment activities, and investment and sector loans, are appropriate vehicles for Bank support of operations in Amazonia. While most operations would be bilateral, the Bank should also consider financing border integration through the bi- and tri-national border projects being prepared with

¹¹ Additional non-reimbursable TC funds need to be raised by the Bank to support Amazonia and other regions and countries.

CIDA and OAS support and the regional PROCITROPICOS initiative prepared by IICA.

Poverty and the Social Sectors

- 6.11 Section III described the deep poverty of indigenous and other Amazonian populations. Given the dearth of data on Amazonia's poor, the research section below proposes a subregional diagnostic study to collect and analyze data identifying where Amazonia's poorest groups live and their social indicators. Future Bank country studies on poverty should also address Amazonia's inhabitants. Meanwhile, where poverty is obvious such as in cities and rural malarial areas, the Bank should target social sector interventions to develop human resources in Amazonia consistent with R8 priorities, without awaiting the results of this study. Bank projects to reduce Amazonian poverty should include:
- 6.12 Preventive health care, nutrition, water supply, sanitation and housing, especially for burgeoning urban areas, where the majority of Amazonians already live, although scattered rural populations should also be targeted. The Bank has already prepared a water supply and sanitation project for Belem, Brazil's main Amazonian port city. Leticia, Colombia, Iquitos, Peru and Santarem and Manaus, Brazil are examples of other Amazonian cities badly needing such services. Other environmental services to manage solid waste, clean rivers and control motor vehicle, noise and air pollution should be supported.
- 6.13 Education, training and extension to spread literacy and to develop human capital as the basis for improving living standards. These activities would teach the value of conserving trees, of sustainably exploiting renewable resources for commercial value and of sound agroforestry combining traditional and modern techniques. Without education, training and extension, it will be impossible to change behavior in the Amazon. Amazonian schools need to be expanded and improved, social and environmental content need to be introduced into their curricula and training and extension networks need to be developed throughout the subregion.
- 6.14 Addressing Poverty Outside the Amazon. Amazonia's social problems cannot be solved without braking migration of the poor from other subregions like the Andes and the Brazilian Northeast. As Section III demonstrated, poor migrants introduce unsustainable slash and burn agriculture, displacing indigenous communities and in the end hardly improving their own welfare. This tragic pattern could be repeated elsewhere: for example, in Guyana, where the Brazil-financed highway accessing the Caribbean, once completed, could lure poor coastal populations toward the Amazon. Bank support for social and employment projects in the Amazonian periphery, therefore, may provide the best assistance for the Amazon by preventing the continuous migration of the poor from elsewhere.

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Economic and Natural Resource Management Projects

- 6.15 Zoning (footnote 6). An IDB Technical Cooperation approved for Bolivia in 1991 is providing the Bank's first discrete support for zoning. Given that careful zoning is a prerequisite for sustainable development, more zoning projects should be considered by the IDB. However, since other donors are supporting zoning projects and widespread zoning could risk diverting scarce skilled manpower from other crucial activities like enforcement, Bank assistance should be selective. While zoning operations or project components financed exclusively by the Bank could be supported, the IDB should also consider co-financing the OAS/CIDA bi- and tri-national border zoning exercises.
- 6.16 Safe Gold Mining. Simple, appropriate technology exists to eliminate mercury poisoning. It permits noxious mercury fumes burned in the gold extraction process that intoxicate rivers and air to be captured under a ventilator hood and recycled safely. A Brazilian company already produces this insufficiently used technology inexpensively. Bank operations could provide this technology to "garimpeiros", small, poor goldminers, to improve their health and the environment. Project success would depend on complementary education and extension work, through media broadcasting and other methods to explain the health, environmental and economic advantages of this technology (Dourojeanni & Pádua).
- 6.17 Improved Use of Cleared and Abandoned Land. Restoring the productivity of the 80-100 million ha of already cleared land, of which over 60% has been abandoned, should be a priority investment for the Bank. Technologies to reverse soil degradation have been developed by farmers and researchers, including agroforestry such as coffee and cocoa, forestry combined with pastures, and reforestation. New methods, assisted by USAID, have been tested in Peru's Palcazu Valley to stimulate natural regrowth. Indigenous populations, for example, the Kayapo in Brazil, simulate forest regeneration through agricultural practices combining controlled burning with fallow periods to ensure soils never become bare, parched or eroded. These and other ways to revitalize abandoned lands should be financed through Bank-assisted projects.
- 6.18 Good Forestry Management. Likewise, technology exists to sustainably extract timber. For example, Suriname's experiments with timber extraction through managing the quantity, periodicity, and selectivity felled per hectare has ensured that soil nutrients and the best stock of trees are preserved while at the same time providing income from high quality timber. Experiments in Brazil are also showing good results. This type of sustainable economic forestry could be spread throughout the Amazon through Bank investment projects.
- 6.19 Extraction of Renewable Resources. The Bank's Extractive Reserves Technical Cooperation for Acre, Brazil, will be an excellent pilot. Geographic and product coverage should be extended through other Bank-assisted projects in Amazonian countries to expand ecologically-sound extraction of timber, nuts, rubber, fruits, medicinal plants, foods and

fisheries as attractive economic activities. Ensuring local and international demand through sophisticated marketing would be an essential component.

- 6.20 Ecotourism. Ecotourism is a rapidly growing segment of the expanding travel and tourism industry (FT) with tremendous foreign-exchange earning potential in the Amazon. Breathing Amazon air, watching and listening to jungle birds and animals, examining exotic flora and fauna, boating down the Amazon river under a dense tree canopy passing indigenous community settlements accompanied by a knowledgeable guide, appeals to many adventure tourists. All eight countries are attempting to develop Amazonian tourism, mostly through private sector initiatives. While Brazil has already done the most, with Manaus and Belem as launching sites, the other countries are also attempting to develop Amazonian ecotourism but lack facilities. Success will depend on expansion of all types of infrastructure from airports to sanitation and marketing campaigns. The Bank should support infrastructure installation with strict environmental standards and provide technical assistance for marketing to expand ecotourism in Amazonia.

Research

- 6.21 Research, to identify the needs of Amazonia's poor and understand better how Amazonia's physical resources can be used and sustained, should be a Bank-supported priority. Additional external technical assistance to co-finance research should be sought by the Bank. Local expertise for conducting research within Amazonian countries is abundant. Funding for external consultants is unnecessary. The scientific research topics proposed below could be packaged together into one or more IDB Technical Cooperations or projects, some could be supported through financing IICA's PROCIPROPICOS project and some through co-financing with other agencies. A separate operation to disseminate research findings and equip institutions is also proposed. Finally, a TC is recommended to facilitate donor coordination. Proposals have been made by international environmental organizations that the IDB finance research to determine what vegetative cover mix and rainfall patterns are necessary to prevent global warming. However, since this is a controversial topic from the viewpoint of national sovereignty, it is not included here. Topics recommended for research support include:
- 6.22 Poverty Diagnostic. Poverty in Amazonia has never been systematically studied to determine where it is greatest and its particular features among different groups. The Bank should finance a subregional study, possibly for the TCA, to identify where poverty is concentrated and social indicators such as the educational attainment and health and nutrition status of Amazonians as well as access to social services. Such data will permit the Bank to target poor Amazonians in future social sector operations.

- 6.23 Species Protection. Identifying and cataloguing animals, insects and germplasm, seeds and genetic resources of major economic plants to protect important species.
- 6.24 Biodiversity. To maintain biodiversity, determining which plants, animals and insects should be designated for preservation.
- 6.25 Agroforestry/Cropping Models. Identifying practical models for Amazonian communities to live sustainably, combining native with modern agroforestry and cropping techniques such as the circular farming technique in Peru (Dourojeanni). Native land use patterns offer valuable lessons.
- 6.26 Forestry Market Analyses. Analyzing renewable Amazonian products that use rather than destroy the forest to determine the scope for local, domestic, subregional and international sales, particularly for extractive resources like rubber, Brazil, macademia and other nuts, fruits and medicinal and fiber plants and determining their financial and economic competitiveness with coca.
- 6.27 Aquatic Technical and Market Analyses. Given the high nutritional value of river and aquaculture fish and seafood, analyzing how to maximize their economic value without depleting stocks.
- 6.28 Mining. Developing appropriate technology to extract minerals and hydrocarbons without damaging the ecosystem.
- 6.29 Support to Research Institutions. Although within Amazon countries, there already are competent scientists performing relevant research, many work in isolation, unable to disseminate their findings across the subregion. Their output needs coordination and distribution both to avoid duplication and to improve social and environmental policies. Moreover, their research is conducted mainly in poorly equipped facilities, lacking basics like laboratories, libraries and office equipment. Bank assistance and better coordination of external financing could support publication and dissemination of Amazonian research findings and equip research institutions.

VII. CONCLUSION

- 7.1 The scope for bank assistance for Amazonia is enormous. Optimizing it in the goal of achieving sustainable Amazon development will depend on:
- educating people to change behavior and governments to alter incentives to reward socially and environmentally constructive activities;

- establishing viable institutions to monitor and enforce policies and legislation; and
- addressing poverty in other parts of Amazonian countries to stem the flow of poor migrants seeking a mythical Amazonian El Dorado in vain.

7.2 This programming paper proposes that the Bank invest in strengthening the TCA at the regional level and in social, economic, natural resource management and research projects, primarily, although not exclusively, at the bilateral level.

7.3 Any IDB financed activity must conform to the "New Amazon Ethic" prescribed in AWM. This ethic is based on selecting projects through consultation with Amazonian inhabitants, fair compensation to indigenous people for commercial extraction of Amazonian products, and repatriating any scientific information derived abroad from analyzing Amazonian resources. This ethic establishes the appropriate framework to sustainably develop the Amazon through improving the welfare of its people.

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THE IDB AND THE AMAZON BASIN

INTRODUCTION

Since 1960, the IDB has assisted the Amazon nations in their quest to develop and integrate the Amazon Basin into their national economies. Until 1975, IDB funds reached the Amazon primarily through multisectoral global credit projects, such as the US\$190 million agroindustrial development loan to the State of Mato Grosso, Brazil in 1967. Although global loans continued to be provided for the region after 1975, specific sector projects predominated, particularly for infrastructure like transport and mining. -Since the establishment of the Environment Protection Division in January 1990, the Bank has increased the number of operations to promote conservation of the Amazonian ecosystem, the sustainable use of its resources, the protection of its indigenous communities, and the social development of all its inhabitants. For example, recent Bank project commitments include assistance to Extractive Reserves in the State of Acre, Brazil, and Indigenous Communities in Venezuela. This annex surveys and analyzes major Bank interventions in the Amazon since 1975¹. Table I lists projects and technical cooperations, amounts funded and brief statements on their impact. Key operations affecting the Amazon have been included in this RPP; however, it was not possible to inventory every nationwide sector nor microenterprise projects touching the region.

OPERATIONS

TRANSPORTATION. The IDB financed more Amazon projects in this sector than in any other. Bank investments paved and constructed a number of roads to support Amazonian countries' objectives to develop the region, provide year-round access, improve communication with major consumer cities, expand the agricultural frontier and encourage settlements. Unfortunately, road construction caused unforeseen social and environmental devastation. Roads, and the settlers they attracted, destroyed many indigenous communities who were displaced from their land, killed in confrontations and by diseases transmitted by the migrants, or absorbed into the outside world's culture. Roads also precipitated the destruction of tropical forests because settlers slashed and burned vast stretches of land to establish cultivated fields and grasslands for cattle. With inappropriate soils for agriculture and ranching, these degraded lands have been abandoned within several years.

In Brazil, in 1981, the Bank financed a project in the State of Mato Grosso for US\$207 million which constructed and improved a total of about 1,115 kms of roads, including highways BR-316 and BR-0070. Highway BR-316 runs through the center of Mato Grosso state from south to north, connecting it with the State of Pará. The northern part of this road, paved with IDB loan resources, is located in the Amazon rainforest. Highway BR-0070, cutting across the Meruri colony, is located a short distance from the Sangraduro and San Marcos Reserves.

High rates of deforestation were recorded, especially around the area of influence of highway BR-316. While rehabilitation of highway BR-0070 improved

¹Based on the Bank's ex-post evaluation records of completed operations and projects and TCs in execution and in the pipeline.

communications, and benefited the indigenous populations to some extent by facilitating the marketing of their products, it also negatively impacted on the environment and indigenous communities. Indigenous lands not previously demarcated legally were expropriated by farmers. Furthermore, intensified commercial and recreational fishing resulting from the influx of new settlers reduced the fish stock which constitutes an important component of the natives' diet. Malnutrition and health problems among natives also escalated as a result of attempts to convert them from hunters to monoculture rice cultivation. Exposure to colonial lifestyle spread sexual diseases and alcoholism in indigenous communities.

In 1985, the Bank approved a project for US\$58.5 million to finance paving a 502 km stretch of highway BR-364 between Rio Branco in Rondonia and Porto Velho in Acre. This project included a Definitive Action Plan (DAP) to conserve the environment and natural resources and protect and develop indigenous populations through the Environment and Indigenous Community Program (PMACI). Protected areas such as ecological stations, conservation units and extractive reserves were to be created. Indigenous lands were to be demarcated and education and health services were to be provided. Unfortunately, implementation of these programs was delayed while road building proceeded because of a) inadequate counterpart funds, b) weak executing agencies and c) lack of continuity of government administrations. Migration, deforestation for cattle ranching on inappropriate soils, and displacement of indigenous peoples and rubber tappers took place.

In Bolivia, the IDB has also supported the government's objective to develop the Amazon through road construction. Funds were devoted to the rehabilitation and construction of roads which connected major urban cities like Cochabamba and La Paz in the highlands, and Santa Cruz in the lowlands. In addition, in 1976, the Bank financed sections of the Beni Highway aimed at developing and integrating the Department of Beni, a potentially rich area for agricultural activities and cattle ranching. A first project included the stretch La Paz-Cotapata and bridges for US\$45 million. In 1984, the Bank's US\$53 million National Transport Program financed construction of additional bridges, a 42 km stretch of highway between Quiquibey and Yucumo and feasibility studies and final designs of the La Paz-Puerto Salinas highway as part of the Beni Highway project.

In 1978, the Bank approved a US\$86 million loan to finance the construction of a road between Yapacaní and Chimore along the Cochabamba-Santa Cruz Highway. Unfortunately, there were severe negative impacts on the environment and indigenous communities -- the Yuqui and the Yuracares -- caused by tree cutting and the influx of settlers facilitated by this highway. Retroactive steps to protect the environment and these indigenous populations were taken in the 1987 US\$81 million rehabilitation project of the Cochabamba-Santa Cruz Highway. This project includes the establishment of forest reserves and a wildlife sanctuary, protection and conservation of the Amboro National Park and of the Upper basins, and provision to the Yuquis and Yuracares of medical services, agricultural technology and land demarcation. However, settlers continue to infiltrate the Park pending determination of its boundaries and colonizers and timber companies to deforest protected areas and poach game animals important to the native diet.

The Bolivian government recently requested Bank support for the Border Corridor Integration project for US\$190 million to integrate Beni and La Paz with Peru through highway construction and upgrading. Other prospective cofinancers are Germany, the Corporación Andina de Fomento (CAF) and USAID. The project would integrate Bolivia's productive areas with local and external markets and provide tourist access to historical and cultural sites. Bolivia, which possesses no outlets to the Pacific, would gain access through Peruvian ports. To mitigate potential negative environmental impacts, especially of the Cotapata-Santa Barbara road through the Amazon basin, a conservation unit to protect natural resources in the area of influence would be created.

In Peru, IDB participation in transportation has also been directed towards integrating the Amazon basin into the national economy. In 1976, the IDB financed reconstruction of the Olmos-Corral Quemado Highway for US\$37.6 million. Integrating the Departments of Cajamarca, Amazonas and San Martín, all located in the Amazon region, the highway constitutes Peru's only northern coastal link with the interior tropical rainforest. To extend this highway, the Peruvian government is proposing to construct a 75 km road from Corral Quemado to Ayar Manco. It would reach the banks of the Marañón river at the town of Saramerisa, where navigation conditions are suitable for the construction of a port and it would enable communication between the Amazon region and the Pacific coast via both the Amazon and Marañón rivers, connecting the Peruvian port of Paita with Belem in Brazil. This road is desirable to Brazil as a Pacific outlet to facilitate access to Japanese markets.

INTEGRATED DEVELOPMENT. In 1982, the IDB financed a US\$46 million integrated development program in the Valle del Pichis located in the center of the Peruvian Amazon rainforest. Its various aims included regulating migration to the region, expanding the agricultural frontier, promoting "orderly" economic and social development and "rationally" using natural resources. The project constructed 57 kms of the Marginal Jungle Highway, the main access road to this region. Another integrated development program, the Jaen-San Ignacio-Bagua, approved in 1983 for US\$43 million, covered about 16,000 km² in the northeastern Peruvian Amazon rainforest. This program promoted agrolivestock, forestry, land tenure regularization, education and feeder roads.

MINING. Rich in minerals such as tin, copper, iron, phosphates, cassiterite, bauxite and hydrocarbons like oil, gas and petroleum, the Amazon countries have exploited these resources with IDB financial support. Through global credit, multisectoral and industrial projects, substantial Bank funds were directed towards oil, gas and mining activities in cities like Potosí in Peru, La Paz, Oruro and Cochabamba in the Bolivian highlands and Santa Cruz in the Bolivian lowlands.

In Peru, in 1976, the Bank approved a US\$33 million loan for a project to expand the Cobriza copper mine and install a water treatment plant for the Cerro de Pasco Iron Mine. Unfortunately, construction of the treatment plant intended to prevent contamination of the San Juan and Mantaro rivers never took place as additional financial resources were needed to complete the Cobriza Mine expansion. The Mantaro River, an important tributary of the Amazon, has become highly contaminated with iron wastes discharged by the mining operations.

In 1983, the Bank financed a geophysical exploration project for US\$30 million in the northeastern-central Peruvian rain forest. Because it was exploratory, there were minimal negative effects. The IDB, in 1984, also financed the reinforcement of 1,158 kms of the Peruvian Northern Pipeline which transports oil from fields in the Amazon Basin to the Bayovar maritime station under a 300 km stretch of fragile marshlands. The project contains pipeline spills which could have had devastating effects on the Amazon.

INDIGENOUS, EXTRACTIVIST AND OTHER GRASSROOTS POPULATIONS. Protection of indigenous populations has become an IDB priority. Preventing the further extinction of many Amazon indigenous communities by encroachment of settlers on their lands and diseases brought by newcomers is an important Bank goal. To meet this objective, the IDB is supporting the establishment of the Instituto Indigenista Interamericano, headquartered in Mexico, through a US\$30,000 Technical Cooperation. This regional institution will provide funds for the economic, cultural and social development of indigenous communities in Latin America and the Caribbean. The Bank just approved another US\$30,000 Technical Cooperation to create the Fund for the Development of the Indigenous People of Latin America and the Caribbean (Fondo Indigena), headquartered in La Paz, Bolivia. It will support projects initiated by indigenous communities throughout the region, primarily acting as a clearinghouse to channel mainly bilateral financing, as well as its own resources, to beneficiaries. Land recognition and rehabilitation, training and cultural preservation will be emphasized.

Like the indigenous communities, the extractivist populations of the Amazon are continuously being displaced from their lands by cattle ranchers and farmers. To protect and increase the standard of living for those who sustainably exploit forest resources, in 1992, the Bank approved a project for US\$1 million to assist several extractive reserves in the State of Acre, Brazil. Because the prices for natural rubber and Brazil nuts have declined steeply, this project aims to develop production and markets for alternative plants and animal products and because extractivist populations have little access to social services, it aims to establish education and health facilities. On the production side, a survey to identify medicinal plants will be carried out, marketing cooperatives will be established and roads to markets will be improved. On the social side, construction includes ten schools and eight health dispensaries. About 44 teachers and 20 health care workers will be trained.

The establishment of democracy in most Amazonian countries has stimulated an increase in the number, participation and influence of non-governmental organizations (NGOs). In 1992, the Bank approved a loan for US\$22 million to the National Environment Fund of Brazil to support projects proposed by grassroots NGOs, other community groups, universities and municipalities as well as federal government agencies. These projects will address water, air and soil conservation problems, increase local awareness of environmental issues and create conservation units. The fund is premised on the principle that participation of grassroot sectors is key to the protection and sustainable use of Amazonian natural resources.

ENVIRONMENT, WATER SUPPLY AND SANITATION. Because of rapid and disorderly migrations to Amazon cities like Manaus and Belem in Brazil and Iquitos in Peru, sanitation and health problems severely affect their populations. Diseases of poverty, such as malaria, cholera, yellow fever and Leishmaniasis, are common. To address these problems, the Bank in 1991 approved a loan for US\$145 million to finance a drainage, road, water supply and sewerage project in Belem's low lying areas. This project targets the Una Basin area which is continuously flooded by heavy rainfalls and high tides. It will benefit low income populations who are presently living in deplorable conditions. About 1,400 people will be resettled and will receive environmental education.

The government of the State of Amazonas in Brazil recently requested IDB support to finance 70% of a proposed sanitation and environmental clean up project of the "Igarapes" (small rivers) around Manaus. Through the elimination of debris and garbage thrown into the Rio Negro, water treatment and creation of green areas, the project would directly benefit low income groups living on the banks of the "Igarapes" and indirectly benefit the entire population of Manaus.

FORESTRY. In 1978, the Bank cofinanced a forestry project in the Upper Demerara-Essequibo Basin of Guyana.² The project aimed to expand export of marketable wood by promoting lesser known species internationally, increasing domestic wood supply, and penetrating pristine forests for future development. Logging activities took place on 152,000 ha, and a sawmill³, power plant and township for staff were constructed.

In 1990, the Bank, together with FAO, UNDP, Holland and Germany, assisted Colombia in the preparation of its National Forestry Action Plan (NFAP). NFAP aims to protect Colombia's natural forests from further destruction, arrest degradation of soils, promote forest based industry and reduce poverty among communities which depend upon forest resources. Complementing this project, the Bank is presently financing the preparation of a National Environmental and Forestry Action Program to address environmental problems in the Colombian Amazon.

EDUCATION AND RESEARCH. While the Bank has supported numerous primary, secondary and university level education projects in Amazonian countries, they seldom have benefitted Amazonian populations. Illiteracy rates within the region remain high and curricula has not been consistent with Amazonian culture and environment priorities but has been directed towards life in non-Amazon municipalities.

To disseminate Amazonian culture, increase knowledge of the region and formulate strategies for its sustainable development, the Association of Amazon Universities (UNAMAZ) was created in 1987 encompassing 57 training and research centers, universities and higher education institutes. Among its most significant projects is the Amazon Information System (SIAMAZ), financed with an IDB Technical Cooperation approved in 1991 for US\$877,000 to establish a

²Of the total project cost of US\$31.8 million, the IDB provided US\$6 million (18.9%); the World Bank, US\$10 million (31.4%); the European Development Fund, US\$7 million (22.0%), and the Government of Guyana US\$8.8 million (27.7%).

³The IDB funds of US\$6 million were directed to the construction of the sawmill.

scientific and technological information network for the Amazon. In 1992, the publication of "Amazonia: Without Myths" (AWM) was supported by a Bank Technical Cooperation for US\$1.7 million. The Bank's Environment Protection Division and UNDP supervised a group of consultants who drafted AWM on behalf of the Amazon Cooperation Treaty. It describes existing conditions and prescribes future strategies for the Amazon. AWM was presented at the United Nations Conference on Environment and Development held in Rio de Janeiro in June, 1992.

ECONOMIC-ECOLOGICAL ZONING. Since the mid-1980's, economic-ecological zoning has become an important development planning mechanism for the Amazon. Through cartographic information and satellite imagery, the region's natural resources are identified, and through sociological investigation, local populations are documented enabling the formulation of strategies to conserve and sustainably develop the Amazon. In 1992, the IDB approved its first economic-ecological zoning project for US\$30,000 for the departments of Beni and Pando in Bolivia. Another zoning operation might be financed by the Bank, jointly with UNDP, as follow-up to the TC which supported AWM.

CONCLUSION

The IDB is increasingly participating in projects to sustainably develop the Amazon region. Through a learning process, from early projects with less consideration for the environment and social groups, today the Bank is paying more comprehensive attention to their protection and improvement.

IDB OPERATIONS AFFECTING THE AMAZON 1975 TO THE PRESENT					
APPROVED PROJECTS					
COUNTRY	PROJECT NUMBER	PROJECT NAME	DATE OF APPROVAL	AMOUNT in US\$	IMPACT ON AMAZON
BOLIVIA	BO-0022	La Paz-Cotapata Highway	1975	45.000.000	Provided access to the Dept. of Beni, extended the agricultural and livestock frontier and encouraged settlements.
	BO-0035	Construction of Chimore-Yapacani Highway	1978	86.000.000	Colonization, disruption of Yuqui and Yuracares indigenous populations.
	BO-0140	National Transport Program (Quiquibey-Yucumo)	1984	53.000.000	Provided access to the Dept. of Beni, extended the agricultural and livestock frontier and encouraged settlements.
	BO-0156	Construction Chimore-Yapacani Highway II	1986	8.300.000	Colonization, disruption of Yuqui and Yuracares indigenous groups.
	BO-0051	Rehabilitation Carretera Cochabamba-Santa Cruz	1987	80.700.000	Benefited Yuqui and Yuracare indigenous tribes: provided medical care, education and demarcation of land (Environmental Protection Plan).
	BO-0090	Corredor de Integracion Beni-La Paz-Frontera Peruana	1992	95.000.000	Encourage settlements.
BRAZIL	BR-0181	Road Building in the State of Mato Grosso	1981	207.000.000	Deforestation, colonization, positively and negatively affected indigenous populations: Meruri colony, San Marcos and Sangradouro Reserves.
	BR-0066	Porto Velho-Rio Branco Road Improvement Project	1985	58.500.000	Deforestation, settlements negatively affected indigenous populations.
	BR-0055	Drainage, Roads, Water and Sewerage Project in Belem	1991	145.000.000	Benefit low income population, improve sanitation.
	BR-0078	Support Program For The Fundo Nacional do Meio Ambiente (FNMA)	1992	22.000.000	Benefit NGOs in their projects to conserve and sustainably use the Amazon's natural resources.
GUYANA	GY-0012	Upper Demerara Forestry Project	1978	6.000.000	Deforestation.
PERU	PE-0015	Reconstruction Olmos-Corral Quemado Highway	1976	37.600.000	Encouraged settlements, linked Amazon Region to the coast.
	PE-0031	Expansion of Cobriza Mine and Water Treatment Plant for the Cerro de Pasco Mine	1976	33.400.000	
	PE-0117	First Stage Integrated Development Project of the Valle del Pichis	1982	46.000.000	Settlements, deforestation.
	PE-0042	Regional Development Program Jaen-San Ignacio-Bagua	1983	42.800.000	Encouraged settlements, agricultural activities, construction of feeder roads, provision of education.
	PE-0128	Geophysical Exploration Project in the Peruvian Jungle	1983	20.000.000	Minimum environmental impacts. Noise disrupted fauna of area.
	PE-0169	Reinforcement of Northern Oil Pipeline	1984	20.000.000	Benefit the part of the pipeline which runs under the Amazon's marshlands as the project will prevent oil leaks which could have disastrous effects on the environment.

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APPROVED SMALL PROJECTS					
COUNTRY	PROJECT NUMBER	PROJECT NAME	DATE OF APPROVAL	AMOUNT in US\$	IMPACT ON AMAZON
VENEZUELA	SP/SF-83-10-VE	Small Project Financing for and Technical Cooperation with the Centro de Educacion y Promocion de la Autogestion Indigena (CEPAI)	1988	593.000	Benefit 700 Amerindians members of APIPROCA and AYEPROCA.
APPROVED TECHNICAL COOPERATIONS					
REGIONAL	ATN/SF-2857-RE	Short Term Technical Cooperation Mission to Develop the Agricultural and Land Use Component Technology of the Amazon Basin Regional Programme	1987	26.000	Evaluate information on the development and application of ecologically sound agricultural technologies in the region.
	ATN/SF-2858-RE	Short Term Technical Cooperation Mission to Develop the Ecology and Rainforest Component of the Amazon Basin Regional Program (AMBAR)	1987	26.000	Analyze, evaluate and summarize information on the development of natural resources and ecological balance of the region.
	ATN/SF-2859-RE	Agricultural Technology and Human Settlements; Information and Institutional Development - Components of the Amazon Basin Regional Program (AMBAR)	1988	30.000	Compile, analyze and disseminate information in agriculture, ecology, institutions and informatics in order for the Bank to formulate a policy for this region.
	ATN-SF-3890-RE	IDB/UNDP Program on the Environment	1991	1.650.000	Follow-up of Our Agenda and creation of "Amazonia: Without Myths."
	ATN/SF-3891-RE	Scientific and Technological Information System (SIAMAZ)	1991	877.000	Establishment of an information network system for the Amazon (Belem).
	ATN/SF-3896-RE	Instituto Indigenista Interamericano in Mexico.	1991	30.000	Benefit indigenous populations in the Amazon and elsewhere.
	ATN/SF-3963-BO	Creation of the Fondo Indigena in La Paz	1993	2.500.000	Benefit indigenous populations in the Amazon and elsewhere.
BOLIVIA	ATN/SF-3678-BO	Ecological-Economic Zoning in the Bolivian Amazon	1991	30.000	Judicial guidance in policy making.
BRAZIL	ATN/TF-3934-BR	Extractive Reserves (Acre)	1992	1.000.000	Benefit extractivists, increase their standard of living.
COLOMBIA	ATN/SF-3514-CO	Preliminary Studies for Colombia's National Tropical Forestry Action Plan	1990	30.000	Aims to protect of Colombia's Amazon Rain Forest, soils and natural resources.
VENEZUELA	ATN/SF-3099-VE	Technical Cooperation to the Centro de Promocion y Autogestion Indigena (CEPAI)	1988	93.000	Increase the socioeconomic standing of the indigenous groups associated with APIPROCA and AYEPROCA.
PROJECTS IN THE PIPELINE					
BRAZIL	BR-0192	Basic Sanitation/Environment Program Igarapes-State of Amazonas	--	70% (IDB) 30% (St. of Amazonas)	Benefit low income population living on the river banks. Improve sanitation and health conditions.
COLOMBIA	CO-0041	National Environmental Program and Forestry Action	--	--	Protect the natural forests - Amazon rain forest.