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Managing the Environmental and Social Impacts of a Major IDB-Financed Road Improvement Project in Colombia: The Case of the Pasto-Mocoa Highway

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This Technical Note was prepared by the Environmental and Social Safeguards Unit (VPS/ESG) of the Inter-American Development Bank (IDB). ESG works to promote the environmental and social sustainability of Bank operations. It collaborates with project teams to execute the IDB's commitment of ensuring that each project is assessed, approved and monitored with due regard to environmental, social, health and safety aspects, and that all project – related impacts and risks are adequately mitigated or controlled. ESG also helps the Bank respond to emerging sustainability issues and opportunities.

This manuscript documents the experience of the Inter-American Development Bank in managing the environmental and social impacts of three Technical Cooperation and one lending projects in connection with improvement of the Pasto-Mocoa road in Colombia, and presents lessons and recommendations on how such impacts can best be identified, assessed and addressed in large ecologically sensitive and socio-culturally diverse areas.

This document was prepared under the supervision of Janine Ferretti, Chief of the Environmental and Social Safeguards Unit (VPS/ESG). The author was John Redwood III, consultant. Insightful inputs were provided by Vera Lucia Vicentini and Maria da Cunha. Editorial support was supervised and provided by Gabriela Infante and Iona Hawken.

Contents

Acronyms

BP	Business Plan
CAF	Andean Development Corporation (Corporación Andina de Fomento)
CI	Conservation International
CO	Colombia
Corpoamazonía	The Corporation for the Sustainable Development of the South of Amazonia
DMI	Integrated Management District
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESMP	Environmental and Social Management Plan
ESMR, or IGAS in Spanish	Environmental and Social Management Report (Informe de Gestión Ambiental y Social)
FIRII	Fund for the Financing of Technical Cooperation Operations for Regional Infrastructure Integration Initiatives
FONPLATA	Plate River Basin Financial Development Fund
ICEL	Colombia Electrical Energy Institute
ICIM, or MICI in Spanish	Independent Consultation and Investigation Mechanism (Mecanismo Independiente de Consulta e Investigación)
IIRSA	Initiatives for Regional Infrastructure Integration
INCO	The National Concessions Authority
INDRENA	National Renewable Natural Resource Development Institute
INVIAS	The National Roads Institute for Non-Concessioned Roads

LPM	Large Project Management
MAVDT	Ministry of Environment, Housing and Territorial Development
NGOs	Nongovernmental Organizations
OPs	Operational Policies
PBMAS	Integrated Environmental and Social Management Plan
PMASIS	Integrated and Sustainable Environmental and Social Management Plan
PO	Operations Plan
PPFR	Protected-Production Forest Reserve
REA	Regional Environmental Assessment
RFPCARM	Protected Forest Reserve of the Upper Mocoa River Basin
RFPPRM	Mocoa River Protected-Productive Forest Reserve
SEA	Strategic Environmental Assessment
TC	Technical Cooperation
TORs	Terms of Reference
WWF	World Wildlife Fund

Executive Summary

The IDB has approved four projects in connection with improvement of the Pasto-Mocoa road in Colombia. The first is a US$ 1.45 million Technical Cooperation grant (CO-T-1038) associated with the final design and environmental licensing for construction of part of this road, approved in November 2006 and signed the next month, and which, as of December 2011, was apparently still under implementation. The second is a US$ 145,000 Technical Cooperation grant (CO-T1142), approved in May 2008 and completed in March 2009 to help Corpoamazonia (the Corporacíon para el Desarrollo Sostenible de la Amazonía) to engage key stakeholders in the design and implementation of sustainable conservation activities in the Alto Mocoa Forest Reserve. The third is a US$ 100,000 grant for another Technical Cooperation project to provide Productive Development Support to Indigenous Peoples in the Sibundoy Valley, (CO-T1166), approved in October 2008 and also ongoing. The fourth and final one to date is a US$ 53 million loan (CO-L-1019) approved in December 2009 and signed in May 2010 for the San Francisco-Mocoa Alternate Road Project – Phase I. As of May 2012, or nearly two and a half years after the loan was approved only US$ 5.3 million have been disbursed for this operation, largely as the result of difficulties in complying with the effectiveness conditions. It has been subject to a claim by indigenous groups to the Bank's Independent Consultation and Inspection Mechanism.

In seeking to identify, assess, and address environmental and social impacts of a new road construction project along a major proposed future cross-continental intermodal transport corridor, the approach supported by the Bank, including a Regional Environmental Assessment (REA), has many positive elements, but also a few shortcomings. The real test, however, will come with the actual construction and pavement of the new 46 km "alternate" road between the towns of San Francisco and Mocoa and implementation of the proposed environmental and social measures to be carried out in advance of and parallel to it. If implemented as planned, over the next few years this new road will significantly upgrade the remaining precarious section of the larger Tumaco-Pasto-Mocoa-Puerto Asís highway located within a complex and dynamic Andean-Amazonian region in southern Colombia near the border with Ecuador, as well as its ongoing "operation" over the coming decades.

While the economic feasibility of this costly road improvement project can be questioned given the volume of additional traffic expected to be generated, it will be essential that the actions described in the corresponding Environmental and Social Management Report (ESMR) are properly implemented and that this process and its results are carefully monitored and supervised by both the Government and the Bank. This should include arrangements to identify and monitor possible indirect environmental and socio-cultural impacts of the new road, as well as of the improved transport corridor connection more generally, including those resulting from induced settlement and economic development, beyond, as well as within, the area that was studied as part of the REA. Should there be non-compliance with the Bank's safeguard (or other) requirements, it is equally essential that adequate steps be taken to remedy this situation in a timely manner.

Beyond these general conclusions and without repeating lessons from other case studies in this series on the environmental and social management of major Bank-financed or assisted road improvement projects in tropical frontier areas Bolivia, Brazil, Panama and Peru, the following additional ones can be drawn from the present exercise:

1. IDB project documents, especially Loan Proposals, should provide greater information about the associated environmental and social management arrangements, including maps of the affected areas.
2. The project's direct and indirect area of influence for purposes of potential direct, indirect and cumulative environmental and social impact identification and remediation should be explicitly defined and indicated in Bank Loan Proposals, together with a clear explanation as to how this area was determined.
3. In cases such as the present one in which a proposed Strategic Environmental Assessment (SEA) is subsequently substituted by a Regional Environmental Assessment (REA), the Bank should clarify in the corresponding project documents why this occurred, as this decision concerns interpretation of its environmental and social safeguard policies.
4. In addition to questions regarding the spatial scope of the REA and resulting environmental and social management plans, there appear to have been substantive and geographical limitations on this exercise; potential cumulative impacts on environmental quality, other than with respect to biodiversity, do not appear to have

been considered, for example on water quality and soil degradation, while the assessment of potential social impacts seems to have been largely restricted to possible effects on indigenous communities.

5. The REA's description of the present nature of the project's area of influence as a dynamic, complex, and problematic active resource agricultural frontier zone characterized by low governability suggests that it will be very difficult to control the additional "development" pressures likely to be induced by the road improvement, together with other interventions, especially outside those areas proposed to come under expanded and strengthened environmental protection.
6. This suggests that what is required is a much broader longer-term regional sustainable development project, in which the road improvement is just one component; such a project should include, *inter alia*, considerable strengthening of local institutions, including department and municipal governments and NGOs, as well as effective land use controls, forest, biodiversity and other environmental protection measures, and the promotion of alternative livelihood activities for the affected populations. In short, it suggests the need to take a multi-sectoral spatial approach to development of the "economic corridor" formed by the Tumaco-Pasto-Mocoa-Puerto Asís axis as a whole, such as that taken in earlier Bank-supported major highway improvement projects in Bolivia, Brazil and Panama. However, taking a broader multi-sectoral approach has been made more difficult as a result of the Bank's reorganization, which has had the effect of complicating cross-sectoral collaboration internally and supporting multi-sectoral projects.
7. This is clearly a high risk Category A operation from the standpoint of its potential adverse environmental and social impacts, as well as one that has involved very high transaction costs with a broad range of client country (and some international) stakeholders in both government and civil society. This being the case, the Bank needs to provide adequate financial resources, management support and other incentives for the sector staff who are engaged in such operations.
8. The Bank should likewise ensure that all significant issues and changes in design that arise, including as a result of interactions with other stakeholders, during project preparation and the same for those that occur during implementation are properly

documented, so that the experience gained and lessons that emerge from how these issues were handled can be made available for the benefit other Bank staff and clients to help guide the planning and implementation/supervision of similar operations in the future.

I. The Pasto-Mocoa Technical Cooperation Project (CO-T-1038)

This operation, which was reported to involve a grant of US$ 1.45 million[1] and has an anticipated total cost of US$ 2.8 million, is described on the Bank's external website as supporting "the updating of the feasibility and environmental studies and also the execution of an environmental strategic assessment and the revision of the engineering designs in order to prepare the program for the execution of the project." As of July 31, 2011, roughly US$ 1.231 million of the grant had been disbursed with a balance of a little over US$ 219,000. The source of this grant is the Fund for Initiatives for Regional Infrastructure Integration (also known as the "Fundo IIRSA"[2]). IIRSA, or the South American Regional Infrastructure Integration Initiative, was created in 2000 during the first meeting of South American Presidents convened by then Brazilian President, Fernando Henrique Cardoso, with the declared objective of promoting the development of "integration infrastructure" to increase the region's competitiveness and generate sustainable and equitable socio-economic development.[3] The IDB, together with the Andean Development Corporation (CAF) and the Plate River Basin Financial Development Fund (FONPLATA), were asked to jointly constitute the Technical Committee to provide support to this Initiative. As both a preliminary "Profile" and a more definitive Operations Plan for this project are available, and there are some significant differences between them, it is useful to briefly examine each one to see how the design of this interesting Technical Cooperation (TC) operation evolved prior to its approval.

A. The Profile

The Bank's "Profile" for this non-refundable TC grant affirms that "the Colombian Government, seeking to develop the southern part of the country through commercial and

[1] Curiously, however, the respective Bank Operations Plan and Technical Cooperation Agreement for this project both refer to a Bank grant of US$ 1.3 million, so it is not clear what the additional US$ 150,000 reported in the Bank's electronic website refers to or what exactly it finances.
[2] Or more formally as the Bank's Fund for the Financing of Technical Cooperation Operations for Regional Infrastructure Integration Initiatives (FIRII).
[3] See Inter-American Development Bank, *A New Continent under Construction: A Regional Approach to Strengthen the Infrastructure of South America – Regional Infrastructure Integration Initiative for South America (IIRSA)*, Washington D.C., 2006. For more on the IDB's role in IIRSA, see Inter-American Development Bank, *Los Diez Años del BID en IIRSA 2000-2010*, Washington D.C., 2010.

economic integration with its neighboring countries and to facilitate access to the Pacific, has prioritized, in the context of IIRSA, the 'Tumaco-Pasto-Mocoa-Puerto Asís-Belém do Pará Intermodal Transport Corridor,' which is part of its Amazonas Axis."[4] This is a true transcontinental east-west undertaking as Belém is the major port city near the mouth of the Amazon River, with the Brazilian portion of this corridor, thus, being formed by parts of this vast river system itself.[5] This axis or "hub," more specifically, according to one IIRSA document, includes parts of Colombia, Ecuador, Peru, and Brazil,[6] and its projects consist primarily of the improvement of roads and "*hidrovias*" (or navigable waterways) in the affected area "in order to establish a firm connection between the Atlantic and Pacific coasts."[7]

The Bank's TC Profile provides the following additional background information and justification both for this specific operation and the associated major road improvement project:

The interregional isolation between the southern border departments of Nariño, Putumayo and Amazonas, as well as of these [departments] with the rest of the country, together with the limited possibilities to develop feasible production alternatives, weak institutional presence and low level of competitiveness of the primary sector, have contributed to convert this region into a scenario in which illicit activities, with high indices of violence in its various manifestations, proliferate. Paradoxically, this same region possesses an enviable geo-strategic position because of its proximity to Ecuador, Peru and Brazil and because it is an integral part of the Pacific and Amazon Basins, whose integration is fundamental; it is in this context that the Tumaco-Pasto-Belém do Pará Corridor acquires significant relevance.

The intermodal corridor consists of road and river segments, as well as maritime and riverine port infrastructures. The highway trajectory consists of the Tumaco-Pasto-Mocoa-Puerto Asís road, of which 67 percent is in rolling terrain and the remaining 33 percent is a mountainous zone, which corresponds to the Andes crossing. The first section corresponds to the 284 kilometer Tumaco-Pasto road, which presents good technical conditions and geometric design; its last 38 kilometers form part of the Pan-american Highway included in a concession contract

[4] Inter-American Development Bank, *Perfil de Cooperación Técnica – Preparación del Programa de Infraestructura Regional – Corredor Vial Pasto-Mocoa (CO-T-1038)*, Washington D.C., July 24, 2006, para, 2.1, pg. 1. My translation. Even though this Profile is dated July 24 on the Bank's website, the document itself states June 22, 2006, as its date.

[5] More specifically, from Mocoa, there is an 80-kilometer road to Puerto Asís, which then connects to the Atlantic Ocean by way of the Putumayo and Amazon Rivers.

[6] For the northern Peruvian-Brazil part of this axis, involving river as well as road transport connections, and the IDB's respective Guarantee operation, see John Redwood III, *Managing Environmental and Social Impacts of Major IDB-Financed Road Projects in Peru: The Case of the Interoceanica/IIRSA Sur and IIRSA Norte Highways*, August 2011.

[7] IDB, *A New Continent*…, op. cit.. pg. 19. This document goes on to say that "this axis is also centered on improving the availability of electricity, which will significantly increase the welfare of the 50 million people who live in the area."

to the Ecuadorian border. The Colombian Government has prioritized the second section – the Pasto-Mocoa road with an extension of 142 kilometers – in its National Road Expansion Program and has solicited technical and financial support from the Bank for preparation and implementation of the project. The Pasto-Mocoa road is divided into four segments -- Pasto-Encano, Encano-Santiago, Santiago-San Francisco, and San Francisco-Mocoa – and the project is expected to be developed in two phases: (i) the rehabilitation of the 67 kilometers in the first three sections, from Pasto to San Francisco, including the paving of 27 kilometers corresponding to the second section, Encano to Santiago, which should require two years starting in 2006 and an estimated cost of US$ 40 million; and (ii) construction of the San Francisco-Mocoa variant, a 47 kilometer extension projected to start in January 2008 with an estimated cost of US$ 150 million that will be financed with external credit for which the Colombian Government has requested the Bank's support.[8]

This document points out that the area of influence of the Pasto-Mocoa road includes "strategic regions of high biodiversity, environmental and geological sensitivity such as the Páramo [Moorland] de Bordoncillo, the Cerro [Hill] of Patascoy, Guamés Lake or Laguna [Lagoon] de la Cocha (RAMSAR[9] site) and the Forest Reserve that protects the upper basin of the Mocao River." In addition, the area houses the Quillacanga "Refugio del Sol" and Inga de Santiago indigenous communities and the mixed-blood small farmers ("*campesinos mestizos*") of El Encanto and Alto Sibundoy.[10] In short, it is a region of very high biological and cultural sensitivity and diversity.

An existing, precarious 78-kilometer road between San Francisco and Mocoa, originally built in the 1930s, is located in a "geologically unstable" area and its very narrow, hilly and winding trajectory has led to numerous fatal accidents, leading it to be characterized locally as "the road of death" ("*carretera de la muerte*"). As a result, in 1999, the Ministry of Environment, Housing and Territorial Development (MAVDT) approved a study of alternate routes between these two towns with an estimated extension of 47 kilometers along the right – or southern -- side of the Mocoa River after an earlier option along the left side of this river had been rejected on environmental impact grounds. In 2002, INVIAS (the National Roads Institute for non-

[8] IDB, *Perfil de Cooperación Tecnica*, op. cit., paras. 2.2-2.4, pp. 1-2.
[9] The RAMSAR Convention, signed in Ramsar, Iran in 1971, is an intergovernmental treaty that provides an action framework of the conservation and rational use of wetlands and their resources.
[10] IDB, *Perfil*, op. cit., para. 2.5 pp. 2-3.

concessioned roads[11] linked to the Ministry of Transport) developed final engineering design studies for construction of this proposed alternate road together with the respective Environmental Impact Assessment (EIA). However, during the licensing process for the associated works in 2005, MAVDT required additional environmental studies, "such as for evaluation of the impacts of the 44 bridges and overpasses, waste dump areas and the use of explosives in environmentally sensitive zones." It also requested a deeper analysis regarding the project's demand for natural resources, specific environmental control measures during the works, contingency plans, impacts on indigenous communities, public participation mechanisms, the project's labor demand, displacement of communities during construction, and compensation programs.[12]

As the Bank's TC Profile observes, however, both the original EIA and MAVDT's subsequent requirements refer primarily to the prevention and mitigation of potential impacts only during construction. Even though it was considered the most favorable alternative from an environmental standpoint, it was recognized, additionally, that the new route "required special care during its design, execution and operation because it passes through the Forest Reserve that protects the upper basin of the Mocoa River, with an area of 34,600 hectares,[13] which is not adequately delimited, nor does it possess a Management Plan." This area also houses the Ingás and Kamsá indigenous groups, even though, "according to the available information, implementation [of the new road] would not directly affect indigenous reserves, or sites of cultural importance."[14]

In this context, the TC would "support the development of the complementary environmental, socio-cultural and economic studies needed to meet the requirements of MAVDT and the Bank's policies," especially those for environment (OP-703), involuntary resettlement (OP-710), indigenous peoples (OP-765), information availability (OP-702), and natural or unexpected disasters (OP-704). The respective Profile went on to affirm that "the studies should

[11] Concessioned roads, in turn, are administered by INCO, the National Concessions Authority. The total length of Colombia's road network is 165,000 kilometers, of which 16,770 km compose the primary network, 80% of which is paved. INVIAS is responsible for 80% of the primary roads.

[12] IDB, *Perfil*, op. cit., paras. 2.6-2.8, pg. 3.

[13] This reserve was created in 1984 at the request of the Colombia Electrical Energy Institute (ICEL) in order to protect the drainage area for a dam for a small hydroelectric plant to be built near Mocoa, although this project never went ahead and was subsequently replaced by a transmission line. Corpoamazonía, or the Corporation for the Sustainable Development of the South of Amazonia, is responsible for administration of the reserve.

[14] IDB, *Perfil*, op. cit., para. 2.9, pp. 3-4. This document also observed that "prior to the preparation of this profile, preliminary consultations, at the level of entities, were made with representatives of these ethnicities, which permits one to foresee that apparently there will be no resistance on the part of these groups to construction of the San Francisco-Mocoa variant."

consider implementation of the variant in a context of integrated sustainable development of the region and maximization of benefits for local populations, including, among others:

(i) revision and complementation of the EIA considering 3 levels of study area: (a) supraregional, in reference to the intermodal Tumaco- Pasto-Mocoa-Belém do Pará corridor, which refers, at a strategic level, to the potential indirect, cumulative and synergistic impacts; (b) the indirect area of influence, incorporating the entire extension of the Pasto-Mocoa road; and (c) the direct area of influence along the right-of-way [‘*traza*’] of the variant;

(ii) a socio-cultural study of the native communities, including the undertaking of community consultations and, if necessary, a specific impact mitigation and development opportunities ‘potentialization’ (“*potencialización*”) plan; and

(iii) an economic feasibility study, including an analysis of the possible traffic dislocations [‘*desvios de tránsito*’], principally of heavy vehicles, from the Pan-american Highway to the Marginal de la Selva, given the expected time and travel distance reductions.”[15]

This TC, in summary, was specifically designed to help the Colombian Government and INVIAS, in particular, to carry out the additional environmental, socio-cultural and economic studies required by national authorities in order to proceed with the licensing and subsequent construction of the alternate San Francisco-Mocoa road, as well as to meet the Bank’s environmental and social safeguard requirements prior to approval of the associated IDB lending operation. The Profile also observed that the Bank had hired three specialized consultants in the areas of engineering, environment, and socio-cultural aspects in order to analyze the available studies and information, undertake field visits and preliminary consultations with some of the key stakeholders, and develop the detailed terms of reference for the technical, environmental and social studies to be financed by the TC.[16] The respective Operations Plan was expected to be sent to the Bank’s Board of Directors for approval in September 2006, but, as noted above, this in fact, occurred two months later than initially anticipated.[17]

[15] *Ibid*., para. 3.1, pp. 4-5.
[16] These detailed TORs were later contained as annexes in the Operations Plan for the TC itself (see below).
[17] IDB, *Profile*, op. cit.., paras. 7.1-7.2, pg. 5.

B. The Operations Plan

The Operations Plan (PO) is dated November 2, 2006, and provides further details with respect to the TC.[18] One important difference with the earlier Profile refers to the TC's cost and financing. While the Profile had anticipated a total cost of US$ 1.5 million and a grant of US$ 1.2 million, in the PO, these figures had increased to US$ 2.8 million and US$ 1.3 million, respectively, with the main increment being in the Government's counterpart contribution that rose five-fold from US$ 300,000 to US$ 1.5 million.[19] This reflects the inclusion of the updated engineering and EIA studies, to be fully funded by the Government, as part of the operation. As these new technical and environmental studies had become a requirement for licensing the road improvement project and, thus, needed to be undertaken in any case, this represents an interesting way of "repackaging" the operation such that no additional counterpart funds were required. Presumably, it was also a way of bringing the Bank into the oversight and supervision of the same, as well as of the components that were to be exclusively financed by the IDB. The purpose of the TC is also stated somewhat differently in the PO:

The general objective of the proposed technical assistance is to contribute to the interregional physical integration of the southern border departments of Colombia, Nariño, Putumayo and Amazonas with the rest of the country and with the neighboring countries of Ecuador, Peru and Brazil. The specific objective is to provide technical assistance to INVIAS to develop the environmental, socio-cultural and economic studies necessary to guarantee the feasibility of the San Francisco-Mocoa variant, integral part of the Pasto-Mocoa Road Corridor.[20]

The main "benefits" identified in the PO were "in promoting the physical integration of the southern region of Colombia with the principal production and consumption centers of the country, conditions will be created for the development of profitable and sustainable production alternatives, thus promoting a greater presence of the State, contributing to minimize the high indices of violence and to improve the quality of life [*'condiciones de vida'*] of the local population." Elsewhere, the PO added that "the principal beneficiaries will be the poor

[18] The corresponding Technical Cooperation Agreement (Inter-American Development Bank, *Convenio de Cooperación Técnica – Preparación del Proyecto de Infraestructura Regional Corredor Vial Pasto-Mocoa*) was issued on December 12, 2006, and can be found in the Bank's electronic project files.

[19] Inter-American Development Bank, *Colombia – Preparación del Proyecto de Infraestructura Regional Corredor Vial Pasto-Mocoa (CO-T-1038) – Plan de Operaciones*, Washington D.C., November 2, 2006, hereafter referred to as PO, as in *Plan de Operaciones*, to distinguish it from the Bank's Operational Policies (OPs).

[20] *Ibid*., Executive Summary, pg. 1.

population of southern Colombia and the road users who will significantly reduce travel time and [vehicle] operation costs."[21]

Thus, indirect and induced – as well as direct -- economic, social, and institutional development effects associated with the proposed road improvement were explicitly identified among its expected benefits. While also observing that the IDB maintained a close relation with CAF and FONPLATA in the context of IIRSA, which had "prioritized" the Pasto-Mocoa Corridor in its "Amazonas Axis," the Bank was the only multilateral organism involved in the present project.[22] The situation in this case is, thus, different from that with respect to the Oceanica/IIRSA Sur and IIRSA Norte projects in Peru, where the main external financial intermediary involved is CAF, with complementary funding from the Bank for an environmental and sustainable development project along the Amazonian portion of the Interoceanica highway and a partial risk Guarantee to the Peruvian Government for road improvement expenses for IIRSA Norte, respectively.[23]

The "strategy" to be implemented through the TC is also described in somewhat different terms in the PO, including the addition of institutional strengthening activities for INVIAS, than in the Profile:

Taking into account the importance of the [road improvement] project in the context of the region's socio-economic development and the environmental fragility of the area through which it passes, the TC will support the development of studies to evaluate the potential cumulative and induced impacts that the project could generate considering different levels of analysis: the strategic – of project insertion in the context of bi-oceanic integration; the interregional – of the connection corridor of the southern zone of the country and the other countries of South America with the capital Bogotá; and the local – of the interrelations of the project with the environment and the traditional populations that reside there. In addition, in order to guarantee the sustainability of the impact mitigation proposals it is proposed to provide the executing agency with institutional strengthening activities and to implement a participatory process with the principal stakeholders throughout development of the studies.[24]

[21] *Ibid*., para. 5.1, pg. 10.
[22] *Ibid*., pg. 2.
[23] See Redwood, *op. cit.*, for additional information on these two other IIRSA-related road projects and the way the Bank is involved in their support.
[24] IDB, *PO*, op. cit. para. 2.14, pg. 6.

The TC has three components (with the associated estimated costs): (i) phase III detailed engineering and environmental and social impact studies (US$ 1.5 million); [25] (ii) environmental, social and economic studies (US$ 1.065 million); and (iii) institutional strengthening (US$ 85,000). While the first component would consist of the updating and complementation of the engineering and EIA studies for the San Francisco-Mocoa variant in order to meet MAVDT's requirements and whose costs would be covered entirely with Government counterpart resources, the second one, to be exclusively financed by the Bank grant, would have four specific subcomponents: (i) Strategic Environmental Assessment (SEA) of the Pasto-Mocoa corridor (estimated to cost US$ 130,000); (ii) Environmental and Social Management Plan (ESMP) of the Forest Reserve of the upper Mocoa River Basin (US$ 600,000, including associated socio-cultural studies); (iii) economic feasibility and baseline studies (US$ 185,000); and (iv) resettlement program (US$ 150,000). The third component would also be financed exclusively by the Bank grant -- and would be carried out by Conservation International (CI), which would be specifically contracted for this purpose -- as would the operation's supervision and audit that were estimated to cost US$ 130,000 and US$ 20,000, respectively.[26]

The main objective of the SEA, according to the PO, would be "to analyze the possible cumulative and synergistic impacts and the environmental management and socio-cultural opportunities, induced by the improvement of the Pasto-Mocoa road and involve the principal actors in the discussion of sustainable development alternatives. For this, the SEA should consider the road corridor in its strategic functions in terms of bi-oceanic connection and as a new connection axis of the region with Bogotá."[27] The ESMP for restoration and preservation of the Forest Reserve, in turn, would be developed with "an ecosystemic focus" and was charged with "proposing measures and technical specifications for the design, construction and operation of the [San Francisco-Mocoa road] variant with an eye toward guaranteeing the protection of natural resources and the forest reserve."[28] The economic feasibility and baseline studies were

[25] Further information on this EIA is presented in an annex to the PO entitled *Términos de Referencia – Actualización y Complementación del Estudio de Impacto Ambiental de la Construcción y Operación de la Variante San Francisco-Mocoa, en el Departamento de Putumayo*, October 23, 2006.

[26] IDB, *PO*, op. cit., see component description in paras. 3.2-3.4, pp. 6-8 and the cost table on pg. 8.

[27] *Ibid.*, para. 3.3a, pg. 7. Additional detail is provided in the Terms of Reference annexed to the PO – see IDB, *Términos de Referencia – Elaboración de Una Evaluación Ambiental Estratégica de la Via Pasto-Mocoa, República de Colombia*, October 23, 2006.

[28] *Ibid.*, para. 3.3b, pg. 7. According to this source the "principal principles" on the basis of which the ESMP should be developed are: (i) participatory, involving the principal stakeholders, among them Corpoamazonía, indigenous and *campesino* leaders and NGOs active in the zone, in its development; (ii) implementable [*applicable* in the original], in other words balanced between the ideal and the reality and considering the future existence of the variant in the zoning proposal and design of the management plans; (iii) committed, both with the natural resources and the people connected with them, including, therefore, a socio-cultural study in addition to the natural resource inventories; and sustainable, with an analysis of possible sources of financial resources for its implementation and operation and the institutional strengthening of its management unit.

expected to "comprehend the benefit/cost analysis of the construction and operation of the variant, including detailed traffic studies and the collection of the necessary data to establish a baseline with respect to the anticipated benefits." The feasibility study was also expected to "incorporate exogenous benefits such as: socio-economic development as the result of regional integration; expansion of legal crops and, as a consequence, reduction of illicit ones; reduction in civil violence and, its counterpart, increased security and reduction in population dislocation."[29]

Implementation of the TC was expected to require 24 months. The principal project risks "will be associated with the environmental and social fragility of the project area and, in consequence, eventual contrary reactions by the civil society organizations involved in the protection of Amazonia." In order to mitigate this risk, the PO affirmed that the Bank had consulted with MACVDT, Corpoamazonía, diverse local stakeholders and NGOs in preparing the Terms of Reference for specific project activities, while other such consultations with these same organizations were foreseen to discuss the TORs prior to contracting the studies, as well as a consultation plan during their development and presentation of their results.[30] Given the close relation between this TC and preparation of the proposed loan for construction of the San Francisco-Mocoa variant itself, the Bank's project team was expected to "actively participate" in its monitoring and evaluation.[31] Finally, the PO included annexes containing the TORs for the environmental management plan for the Forest Reserve, the SEA for the entire Pasto-Mocoa road, the environmental impact study for the San Francisco-Mocoa variant, and the socio-cultural study.[32] The Bank's electronic project files also contain a copy of the original 2003 EIA for the San Francisco-Mocoa variant, which is presented in two parts (I: Characterization and II: Impacts and Environmental Management Plan) and two annexes (Community Participation and Forest Inventory).[33]

Given the comprehensive nature of the environmental and social studies proposed for completion with the financial support of this Technical Cooperation project, including its focus

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Further detail is provided in the annexed TORs entitled *Términos de Referencia – Elaboración del Plan de Manejo Ambiental y Social para la Reserva Florestal Protectora de la Cuenca Alta del Rio Mocoa, en el Departamento de Putumayo*, October 23, 2006..

[29] *Ibid*., para. 3.2c, pg. 7.

[30] *Ibid*., para. 5.2,pg. 10

[31] *Ibid*., paras. 4.6-4.7 pp. 9-10. It observed further that the Bank would contract with resources from the TC individual consultant services to supervise the technical and socio-environmental studies to be contracted by INVIAS, and that there would be annual monitoring and evaluation missions on the part of the Bank itself, which would "present an opportunity to examine progress of the activities and the efficiency of the program to discuss their results with the network of actors in civil society and other public organisms involved in the project."

[32] See footnotes, 21, 23, and 24 above for more specific references. Unlike the other three, however, the Terms of Reference for the latter study, which had not been finalized at the time the TC was presented to the Board, do not appear to be contained in the Bank's electronic project files.

[33] Consultoría Colombiana s. a., *Estudios de Fase III Segunda Etapa para la Construcción de la Variante San Francisco-Mocoa de la Carretera Pasto-Mocoa*, Bogotá, Colombia, January 2003.

on indirect, including induced development, and cumulative impacts in the larger area of influence both of the alternate road segment to be constructed (i.e., the San Francisco-Mocoa variant) and the entire road corridor (through the SEA), as well as the environmental and social management plan for the Forest Reserve, the Bank is to be commended. This represents an example of very good, if not best, practice, and is also consistent with the approach taken earlier by the Bank in its support for road improvements and sustainable development in the Brazilian Amazonian state of Acre, on the border with Peru.[34] Equally important however, are (i) how – and how well – these studies were carried out and supervised by the Bank and, most critically, (ii) how – and how well – their recommendations are implemented in practice? As the answers to these key questions – to the extent that it is possible to do so considering the still incipient status of the road investment project itself at this point in time -- are also directly linked with the Bank project to finance construction of the road improvement itself, it is necessary to examine the design of this investment operation as well.

II. The Conservation and Development in High Biodiversity Areas – Pasto-Mocoa Project (CO-T-1142)

As background to this Technical Cooperation operation, which was approved in May 2008 and completed in March 2009 with cancellation of US$ 107,790 of the original US$ 145,000 grant, the respective project document affirmed that the new segment of the Pasto-Mocoa road to be constructed, connecting San Francisco and the latter city, would "cut through the conservation forest of the Mocoa river headwaters" which was characterized as "an environmentally sensitive area with high biodiversity which thus provides a unique opportunity to promote habitat connectivity in the context of regional integration." In a statement of more general applicability, it also observed that "landscape conservation in high biodiversity areas located in the frontier of development, where paving and construction of new roads is expected, offers possibility for a new conservation approach in sensitive areas with development processes." In addition, it stated that "conservation of the country's unique biodiversity richness is needed to adapt to climate change, to mitigate the 'carbon footprint' of infrastructure development and to promote a more 'carbon neutral' economic growth."[35]

[34] See John Redwood III, *Managing Environmental and Social Impacts of Major IDB-Financed Road Projects in the Brazilian Amazon: The Case of the BR-364 in Acre*, July 2011.

[35] IDB, Colombia: Conservation and Development in High Biodiversity Areas – Pasto Mocoa Road Project (CO-T-1142) Technical Cooperation Program (Trust Fund Financing) TC/FUNDS Brief, April 2008, paras. 2.1-2.3, pp. 1-2. In this connection also, it added that "it is important to

The TC brief went on to affirm that "overall conservation and development along the Pasto-Mocoa road can be strengthened by supporting the design and implementation of a comprehensive environmental and social plan for sustainable development of the direct and indirect area of influence of the road, including the conservation forest reserve located in the headwaters of the Mocoa River." Recognizing that the alternate road segment to be constructed counted with an EIA, a regional strategic environmental assessment (REA), and an environmental and social management plan for the area of influence of the road project, and that "an extensive round of consultations with key stakeholders including environmental organizations from the government, such as the Colombian National Parks office, the Ministry of Environment, and the national biodiversity research institute – Alexander von Humbolt, and from civil society, including the World Wildlife Fund (WWF) and Conservation International (CI), and some indigenous groups with interests in the area of the project," the general objective of the TC would be "to support Corpoamazonia in engaging key stakeholders from different sectors, to identify and develop conservation opportunities in natural habitats."

The TC's specific objectives, in turn, would include: (i) reaching an agreement among key stakeholders regarding the design and implementation of a comprehensive Environmental and Social Management Plan (ESMP) for sustainable development of this high biodiversity area in the Andean-Amazonian piedmont; (ii) identifying each stakeholder's role and responsibilities in the ESMP design and implementation process in both the direct and indirect areas of influence of the road project, including the forest reserve at the headwaters of the Mocoa River that will be affected by the road project; and (iii) designing a financial mechanism to guarantee the long-term sustainability of the conservation actions being pursued in the Alto Mocoa Forest Reserve. The document also emphasized that, in going "beyond the scope of risk management in the context of infrastructure development," the proposed "conservation/mitigation approach" to be supported by the TC and the action agenda for the ESMP, more specifically, would "incorporate a specific business plan with mechanisms aimed at contributing towards its long-term financial sustainability and guaranteeing the continuing support for conservation actions in the natural habitat of the Mocoa forest reserve."[36]

look for development options and innovative mechanisms that contribute to economic development while supporting the protection of sufficient forest canopy to maintain the climatologic and hydrologic functions of these forest ecosystems and their vital standing carbon stock, conserve biodiversity and habitat, and protect strategic freshwater systems."

[36] *Ibid*., paras. 2.4-2.5, 3.1-3.2, pp. 2-3.

The specific activities that were expected to be supported under the TC, whose implementation was expected to require eight months, were:

- Consolidation of the ESMP, including the specific plan for the Mocoa River Forest Reserve.
- ESMP validation to be led by Corpoamazonia and involving other key government and non-governmental stakeholders, including in the mining sector due to existing mining licenses in the area, and energy sector, as well as the roads agency and environmental and other NGOs.
- Detailed development of a Business Plan (BP) to implement conservation actions in the Mocoa River Forest Reserve and identify possibilities for sustainable indirect use of the forest reserve. Preparation of the BP was expected to "help identify threats (i.e., mining concessions) and new opportunities for forest conservation in green markets taking into account infrastructure projects and other potential activities that may impact land use and forest cover. Such opportunities should include sustainable forest based economies with non-timber forest products (i.e., mopa mopa, bromelias), payment for environmental services (i.e., carbon sequestration, biodiversity conservation and watershed protection), ecotourism (i.e., integrating the circuit of La Cocha lagoon, the cabins of San Francisco and the Mocoa Forest Reserve), and carbon credits from reduced emissions from avoided deforestation and land degradation – REDD." [37]
- Agreement of the Business Plan with different stakeholders and specific agreements for implementation.
- Design of a sustainable financial mechanism, including compensation from the road, the results of the BP, donations, etc. This would entail "a detailed assessment on best practices to guarantee financial sustainability of the conservation area of the Alto Mocoa (trust fund, an account in an existing trust fund, etc.), how it will be operated, expected financial resources (GEF, foundations, bilateral aid agencies, etc.) and operational costs in order to guarantee its long term sustainability."[38]

[37] *Ibid*., para. 4.4, pg. 4, emphasis in the original.
[38] *Ibid*., para. 4.6, pg. 4.

It is not clear from the documents on file how well this non-reimbursable Technical Cooperation project, which was financed with resources from the Netherlands-IDB Partnership Fund, was implemented and/or whether it was able to generate its intended results, or if its objectives were achieved using much fewer than the originally anticipated resources or with financing from other sources. However, the fact that nearly three-quarters of the original grant were subsequently canceled suggests that there may have been problems and/or shortcomings in this regard. This notwithstanding, the TC design was a very appropriate and forward looking one and the concerns that it was seeking to help Corpoamazonia address, including effective multi-stakeholder participation in the design and implementation of the ESMP and assurance of sustainable financing for adequate protection of the Mocoa River Forest Reserve over the long run, are clearly relevant and important.

III. The Productive Development Support of Indigenous Peoples in the Sibundoy Valley (CO-T-1166)

This US$ 100,000 Technical Cooperation grant, which was approved in October 2008, has as its purpose to support the development of legal, institutional, technical, socio-cultural and environmental studies aimed at: (i) creating an Indigenous Mining Zone in the Sibundoy Valley in the area of influence of the San Francisco-Mocoa alternate road project in compliance with Colombia's existing legal and institutional framework; and (ii) developing an economic pre-feasibility study and preliminary business plan for an indigenous microenterprise to be responsible for the sustainable exploitation of a local quarry, which is expected to provide construction material (e.g., rocks and sand) for the civil works associated with the aforementioned road project. This TC is still under implementation but just US$ 18,368, or 18.4 percent, of the grant has been disbursed to date, again suggesting that there may be implementation problems associated with it.

IV. The San Francisco-Mocoa Alternate Road Construction Project – Phase I (CO-L-1019)

A. Background, Objectives, Rationale for Bank Participation, and Expected Benefits

In accordance with the project description (in somewhat awkward English) contained on the Bank's external website:

The Road Corridor Pasto-Mocoa will have two phases. The total amount for phase I will be US$ 90 million and will fund 16 km of the route located outside the forest reserve (6 km San Francisco and 10 km for Mocoa Pasto). It also finances all of the environmental and social measures in the Integrated and Sustainable Environmental and Social Management Plan (PMASIS). The second phase, expected to be approved in 2010, corresponds to the financing of 29 km located within the forest reserve. In this context, phase I will allow the [socio-environmental] measures [to be advanced] before starting construction of the section within the reserve (phase II). The main objective of this program in two phases is: the Pasto-Mocoa Road is part of the Tumaco (CO)-Belém do Pará (BR) intermodal transport corridor of the IIRSA Initiative. This corridor promotes greater integration of the Colombian road network with Ecuador, Peru and Brazil, improving the trade between these countries and facilitating access to the Pacific Ocean. The Pasto-Mocoa Road works are divided into two segments. The first one – Pasto-San Francisco – is 67 km and work was [initiated] in 2006 funded by the Government. The present operation refers to the second segment – San Francisco-Mocoa – and will include the improvement and construction of a 47 km by-pass, at an estimated cost of US$ 150 million. The works along the San Francisco-Mocoa road segment face several technical, environmental and social problems. Therefore a technical cooperation is being [carried out] with the IDB's Fund for Regional Infrastructure Integration in order to prepare technical, social and environmental studies required to address these issues.[39]

The reported cost figures, however, conflict with those presented in the same project description on the external website which refers to a Bank loan of US$ 53 million for an operation whose total cost is estimated to be US$ 203 million. Significantly, the reported phasing is also quite different from that indicated in the corresponding Loan Proposal document, which differentiates only between the types of road surface (i.e., all weather vs. paved) rather than specific segments along its length (see below). There is, thus, a need to correct this description. The size of the Bank's loan, which will only cover about one-fourth of the total estimated road improvement costs, was apparently determined by the amount of Bank funding available for Colombia at the time, and it should also be noted that over US$ 11 million of this total is for

[39] IDB external website, *CO-L-1019: San Francisco-Mocoa Alternate Road Construction Project – Phase I*, last updated July 31, 2011. The reported cost figures, however, conflict with those presented in the same project description, which refers to a Bank loan of US$ 53 million for a project whose total cost is US$ 203 million. The reported phasing also seems to be rather different than that indicated in the corresponding Loan Proposal (see below). The length of the road to be constructed is also slightly longer in this description – 47 km compared with 45.6 km in the Loan Proposal.

environmental and social mitigation measures, leaving only some US$ 42 million for the road investment per se. The apparent understanding at the time was that the Bank would later pick up more of the financing under a later second loan – hence the reference to Phase I – but, to date, nothing has been added to the Bank's pipeline for Colombia in this regard.[40]

In addition, the economic feasibility of the road improvement project can be questioned, in part because of its very high construction cost – at an estimated average of roughly US$ 4.5 million per kilometer (assuming no cost overruns) – which is due in part to the large number of bridges and other ancillary infrastructure that will need to be constructed on account of the very accidented terrain and because most construction materials will need to be trucked in from either end of the new road segment to be built and paved because it will run through an existed national protected area. And it can likewise be questioned on account of the limited additional through traffic (i.e., from Tumaco to Puerto Asís and all places in between) that will be generated by the improved road, at least over the short and medium term after project completion. Potential implementation delays will also lengthen the time between when project construction and other costs are incurred and when the flow of benefits will effectively begin to occur. In fairness, however, other potential benefits -- especially those stemming from improved local governance and increased security (in relation both in terms of reduced guerilla and likely associated narcotrafficking activity) in the project's area of influence -- which the improved road between San Francisco and Mocoa may facilitate, cannot be easily determined or quantified in monetary terms.

According to the respective Loan Proposal, the objective of this operation is "to improve the efficiency and safety of the Tumaco-Pasto-Mocoa road corridor, promoting the physical and economic integration of southern Colombia with the country's main production and consumption centers, while seeking to conserve its ecosystems and promote sustainable economic and social development. With this aim, the project will finance construction of the 45.6 km San Francisco-Mocoa bypass road and the social and environmental mitigation and compensation measures required for execution and operation of the project."[41] In addition to requiring, as a condition prior to first disbursement, that the executing agency, INVIAS, "must have formed, by administrative resolution, an Independent Technical Advisory Committee" and put the project's

[40] Personal communication from Maria da Cunha.
[41] IDB, Colombia – San Francisco-Mocoa Alternate Road Construction Project – Phase I (CO-L-1019), Washington D.C., December 17, 2009, Project Summary, pg. 1.

Operations Manual into effect, the "special execution conditions" highlighted in the Project Summary included that it must:

- enter into an implementation agreement with the environmental authority by September 30, 2010, for partial execution of the PMASIS;
- conduct no construction work on the alternate road or other activities associated with the works that might affect the natural resources of the [Forest] Reserve, such as tree clearing, opening the right of way, earth moving, or moving of machinery and physical facilities, until such time as the implementation agreement mentioned above has been signed;
- have selected by mutual agreement with the Bank, and engaged with project resources by September 30, 2010, the members of the project Independent Technical Advisory Committee; and,
- present the following (with deadlines from the date of first disbursement): (a) 4 months into the project, the detailed revised plan for implementation of the PMASIS and provisions for addressing the concerns of communities affected and settlement of claims; (b) 6 months into the project, evidence that the Mocoa River Protected-Productive Forest Reserve (RFPPRM or the "Reserve") with its current boundaries has been registered; (c) 12 months into the project, the plan for monitoring the use of land and forested areas, including the baseline; and (d) 24 months into the project, the Declarations of the Expanded Forest Reserve, the Productive-Protected Reserve, and the Mocoa Integrated Management District (DMI).[42]

The Bank's Loan Proposal provides additional contextual information with respect to this project, reaffirming that the San Francisco-Mocoa road "will aid international transportation between Colombia and Ecuador through the Andean Integration Hub[43] and facilitate the connection with Brazil through the Multimodal Amazon Hub," both of which are parts of IIRSA. This road is also identified in the national development plan for 2006-2010 as "one of the complementary arterial corridors that is a key contributor to the increased competitiveness and productivity of Colombia." It notes further that:

[42] Ibid., Project Summary, pg. 1.
[43] According to IDB, A New Continent…. op. cit., (pg. 19) this Hub or axis "comprehends connections (networks of trunk roads, ports, airports and border crossings) in Bolivia, Colombia, Ecuador, Peru and Venezuela. It includes 11 groups of projects, many of which are related to the Pan-American Highway and the Marginal de la Selva road, which connects the Andes in Venezuela to the Amazon Basin in Colombia, Ecuador and Peru."

The Tumaco-Pasto-Mocoa corridor has several sections. INVIAS is paving the section between Tumaco, Pasto (capital of the department of Nariño), and San Francisco. There are serious traffic restrictions on the section of the road (78 km) between San Francisco and Mocoa (capital of Putumayo) built in the 1930s, which has long 4-meter wide stretches, where only one vehicle can pass, high gradients, unstable areas, constant cloudiness, and sharp cliffs, making this one of the roads with the highest accident rate in the country.[44] This uncertain accessibility and connectivity has resulted in serious limitations to the development of profitable and productive alternatives, and a primary sector that is not very competitive, and has contributed to the high level of pervasive poverty in the region. Rehabilitation of the San Francisco-Mocoa section using the same route would be very costly and environmentally inappropriate, resulting in the need to build a 46.5 km alternate route. The proposed route would be located in the Amazon foothills, and 68% of the route would cross through the Protected Forest Reserve of the Upper Mocoa River Basin (RFPCARM), which is administered by Corpoamazonía (the competent environmental authority) pursuant to Law 99 of 1993. The proposed route would skirt some of a Camino Real used as an overland route by the Andean and Amazonian indigenous communities since ancestral times. While there are no indigenous communities in the area of the alternate road, they have a close socio-cultural relationship with the forest reserve. Because of its environmentally sensitive location, the design of the alternate route was optimized to minimize its environmental impacts and the construction works and complemented with the PMASIS as a project component.[45]

In describing the rationale for the Bank's participation, this document refers specifically to the earlier TC operation stating, more specifically, that the Bank had approved non-reimbursable technical cooperation "operations totaling close to US$ 1.7 million, providing INVIAS with technical and financial support to: (i) establish a broad and integrated process of discussion and participation with communities, indigenous populations, nongovernmental organizations (NGOs), public agencies, and private stakeholders; (ii) carry out technical and social and environmental studies that permitted an assessment of the project's implications from an international, national, regional, and local perspective, and an analysis of the synergy with other development activities envisaged for the region, in addition to identifying the direct

[44] Here the report adds in a footnote (to para. 1.4, pg. 1) "according to statistics from the INVIAS field office in Putumayo, which is responsible for its operation and maintenance, between May 2007 and July 2008, 23 accidents left 32 people dead and 27 injured. Because of the high accident rate, this road has been closed to vehicle traffic from 6:00 p.m. to 6:00 a.m. since July 2008."
[45] *Ibid*., paras. 1.4-1.5, pp. 1-2.

impacts resulting from its construction and operation; (iii) propose a broad impact mitigation and compensation plan that, in addition to managing the impacts of the works, will enable the project to promote conservation of regional ecosystems; and (iv) establish an institutional agreement with organizations responsible for implementing that plan."[46]

The document also affirms that "the project will provide benefits to the users of the road corridor and those living in the departments of Nariño and Putumayo. Construction of the bypass road and improvement of the remaining sections of the Tumaco-Pasto-Mocoa corridor, associated with completion of the rehabilitation works on the border crossing between Colombia and Ecuador on the San Miguel bridge and paving of the Mocoa access road to that crossing, already being executed by INVIAS, will create a new transportation alternative that will permit savings of nearly 13% in the cost of transportation per ton." In addition, the proposed new bypass road was expected to significantly improve road safety, shorten the Pasto-Mocoa-Bogotá route (from 800 to 730 kilometers), and diminish travel time accordingly "making the road serviceable for the transportation of agricultural goods from the two departments to the country's main consumption and export centers and contributing to its socio-economic development."[47] Thus, the project's benefits would appear to be economically significant ones, affecting, at a minimum, the southern Colombian departments of Nariño and Putumayo, and, thus, having an impact well beyond the immediate direct area of influence of the new road section to be constructed itself.

The project, as designed, was also expected to generate significant environmental benefits. According to the Loan Proposal, its "sustainable regional integration framework will promote conservation of the region's protected areas through better land use, the social and productive development of the communities in its area of influence, and control over the spreading of the inappropriate use of natural resources." This document likewise affirms that "ending the historical isolation and strengthening local governance under the project will help to improve the defense of property rights of the region's population."[48] Finally, it clarifies the proposed phasing of the road construction activities, stating that:

INVIAS has divided the construction of the alternate road into two phases: (i) the first phase to be financed under the present loan costs US$ 203 million and will permit the alternate

[46] *Ibid*., para. 1.9, pg. 3.
[47] *Ibid*., para. 1.11, pp. 3-4.
[48] *Ibid*., para. 1.12, pg. 4.

route to be built with a wearing surface and put in service in full operational and safe condition; social and environmental measures come with this phase; and (ii) the second phase (US$ 60 million), to be financed with resources from the Colombian government, will include the asphalt paving of the alternate road; phase II is not part of the present operation. The division into phases is due to restrictions on future budget appropriations and the high cost of the works.[49]

B. Project Components

The project has two components: (i) civil works and inspection (US$ 191.1 million, of which the Bank loan was expected to finance 21.5%, including 20.7% of the direct construction costs estimated at nearly US$ 176.9 million[50]); and (ii) the Integrated and Sustainable Environmental and Social Management Plan (PMASIS) for the Mocoa River Protected-Productive Forest Reserve (RFPPRM) (US$ 11.4 million, to be fully financed by the Bank loan). According to the Loan Proposal, the first component consists of three parts: (i) construction of 45.6 kilometers of surfaced road (Phase I), acquisition of the right-of-way areas required to execute the project and measures to mitigate the direct impacts of these works; (ii) inspection and supervision of these works; and (iii) project management by INVIAS, including mid-term and final evaluations. The project's Environment and Social Management Report (ESMR) also reportedly contained "a program for management of families living in the right of way in accordance with OP 7.10," the Bank's involuntary resettlement policy[51] (see below).

This document indicates that four alternatives for this road improvement were assessed: (i) rehabilitation of the current 78 km section, without changing the route; (ii) improvement of the current road with changes to the route in critical sections; (iii) construction of an alternate road on the left bank of the Mocoa River; and (iv) construction of an alternate road along the right side of the river. The latter alternative was selected because "it would entail less social and environmental impacts, better road safety conditions, greater benefits in terms of time and operating costs, and lower execution costs." The Loan Proposal goes on to state:

As the alternate road cuts through mountainous and steep terrain for a considerable distance, many structures such as bridges and retaining walls will be needed to circumvent deep depressions and thus produce a vertical alignment with maximum gradients of 10% on sections

[49] *Ibid.*, para. 1.13, pg. 4. The very significant difference in terms of the phasing of the road construction works from the description contained on the Bank's external website cited above is not explained however.
[50] *Ibid.*, para. 1.26, pg. 7. These costs include direct environmental mitigation of the works and land acquisition, among other items. Detailed cost figures for works, "goods," including land acquisition, and consulting services are presented in an annex to the Loan Proposal.
[51] *Ibid.*, para. 1.15, pg. 4.

of less than 200 meters in length, with a minimum curvature radius of 50 meters on rolling terrain and 30 m on mountainous terrain. The road was designed for speeds of 40 km/hour…"As a result of the review and supplemental engineering studies, the bypass road has a modern design with significant improvements over the original design and environmental protection advantages, including: (i) a 55% reduction in the volume of embankments (540,000 m3 to 247,000 m3); (ii) a 35% reduction in the volume of excavations (5.2 million m3 to 3.4 million m3); (iii) a decrease in the maximum height of banks (58 m to 36 m), including special stability measures; (iv) an increase in the length of bridges and viaducts, reducing the direct impact on the land and facilitating the movement of fauna (49 viaducts over 45.6 km); and (v) a reduction of 3.6 ha of the forested areas affected."[52]

The second component, in turn, would include mitigation and compensation measures associated with the road construction, as well as "monitoring and tracking during operation, in compliance with the project environmental permit." The Bank's Loan Proposal also affirms that "this component adds to the project biodiversity protection, management, and conservation activities in the Protected Forest Reserve in the Upper Basin of the Rio Mocoa and the surrounding areas in compliance with Directive B.9 of the Environment and Safeguards Compliance Policy (OP-703) with the result that the alternate road does not degrade or significantly alter critical native (sic) habitats in the project area."[53]

The Loan Proposal likewise clarifies that, as part of project preparation, "several evaluations were made with a view to preventing, mitigating, and offsetting the potential environmental impacts of construction and operation of the alternate road, including (i) updating and supplementing the environmental impact study (EIS); (ii) a strategic regional environmental assessment (REA); and (iii) a Basic Environmental and Social Management Plan for the Forest Reserve (PBMAS)." The PMASIS, in turn, "consolidates" the actions proposed by these studies, as well as "the requests of the MAVDT covered by the environmental permit, and the Bank's

[52] *Ibid.*, paras. 1.16-1.17, pp. 4-5. This document also observes that "given the complex topography of the region and the engineering design, construction of the alternate road will need to adhere to careful technical specifications and follow a rigorous supervision and monitoring process," for which the associated costs were included in the component.

[53] *Ibid.* para. 1.19, pg. 5. Directive B.9 of OP-703, which went into effect in July 2006, specifically states "The Bank will not support operations that, in its opinion, significantly convert or degrade critical natural habitats or that damage critical cultural sites. Whenever feasible, Bank-financed operations and activities will be sited on lands already converted. In addition, the Bank will not support operations involving the significant conversion or degradation of natural habitats as defined in this policy, unless: (i) there are no feasible alternatives acceptable to the Bank; (ii) comprehensive analysis demonstrates that overall benefits from the operation substantially outweigh the environmental costs; and (iii) mitigation and compensation measures acceptable to the Bank – including, as appropriate, minimizing habitat loss and establishing and maintaining an ecologically similar protected area that is adequately funded, implemented and monitored…." Inter-American Development Bank, Sustainable Development Department, Environment Division, *Environment and Safeguards Compliance Policy*, Sector Policy and Policy Paper Series, Washington D.C., March 2006, pg. 11.

policies."[54] The document then identifies the "overarching strategies" of the "PMASIS programs and projects": (i) environmental land use; (ii) conservation and sustainable development; (iii) relationship of communities to conservation of the protected areas; (iv) sustainable conservation of the alternate road; and (v) operation, monitoring and supervision, each of which (together with its expected estimated cost) are briefly described in turn:

Environmental land use (US $ 1.25 million): (i) creation and consolidation of a 121,700 hectare biological conservation corridor connecting the "southern extent of the Colombian massif with northern Amazonia," including: (a) expansion and consolidation of the Mocoa River Protected Forest Reserve from 34,600 to 65,300 hectares; (b) creation of a 5,770 ha Protected-Productive Forest Reserve in a region currently occupied by *campesino* communities; and (c) creation of the 50,660 ha Mocoa integrated management district in the east to link up with other Amazonian protected areas; (ii) adaptation of land use plans for Mocoa and San Francisco and of watershed management plans; and (iii) creation of a theme park at the entrance to the reserve to limit the urban expansion of Mocoa and promote environmental education.

Conservation and sustainable development (US$ 5.25 million): (i) research and monitoring of the natural resources of the expanded reserve, purchase of land and restoration of vegetation in degraded areas as compensation for "removal of the right-of- way," and the rescue, relocation and reintroduction of native species; and (ii) local governance strengthening projects including support for: (a) the competent environmental authority for administration of the Reserve; (b) environmental supervision and strengthening of citizen participation; (c) promotion of alternative financing sources for managing the Reserve, including payment for environmental services; and (d) an independent technical advisory committee to supervise PMASIS.

Relationship of communities to conservation of the protected areas (US$ 1.9 million): promoting, together with local communities, activities for the sustainable use and management of natural resources, involving them in local biodiversity protection and, at the same time, allowing them to generate income and improve their quality of life through: (i) generation of sustainable production projects; (ii) development of regional tourism and ecotourism activities; (iii) establishment of environmental education sites; (iv) support for indigenous communities; and (v) compensation for families affected by the right-of-way of the new road.

[54] IDB, *Loan Proposal*, op. cit. para. 1.20, pp. 5-6.

Sustainable construction of the alternate road (included in the cost of the works in Component One): encompasses the environmental management plan (EMP) for facilities and work sites, for the conservation and use of soil, water, and vegetation resources affected by road construction, and the code of conduct and environmental education for project personnel.

Operation, monitoring and supervision (US$ 3.0 million): supervision and monitoring of "inappropriate occupation of the expanded reserve" through five control posts on the route, implementation of a forest ranger families project, and "monitoring and tracking through satellite and radar imagery," as well as "sustainable operation and control of the road, control of the right-of-way, special signage, and contingency measures for environmental emergencies."[55]

Elsewhere, the Loan Proposal affirms that PMASIS "should become a social and environmental management instrument of INVIAS and the competent environmental authority for the Reserve," noting further that, for this purpose, it had "the backing of the departmental, municipal, police, military, and national park authorities who signed an institutional agreement in May 2009 to support [its] implementation, and the MAVDT, which included it as part of the obligations for the environmental permit for the road." The document also elaborates on the supervision, monitoring and oversight arrangements for PMASIS, which include: (i) the aforementioned five fully staffed and equipped control posts, controlled by Corpoamazonía, at the entrance and exit of the forest reserve and midway along the current road and the alternate route; (ii) use of forest rangers, coordinated from the control posts, to monitor the reserve area; (iii) monitoring deforestation in the reserve "through satellite and radar imagery taken annually during construction of the alternate route and semiannually for five years after the road is opened;" (iv) tracking potentially affected flora and fauna; (v) support for the formation of "citizen inspection units" for the road and PMASIS, together with other public participation mechanisms; and (vi) establishment of the three member Independent Advisory Panel, all of which would be financed with project resources.[56]

These precautions are laudable. However, it also would have been important for the Loan Proposal to have clearly spelled out how encroachments and/or the unauthorized deforestation in and illegal extraction of flora and fauna from the Forest Reserve would be addressed, how other environmental regulations and/or restrictions would be enforced, and with what consequences for

[55] *Ibid.*, paras. 1.21-1.25, pp. 6-7. Cost figures from the table in para. 1.26 on pg. 7. Total inspection and supervision costs for the road works were estimated at roughly US$ 12.2 million, of which the Bank loan would finance US$ 2.5 million, or 20.7 percent, which is the same as its share of the anticipated direct construction costs.
[56] *Ibid.*, paras. 2.7-2.8, pp. 9-10.

apprehended offenders. More generally, the Loan Proposal document would have benefited from the inclusion of one or more maps showing where the RFPPRM and each of its component parts mentioned in the text -- i.e., the existing Mocoa River Protected Forest Reserve, the area to be added to it, the new Protected-Productive Forest Reserve, and the Mocoa integrated management district, as well as the biological conservation corridor connecting the southern extent of the Colombia massif with northern Amazonia, all of which have different areas -- are or will be located in relation to the road itself.

Furthermore, while the Loan Proposal affirms that "the social and environmental sustainability guaranteed by the PMASIS will result in an increase in protected areas and greater conservation of local biodiversity" as well as that, "in the medium term, results are expected to be obtained in growth in economic activity, diversification, and expansion of production, improvement in protection of the right of way of the local population, and poverty reduction,"[57] nothing is said in this part of the Loan Proposal about how the broader potential adverse indirect environmental and social impacts of the road in its larger area of influence in the departments of Nariño and Putumayo, which it is explicitly intended to benefit, and, indeed, along the entire Pasto-Mocoa and, eventually, Tumaco-Belém do Pará corridors, including possible transboundary ones, would be addressed under the project, as required under the Bank's Environmental and Safeguards Compliance Policy (OP-703). In this context, it should be recalled that, among other requirements, this Policy states the following:

- The EIA process includes, as a minimum: screening and scoping for impacts; timely and adequate consultation and information dissemination process; examination of alternatives including a no project scenario. The EIA should be supported by economic analysis of project alternatives and, as applicable, by economic cost-benefit assessments of the project's environmental impacts and/or the associated protection measures. Also ***due consideration will be given to*** analyzing compliance with relevant legal requirements; ***direct, indirect, regional or cumulative impacts***, using adequate baseline data as necessary; impact mitigation and management plans presented in an ESMP; ***the incorporation of EA findings into project design***; measures for adequate follow-up of the ESMP's implementation. An EIA report must be prepared with its ESMP and disclosed to

[57] *Ibid.*, para. 1.28 pg. 7. It also states that "the expected outcomes have to do with improvements in existing physical accessibility and serviceability, which will result in lower transportation costs, shorter travel time, more reliable road service, and better road safety conditions."

the public prior to the analysis mission, consistent with the Disclosure of Information Policy (OP-102).

- The SEA has the following objectives: (i) ***assure that the main environmental risks and opportunities of policies, plans, or programs have been properly identified***; (ii) engage early on governments and potentially affected parties in the identification and analysis of strategic issues, actions, and development alternatives; (iii) ***define and agree on a sequence of actions to address systematically and strategically environmental issues and priority actions,*** summarized in a SEA action plan for adequate monitoring and follow up; and (iv) assure that adequate environmental information is available and collected for the decision making process.[58]

With regard to potential transboundary impacts, in turn, the Bank's Environment and Safeguard Compliance Policy stipulates that: "the environmental assessment process will identify and address, early in the project cycle, transboundary issues associated with the operation. The environmental assessment process for the operation with potentially significant transboundary environmental and associated social impacts, such as operations affecting another country's use of waterways, watersheds, coastal marine resources, biological corridors, regional air sheds and aquifers, will address the following issues: (i) notification of the affected country or countries of the critical transboundary impacts; (ii) implementation of an appropriate framework for consultation of affected parties; and (iii) ***appropriate environmental mitigation and/or monitoring measures***, to the Bank's satisfaction."[59]

While, given its distance from neighboring countries, especially Brazil, it may be debatable whether this project would, indeed, have "significant" transboundary environmental and associated impacts, considering that the road improvements to be implemented under the project are a key – perhaps the most essential – part of a major intermodal transportation corridor that involves a major international waterway – the Amazon River – in a neighboring country, Brazil, as well as improved road connections with two other such countries, Ecuador and Peru, and that a SEA, as well as an EIA, was carried out – the two following questions are nonetheless

[58] IDB, *Environment and Safeguards Compliance Policy*, op. cit, Directive B.5 Environmental Assessment Requirements, pg. 9. My emphasis. More specific guidance in this regard, as suggested above, can be found in Inter-American Development Bank, Sustainable Development Department, Environment Division, *Implementation Guidelines for the Environment and Safeguards Compliance Policy*, Sector Strategy and Policy Papers Series, Washington D.C., May 2007, pp. 29-33.

[59] *Ibid*., Directive B.8 Transboundary Impacts, pg. 11. Emphasis mine. See also the above-cited *Guidelines…*, pp. 38-39.

of direct relevance: (i) whether – and how well – the SEA identified and proposed measures to address possible adverse transboundary impacts ; and, (ii) how – and how well – the Bank's road construction project incorporates the environmental and management measures recommended by the EIA required by both the Colombian Government and the Bank, and the SEA, financed by the IDB, more generally in light of its Environmental and Safeguards Policy directives summarized above?

C. Environmental and Social Risks[60] and Implementation Arrangements

In its section on environmental and social safeguard risks, the Loan Proposal affirms that "after completing the environmental evaluation of the project as a whole, and given that steps were taken during the preliminary phase to incorporate all environmental and social considerations, the project was determined to be viable from an environmental and socio-cultural standpoint and in compliance with the Bank's policies and safeguards."[61] However, this document does not clarify what the "steps" taken during the preliminary phase were, or even what this "preliminary phase" consisted of, although presumably it refers to the up-front due diligence work through the aforementioned EIA and SEA and their associated management plans. Nor does it elaborate on what "viability" from an environmental and socio-cultural standpoint means in practice or how this was determined.

As concerns the Bank's safeguard policies, in particular, the Loan Proposal states the following with regard to OP-703:"The project complies with the country's environmental legislation and regulations. MAVDT issued the environmental permit in December 2008. Because it is located in a critical habitat, the project was classified as category "A." It was designed to include mitigation and compensation measures, including expansion of the reserve area from 34,600 ha to 65,289 ha, to minimize habitat loss and establish and maintain an ecologically greater protected area. This measure [to be] fully financed by the PMASIS, which also has implementation and supervision mechanisms, was included by MAVDT in the environmental permit as part of project compensation. All of the projects and programs were designed based on a comprehensive process of consultation and participation by local communities, NGOs, and public and private agencies."[62]

[60] The Loan Proposal also discusses project financial (para. 2.9), technical (para 2.12) and economic risks and benefits (paras. 2.10-2.11) and concludes from the latter that it is economically feasible "because of the net positive benefits and internal rate of return."
[61] IDB, Loan Proposal, *op. cit.*, para. 2.2, pg. 8.
[62] *Ibid*., para. 2.3, pg. 8.

However, as indicated above, the Loan Proposal does not identify the anticipated potential indirect and/or cumulative environmental impacts of the project, including possible transboundary ones, or what measures would be taken to address them, as required by Bank policy, although, in addition to the statement above, it does refer to measures included in relation to both the Indigenous Peoples and Involuntary Resettlement Operational Policies -- OP-765 and OP-710, respectively -- as well as with respect to Operational Policy (OP-704) for Disaster Risk Management. As concerns OP-765, for example, it observes that: "There are no indigenous reserves along the alternate route or in the forest reserve area. The indigenous communities of the Mocoa sector and the Sibundoy Valley in the project area acknowledge that their communities need the alternate road. During project preparation, a special consultative process with the communities added measures to the PMASIS to support their development while maintaining their cultural identity, and to provide direct economic benefits from the project to them through support for establishing an indigenous mining area that can provide materials for the construction or operation of the road and other priority projects."[63]

However, the document does not provide further information on the nature of the "added measures to the PMASIS," nor does it identify any possible adverse impacts on indigenous communities in the project's larger zone of influence as a result of additional settlement and/or productive occupation of this region by migrants likely to be attracted as a result of the improved accessibility to the area and its natural resources once the road improvement has been completed and even while it is still under construction. In short, the Loan Proposal does not explicitly discuss possible induced development effects associated with the new road and the resulting greatly improved connection with other parts of southern Colombia, Bogotá, and neighboring countries, their associated potential adverse environmental and socio-cultural impacts, and possible measures to avoid, minimize, and/or manage these impacts.

As concerns involuntary resettlement, in turn, the Loan Proposal affirms that the project "requires only the relocation of five families because the properties affected are too small to move the homes. Here the project anticipates purchasing property in the same region….In no event, will the specifications of the new home be inferior to basic specifications or of lower quality than the current home." It also states that "the municipality of Mocoa is introducing a relocation program for displaced families located in the right-of-way at the entrance to Mocoa

[63] *Ibid.*, para. 2.4, pg. 9.

that complies with the principles of OP-710."[64] It does not clarify, however, how many families will be displaced at the entrance to Mocoa or how the associated resettlement activities will be conducted or financed. More broadly, the document does not indicate whether any families will be adversely affected by the expansion of the Forest Reserve under the project – even though the new Protected-Production Forest Reserve that is proposed as an addition to the existing one presently houses *campesino* communities -- and, if so, in what way or ways, and what measures would be taken to mitigate such potential impacts. In short, resettlement actions under the project seem to be restricted to affected families along the immediate right-of-way of the road to be constructed but do not appear to contemplate potential physical or economic dislocation as a direct or indirect result of the project in its larger area of influence and even within the proposed expanded Forest Reserve itself.

With respect to the Bank's Policy on Natural Disasters, finally, the document states that "the update of the engineering study on project preparation reviewed in depth the natural risks associated with construction and operation of the road and changed the original design, minimizing the cuts and the embankment height, moving the route further away, with the construction of nearly 10 km of retaining walls and 49 bridges and viaducts, without increasing the cost of the works and minimizing the risks of landslides and avalanches."[65] It does not say, however, whether, in assessing these risks and proposing these design changes, the possible adverse impacts of climate change in the region though which the road will be built were also taken into account.

The Loan Proposal then goes on to describe project implementation arrangements, observing that INVIAS would "entrust the competent environmental authority for administration of the [Forest] Reserve with partial execution of component 2 (PMASIS)." An implementation agreement would be signed for this purpose "setting out the technical, administrative, fiduciary, and financial responsibilities and procedures to be fulfilled by PMASIS, including the creation of a project implementation unit within the environmental authority that would be financed with project resources." More specifically, this agreement would define the authority's

[64] *Ibid.*, para. 2.5, pg. 9. With respect to the five families mentioned initially, the document further states that "the project encompasses a relocation plan with three types of compensation: (i) payment for land, buildings, and related goods in accordance with national law and guaranteeing the replacement value of the property and improvements; (ii) payment of compensation for the impacts caused by the purchase of the property, in accordance with Resolution 1843 of INVIAS, which considers compensation based on housing space, economic activities carried out or associated with it, titling procedures, relocation costs, and overcrowding in the home subject to relocation; and (iii) social, legal and technical advice for the purchase of the new home."

[65] *Ibid.*, para. 2.6, pg. 9.

responsibilities, including: (i) partial financing of the PMASIS oversight, monitoring, and tracking plan for a period of five years from the date the alternate road becomes operational, to which INVIAS would also contribute;[66] (ii) creation of a revolving fund of 10% of the resources to be transferred by INVIAS; (iii) fulfillment of the conditions and procedures set out in the Environmental and Social Management Report (ESMR) (see below); and (iv) "any other provisions that may be necessary to ensure that the activities to be carried out by the environmental authority are consistent with those of the loan contract between the Republic of Colombia and the Bank."[67] It does not say, however, what will happen with regard to the "oversight, monitoring, and tracking plan" for PMASIS after this five-year period, or on what basis the length of this period was determined.

Among the conditions prior to first disbursement contained in the respective Bank Loan Agreement are that the project's Operations Manual must have entered into effect, including the PMASIS and "the environmental management system envisaged in the ESMR." Other legal conditions, a number of which have specific dates or time frames associated with them, which should greatly facilitate the monitoring of Borrower compliance by the Bank, are presented in the Project Summary as well as the text of the Loan Proposal and were briefly summarized in section 1 above.[68] INVIAS is also required to present semi-annual performance reports to the Bank "indicating the status of each component and the project's overall performance metrics based on the agreed indicators in the results matrix." Lastly, a mid-term evaluation is expected to be carried out when at least 50 percent of the loan has been disbursed or by the fourth year of implementation, as would a "final evaluation," including of PMASIS, when at least 90% of the loan has been disbursed.[69]

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[66] Here, the Loan Proposal noted in a footnote that "upon completion of the construction work, INVIAS and the environmental authority will arrange the future budgetary allocations to the road." (*Ibid.*, para. 12, pg. 12)

[67] *Ibid*., paras. 3.3-3.4, pp. 11-12. This document also affirmed that "the Office of the Deputy Director of Environment and Social Management of INVIAS will support LPM [Large Project Management, which coordinates large road construction projects currently under way in Colombia] in monitoring and tracking the PMASIS, ensuring effective coordination of LPM, the environmental authority, and the other stakeholders involved in implementation." (para. 3.5, pg. 12)

[68] *Ibid*., paras. 3-6-3.7, pp. 12-13.

[69] *Ibid*., para. 3.9, pg. 13. The results matrix was presented in annex to the Loan Proposal and repeated the purpose – "[to] contribute to the economic and social development of southern Colombia and to the economic integration of this region with neighboring countries (Ecuador, Peru, and Brazil) by improving the efficiency and safety of the Tumaco-Pasto-Mocoa road corridor" – and general objective of the project – "[to] improve the efficiency and safety of the Pasto-Mocoa road corridor by building the San Francisco-Mocoa alternate road, thereby promoting the physical and economic integration of southern Colombia with neighboring countries and the main production and consumption centers in the rest of the country, as well as conservation of its ecosystems, which contributes to the sustainable economic and social development of the region." One of the five outcome indicators contained in this matrix is the "increase in protected areas in the area of the alternate road" from a baseline of 34,600 hectares to 65,289 hectares in year 8; the others being the number of days each year with severe traffic restrictions (from 183 to zero), and reductions in average travel time from San Francisco to Mocoa (from 2.5 to 1.5 hours, when the road is trafficable), average vehicle cost per kilometer (from US$ 105 to US$ 61), and the average number of accidents per year (from 23 to 12) over the same time period (Annex, pp. 1-2). Targets for each component of the project, including PMASIS, are also presented (pp. 2-5.)

One final observation should be made with respect to project preparation. Bank project team members report that because of its complexity and the high level of environmental and social risks involved – it therefore having been correctly classified as a Category A project for environmental and social safeguards purposes – both the financial and transactions costs entailed in preparation and appraisal activities were well above those required for less complex and risky Bank projects. As a result, the project team had to "scramble" to obtain the technical cooperation resources in order to ensure adequate preparation and this activity in and of itself involved additional transactions costs, as did the many meetings with a broad range of both government and non-governmental stakeholders, including NGOs and local indigenous communities. However, no special provisions were made in the project preparation budget in order to finance these extra costs. Supervision will also require above average costs that also need to be adequately financed and strongly supported by Bank management for the same reasons. Clear incentives for and recognition of staff commitment and efforts are also needed.

D. The Environmental and Social Management Report (ESMR) and Associated Studies and Plans

Although not summarized and barely mentioned in the Loan Proposal itself, the ESMR – or IGAS (for *Informe de Gestión Ambiental y Social*) in Spanish – is nevertheless an important part of the project. This document observes that, altogether, US$ 16 million, or 7.9% of the total project cost for the alternate road improvement, will be dedicated to environmental and social management activities, including, in addition to the US$ 11.4 million for PMASIS cited above, US$ 2.1 million for land acquisition in the right-of-way (although this should more appropriately be considered an operational rather environmental and social management cost), and US$ 2.5 million for the environmental management plan for road construction works. [70] The report then describes the various socio-environmental studies carried out as part of preparation of the road improvement project. It affirms that the area that is likely to be most strongly affected by the project is the aforementioned Forest Reserve, whose management needs to be considerably strengthened, and its area of influence, although this area is not clearly identified. In the process, the report identifies the following types of potential environmental impacts: deforestation, (forest

[70] Inter-American Development Bank, *Colombia – Corredor Vial Pasto- Mocoa Variante San Francisco Mocoa: Informe de Gestión Ambiental y Social (IGAS)*, Washington D.C., October 20, 2009 (hereafter ESMR).

and habitat) fragmentation, increased access (to natural resources), inadequate occupation and use of land, possible resource concessions, erosion, water pollution, adverse effects on flora and fauna, and inadequate governance. Local economic, resettlement, and direct construction impacts, as well as possible effects on indigenous communities, are also mentioned.[71] With respect to governance concerns, for example, the ESMR summarizes both the nature of the challenges and measures to be taken as part of the project to help meet them:

As the problems that generate pressure on the area of the Reserve are growing and becoming more complex, the relative capacity of the municipal and environmental authorities to control them are (sic) diminishing. These facts have permitted the existence of communities in the interior of the Reserve, deforestation, and the hunting of fauna, which is due in part to the lack of technical resources, personnel and logistics, and even of planning, such as an Environmental Management Plan for the Reserve, which has not been elaborated since the time of its declaration in 1984. Lack of knowledge or clarity about the boundaries of the Reserve zone has meant that land titles continue to be granted and that even mining or hydrocarbon concessions are given in its interior. Lack of knowledge about the supply (*oferta*) of natural resources within the Reserve has meant that it has not been feasible to implement control actions for species of high environmental value. Together with the design of the alternate road, a Management Plan for the Forest Reserve has been elaborated and, with implementation of PMASIS, the Environmental Management Plan of the Reserve (as part of the Integrated Environmental and Social Management Plan –PBMAS) will be formalized and the institutional capacity of Corpoamazonía will be strengthened for administration, oversight (*vigilancia*) and control of the Reserve and implementation of the Management Plan for the expanded Reserve. In addition, a governance strengthening program will be implemented that will permit local communities, NGOs, and other organizations to participate in the oversight, control and administration of the protected area. Furthermore, PMASIS foresees financing for the forest guards (with the respective equipment for mobility and communication) and control of the Reserve zone for a period of 15 years.[72]

With regards to indigenous people, in turn, it affirms:

The indigenous communities located in the surroundings, and even within the urban perimeters of Mocoa and San Francisco, are outside the direct area of influence of the alternate

[71] *Ibid*., pp. 11-16 provides further details about each of these types of potential impact.
[72] *Ibid*., pp. 14-15. My translation.

road and the Forest Reserve, in which there are various communication routes (*vías de comunicación*) that connect these populations with the principal cities of Pitalito (on the road to Bogotá) and Pasto, respectively. Thus, the cultural opening (*apertura cultural*) of the area inhabited by these indigenous communities has already taken place and interaction with the Andean and Amazonian communities that reside on each side has occurred since colonial times through the Sachamates road (parallel to the alternate road corridor) and the current road between San Francisco and Mocoa since the 1930s. Because of this, Project support to the opening of the area where these cultures are located is nil. However, PMASIS includes…projects to strengthen governance within the indigenous communities, as well as to strengthen their ability to interact with government entities and the other population groups that live in the area.[73]

The ESMR does not appear to give much attention, however, to possible project impacts on indigenous communities or governance concerns beyond the direct area of influence of the new road and the expanded Forest Reserve, nor does it propose measures to address them. A similar deficiency also appears to apply to the various types of possible environmental impacts mentioned above. While this narrowing of the scope of proposed actions to the direct area of influence of the new road and the Forest Reserve may represent a pragmatic response because it would be difficult for the project to include remedial actions that go beyond this area, this does not mean that such impacts may not be relevant or significant over time. This apparent inattention to the possible broader effects of the new road would, thus, appear to be a shortcoming of the ESMR and of the Colombian Government's and Bank's approach to identifying, assessing, and addressing its potential indirect, including induced development, and cumulative, environmental and socio-cultural impacts.

The ESMR goes on to describe the proposed management plan in the following terms:

The objective of PMASIS is to protect and manage the area of influence of the alternate road (*Variante*), contributing to achieve conservation of the ecological functions of the region, such as water supply and a rich variety of fauna and flora, for the country. For this purpose, PMASIS integrates: (i) the environmental actions and investments by INVIAS in its capacity as promoter and executor of the alternate road; (ii) the activities of Corpoamazonía, in its role as regional environmental authority, for the restoration and conservation of the protected area in the context of the directives of the National and Regional Protected Areas Systems coordinated by

[73] *Ibid*, pp. 15-16.

MAVDT and by the Special Administrative Unit for the System of Natural National Parks; and (iii) the measures necessary to comply with the environmental safeguards of the IDB, in its condition as financier of the project. PMASIS is integrated by a set of specific plans based on: (i) the commitments of INVIAS and Corpoamazonía; (ii) an Institutional Pact between entities and organisms that can provide resources and initiatives with those which are responsible for execution of the proposed programs, signed May 14, 2009; (iii) a pre-assigned budget for its execution during the first 13 years; and (iv) continuous support and monitoring by the Bank.[74]

Observing additionally that "the Project integrates all the elements necessary to comply with the Bank's safeguards policies, especially with respect to Directive B.9 [Natural Habitats and Cultural Sites] of OP-703," the ESMR then describes the five components of PMASIS previously summarized above. However, as also stated above, based on what is set forth in the Executive Summary of the ESMR at least, this component of the alternate road construction project, necessary and important as it is, does not appear to take the road's potential indirect environmental and social impacts in its larger area of influence – which, from the standpoint of the project's indirect economic benefits, appears at least to include the departments of Nariño and Putumayo – into account.

It is not even clear from the ESMR exactly how this area of influence was – and is – defined, or the basis for this definition. The map in Chapter 3 of the ESMR does indicate the approximate location of the existing Forest Reserve, which seems to cover much of the area along both sides of the alternate road route, as well as most of the adjacent watersheds, but there are still areas close to both the towns of San Francisco and Mocoa, together with extensive areas elsewhere in the Pasto-Mocoa corridor, to the east of Mocoa, and along the central north-south trunk road (Troncal Central), which passes through Mocoa and is indicated in the larger map earlier in this document, that are likely to be impacted indirectly – and perhaps substantially so, depending on the extent and nature of the new settlement and/or productive development that may be induced in this region as a result of the improved access and decreased transportation costs made possible by the new road investment -- which are not covered by the Reserve, even after its proposed future expansion, and the proposed Integrated Management District (DMI).[75]

[74] *Ibid*., pg. 16.
[75] These two maps are presented as Figura 1.1 Localización del Proyecto de la Variante San Francisco-Mocoa, pg. 6, and Figura 3.1 Localización Corredor Vial Pasto-Mocoa, pg. 44, respectively.

Even though most of the larger Tumaco-Pasto-Mocoa-Puerto Asís-Belém do Pará intermodal transport corridor involves rivers rather than roads,[76] construction and paving of the alternate road is important because it will decrease the distance between Bogotá and Mocoa by nearly 10%, from 798 to 730 kilometers, and the travel time between these two cities, by 22%, from 18 to 14 hours, thus, in the short run, considerably improving the connection between the project area and the capital city as well as other parts of Colombia and neighboring areas in Ecuador and Peru. Eventually, the improved road may also substantially enhance Colombia's – at present largely non-existent – connection with the Atlantic coast via the Putumayo and Amazon Rivers, although its ultimate effectiveness as an intermodal cross-continental transportation corridor will also depend on needed navigability and infrastructure improvements on the Putumayo River, which the ESMR considers to still be far off in the future. As a result, the ESMR concludes that, "from the standpoint of its functionality, the Pasto-Mocoa road, as a means of transport in an east-west direction does not have a significant role in inducing trade with Brazil; in the north-south direction, this route does play an important role in the short and medium term in terms of the relations between the region with Ecuador."[77] And it is particularly important – and more immediately so – because the improved road will permit greatly increased freight transport along its entire length.[78] This notwithstanding, the longer-term potential impacts of the planned intermodal connection with Brazil could also have been assessed, both in terms of further increases in freight traffic along the corridor and associated induced development impacts throughout southern Colombia, including in the Amazon region to the east of Mocoa.

Assessment of such possible impacts, in fact, seems to have been explicitly contemplated in the Terms of Reference for the SEA proposed in the earlier Bank Technical Cooperation Project described above. According to these TORs, one of the main objectives of the SEA would be to "identify and evaluate the induced (synergistic, cumulative, etc.) environmental impacts along the road corridor as a result of the construction of the missing segment (*trama de corridor faltante*), the San Francisco-Mocoa alternate, with which a continuous and efficient flow of heavy traffic of passengers and merchandise will be established between the cities of Pasto and Mocoa and, at the same time, the Tumaco-Pasto-Mocoa-Puerto Asís-Belém do Pará (Brazil)

[76] Ibid., pg. 45. More specifically, this corridor covers a total of 2,804 kilometers, of which 2,292 by river and 512 by land, with the latter crossing three major ecoregions: the Pacific coastal zone, the Andean highlands, and the Amazonian region (mainly to the east of Mocoa).
[77] Ibid., pg. 47.
[78] Ibid., see pages 47-49 for increased freight projections along the road under low and high scenarios between 2012 and 2030.

intermodal corridor will be activated."[79] In practice, however, this SEA, when carried out, became a Regional Environmental Assessment (REA), briefly described below, which, while clearly of great relevance, seems to have focused on a more limited part of this overall corridor.

Following a detailed analysis of the four alternatives considered in relation to the road connection between San Francisco and Mocoa, including the "no project" alternative, taking environmental and social, together with other, factors into account, and providing a more detailed description of the recommended option, [80] the ESMR describes the studies undertaken in relation to the potential environmental and social impacts of the alternate road. The comprehensive of these is a "Regional Environmental Assessment" (REA) undertaken between July 2007 and March 2008 by a Spanish-Colombian consulting consortium and presumably financed by the Bank's Technical Cooperation project, representing the proposed Strategic Environmental Assessment (SEA). However, in practice, the REA seems to have been narrower in scope – both territorially and substantively – than the SEA originally proposed by the Bank.

Regional Environmental Assessment (according to the ESMR). The "region" – and, thus, de facto, direct and indirect area of influence of the alternate road – studied entailed the municipalities of Nariño, Pasto, Santa Rosa, Mocoa, Colón, Santiago, Sibundoy, San Francisco, Villa Garzón, Orito, Puerto Caicedo, Valle de Guamuéz, San Miguel and Puerto Asís, covering a total area of 14,586 square kilometers, 72 percent of which is in Putumayo department, 21 percent (Santa Rosa) in the department of Cauca, and 7% in the municipality of Nariño in the department of the same name. However, while arguably focusing on the region of highest impact of the alternate road in the short-run, even leaving aside the non-Colombian parts of the area of influence of the Tumaco-Pasto-Mocoa-Puerto Asís-Belém do Pará corridor, this study area excludes a substantial share of its potential Colombian portion as well, including both the extensive Amazonian region to the east of Mocoa and Puerto Asís and most of the corridor between Mocoa and Bogotá to the north, together with much of the corridor westward from the municipality of Nariño (just to the northeast of Pasto) to Tumaco. Neither how this particular study area was determined nor why other parts of the larger corridor were excluded is clear.

According to the ESMR, "the principal objective of the REA was to analyze early on the possible environmental and socio-cultural risks and opportunities, induced at the national,

[79] Inter-American Development Bank, Términos de Referencia Elaboración de Una Evaluación Ambiental Estratégica da la Via Pasto-Mocoa, op. cit., Objetivo y Alcance de la Consultoría, pg. 12.
[80] ESMR, op. cit., see pp. 49-80 and 80-92, respectively.

departmental, and municipal levels by the improvement of the Pasto-Mocoa road, in order to permit their discussion by key institutional actors prior to its implementation." It goes on to affirm, appropriately, that "the need for the REA derives from the consideration that construction of the alternate road should not only include the works and actions needed to improve the overland communication between Pasto and Mocoa, but should also respond to the direct, indirect, synergistic, and cumulative impacts that these improvements could induce on the environment and the population along the road corridor."[81] The specific objectives of this exercise, in turn, were to:

- generate mechanisms to identify actors and participation scenarios at the regional analytical scale that involves key stakeholders in the processes of identification, analysis and monitoring of the environmental, socio-cultural, and economic opportunities and risks that affect the [undefined] Regional Sustainability System of the Pasto-Mocoa road;
- identify and assess the induced (indirect, synergistic, cumulative, etc.) environmental impacts generated in the region as a result of the improvement (*adequación*) of the Pasto-San Francisco stretch and construction of the San Francisco-Mocoa alternate road; also, it would evaluate the exogenous and endogenous transport flows that would be generated in the region;
- generate useful decision criteria for the authorities responsible for orienting the sustainable development of the region so that they can identify (*apuntalar*), direct and/or reorient territorial organization (*ordenamiento territorial)* and conservation processes for the protected areas in the region; and,
- formulate an Action Plan in which regional guidelines are established that permit, prevent, mitigate, control, or compensate regional effects.[82]

The resulting Action Plan was expected to have four basic components: (i) territorial organization; (ii) sustainable regional biodiversity management; (iii) strengthening of indigenous communities in the Putumayo region; and (iv) measures to take advantage of economic opportunities. While this is good, several questions can be raised concerning the adequacy of the spatial and substantive scope of the REA and its associated action plan. As already indicated above, based on the ESMR alone it is not evident what actions are proposed in the REA to

[81] *Ibid*., pg. 94.
[82] *Ibid*., pg. 95.

address possible indirect environmental and social impacts associated with the improved road connection outside the area of the proposed expanded Forest Reserve. This would include the area within the proposed DMI – which is described in the REA as a "buffer zone (*zona de amortiguamiento*) for the economic activities of Mocoa" – both between the Reserve and Mocoa, including along the alternate road itself, and, perhaps more importantly, between Mocoa and Puerto Asís, as well as areas within the Colombian Amazon region beyond the proposed DMI – to which access will also be enhanced as a result of the improved road. The extent to which possible cumulative impacts resulting from other regional and local development initiatives acting together with the road improvement itself in the area of influence of the Pasto-Mocoa highway (and its extension to Puerto Asís) were identified and assessed as part of this exercise is likewise unclear.

V. The REA Itself

Additional information pertaining to these questions can be found in the overview report for the very interesting REA itself, which is available via the Bank's external website. This document first clarifies that the scope (*ámbito*) of the study is the "physical space or area where, ***in a direct manner***, it is assumed that the effects of the improvement of the connection between Pasto and Mocoa will be generated. This territorial space is a spatial reference which permits making tangible (*permite tangibilizar*) the region affected by the road improvement" and was determined "through a discussion exercise between the consultants and the staff of INVIAS and IDB, with one of the criteria for identification of the study area being municipal boundaries, such that its geographic limits correspond to the geographic limits of the affected municipalities."[83] Thus, the chosen study area refers to what was considered to be the municipalities located in the direct area of influence of the road to be improved. Possible indirect effects on areas farther afield, consequently, do not appear to have been taken into account.

However, the REA does recognize that this direct area of influence will (continue to) be affected by other activities in addition to the road and that will interact with it, observing that: "….the study area has the particularity, beyond its territorial aspect, that a set of factors exist in an incremental manner that act together with the road construction *per se*. Among these factors, the increase in endogenous and exogenous flows and the presence in the zone of other economic

[83] See Unión Tau Temporal Consultora Ambiental, PROINTEC, Ambiental Consultores, *Evaluación Ambiental Regional de la Via Pasto-Mocoa, Informe Final Ajustado Resumen Ejecutivo EAR*, Bogotá, Colombia, June 16, 2008, (hereafter REA), pg. 6. My emphasis.

activities whose use of the Pasto-Mocoa corridor will affect the Regional Sustainability System, increasing the pressure on that System, should be highlighted.

Another particularity of the scope of the study, refers to the ***internal differentiation of the region***, in other words that the area is not uniform in its socio-cultural, economic and environmental make up, but there nevertheless exists a permanent flow of interchange (*flujo de intercambio*) between both zones, conditions that are, in short, the primary constituting factor (*constituyente primario)* of the Region.

Under these conditions, the scope of the study, in its internal configuration, is composed of **two epicenters**, whose figure is intimately linked with the concept of territorial epicenters, which are constructed from the conjugation or similarities of bioclimatic conditions, communication relations and commercial, social and cultural interchanges that take place in a specific area (*entorno*) or space. By the same token, the recognition or definition of the zones ***does not derive from a mere geographical limitation whose denomination corresponds only to topographic aspects,*** but rather corresponds to a territorial configuration in which the groups or zones that compose the Region are integrated in units that interrelate among themselves…"[84]

These two "territorial epicenters," in turn are: (i) the "Andean" one, consisting of the "high zone" constituted primarily of the municipalities of Santiago, San Francisco, Sibundoy, Pasto and Colón to the west; and (ii) the "Amazonian" one, corresponding to the "low zone" composed of the municipalities of Mocoa, Puerto Asís, Santa Rosa, Villa Garzón, Puerto Caicedo, Orito, Valle de Guamuéz, and San Miguel.[85] It should also be noted that the southern boundaries of the municipalities of Puerto Asís, San Miguel and Valle de Guamuéz in this latter zone are on Colombia's border with Ecuador, which, further to the southeast, is formed by the Putumayo River itself that also separates Colombia from northern Peru. It should be noted that the mountainous topography between both the existing road from San Francisco to Mocoa and the alternate to be constructed under this project, which is located farther away from (i.e., to the north of) the Putumayo River, apparently represents a significant barrier for land occupation in the area close to the river.[86] Even so, some transboundary "spill over" effects may be possible, especially over the medium to longer term, affecting northern Ecuador. However, the REA does not take these into account.

[84] *Ibid*., pp. 6-7. Emphasis in the original.
[85] *Ibid*., pg. 6. The REA also observes that Santa Rosa, to the north, is included because of its relation with Mocoa.
[86] Personal communication from Maria da Cunha, who is personally familiar with the project area.

The study region has been subject to substantial in-migration over the past several decades and is the location of mineral and hydrocarbon extractive activities, together with an active agricultural frontier, especially in Villa Garzón, Puerto Asís and Mocoa.[87] Between 1985 and 2005, the area was "characterized by the phenomena of fragmentation, illicit crops, expansion of the agricultural frontier, and the growth of urbanization," according to the REA.[88] This and other factors, in turn, have resulted in "instability in the occupation of the soil by economic activities, which has had repercussions (*repercute*) on the conservation of biodiversity," while, "over the last decade, the appearance of activities on the margin of the state of law (*estado de derecho*) has generated dissuasive or regrowth dynamics (*dinámicas disuasivas o de rebrote*) in new zones, which has amplified the zones of intervention."[89] Thus, at least part of the study region – and, therefore, of the direct area of influence of the San Francisco-Mocoa alternate road – appears to have been subject to considerable occupation and housed significant economic activities, both legal and illegal, over the past several decades, including agricultural frontier expansion and rapid urbanization.

Elsewhere, the REA observes that, unlike other parts of the country, the regional economy is quite diversified, and goes on to briefly describe its agricultural, ranching, forestry/timber extraction, mining, and hydrocarbon activities." It describes governance in the region as being "low,"[90] which is typical of resource frontier regions, especially in Amazonia.[91] This dynamic, complex, and problematic situation does not come across clearly in the ESMR, however. Nor does the ESMR indicate how construction of the alternate road may affect – either positively or negatively – these activities, the intensity and nature of the related land occupation and use process, any associated potential future environmental and social impacts, or what measures would be required to address these impacts.

Based on its diagnosis, the REA lists the "key themes" or concerns – both positive and negative – in the study area in the following categories:

Environment: existence of high levels of biodiversity and a high number of protected species; evidence of deterioration in surface water sources; unsustainable forest extraction

[87] Unión Tau Temporal Consultora Ambiental, PROINTEC, Ambiental Consultores, op. cit., pp. 10-11, 17-18.
[88] *Ibid.*, pg. 20. Between 1960 and 1985, in turn, petroleum exploration reportedly resulted in a 2000 percent expansion of the regional population, according to the REA.
[89] *Ibid*., pg. 22.
[90] *Ibid*., pp. 22-23 and 25.
[91] See, for example, Robert Schneider, *Government and the Economy on the Amazonian Frontier*, World Bank Environment Department Paper No. 11, August 1995, for a discussion of the situation in the Brazilian Amazon, although without the added problem of illicit crops, in the 1980s and first half of the 1990s.

processes; unsustainable extraction of fauna and non-timber flora; deficiencies in sanitation infrastructure in the human settlements; and loss of ecosystem functionality and integrity;

Social: permanent and growing dynamic of migration flows and forced displacement; deficiencies in the provision of social services; important cultural diversity and wealth; presence of numerous indigenous communities in the demographic and social dynamics of the region; conflicts around the indigenous communities' territories and risk of their worsening due to the weaknesses in property rights; erosion of the cultures and quality of life of the indigenous communities; low quality of life indices of the population; and change/deterioration of the cultural patterns;

Economic: consolidation and growth of the presence of illicit crops in the region; historical tendency and important potential to receive direct investment in productive macro-projects; limitations to the commercialization of local production and difficulties to access the formal financial system; weak local entrepreneurial capacity; potential to take advantage of endogenous and exotic products and tourism development; weak and poorly structured economy, principally extractive in nature; little technology transfer to local communities; predominance of low productivity agricultural and ranching activities which are limited by the soil conditions; and incipient and poorly structured development of new agro-ranching dynamics;

Institutional: weakness and lack of coordination of national, regional, and local institutions with responsibilities (*competencias*) in the region; existence of social and economic development plans and instruments with low regional impact; incipient levels of inter-institutional coordination in some parts of the area; low levels of governability; insecurity due to the presence of illicit activities; and, environmental institutionality developed with limited capacity for monitoring and control; and

Territorial: growth of spontaneous occupation of the territory resulting in a fragile territorial structure; existence of deficient and disarticulated territorial organization mechanisms without a vision of the region; land use conflicts; deficiencies in the structure of property rights; growth of urbanization and the territorial development of population centers with deficient supply of urban services that structure (*ordenar*) their development; the incipient ordering of the territory on the basis of conservation criteria; a deficient internal communication system; and insufficient external communication infrastructure.[92]

[92] REA, *op. cit*, pp.27-29.

Considering all these themes, the REA then identifies what it refers to as the interrelated "guiding dynamics (*dinámicas rectoras*) for the present state and evolution" of the study region: (i) institutional weakness; (ii) reproduction of the economic weakness; (iii) inhibition of endogenous potential; (iv) permanent or systematic deterioration of biodiversity; (v) territorial disintegration and conflict; (vi) reproduction of low levels of quality of life; (vii) deterioration of the social fiber (*marco social de convivencia*); (viii) resistance and erosion of the indigenous communities; and (ix) change/deterioration in cultural patterns.[93] It affirms that "this set of dynamics and the analyses undertaken reveal a fragile system submitted to a dynamic of systematic decompensation (*descompensación*), which leaves the accumulation of a deficit or singular externalities of an environmental, social, economic and territorial nature." And it goes on to conclude that this fragility is the result of: "a high degree of internal disarticulation due, in the first place, to the systematic inhibition of the strategic regulation mechanisms of the system, i.e., the institutions, the policies, and governability. This inhibition is difficult to control endogenously (*dificilmente controlable endógenamente)* because it is the result of an exogenously induced development model whose processes and dynamics surpass the management capacities of the system, which is systematically translated into the invalidation of the institutionality (*invalidación de la institucionalidad*) to resolve the collective problems…All of this translates into environmental, social, economic and territorial indicators that denote very low efficiency."[94]

In order to effectively address this situation, the REA identifies five, again ultimately interconnected, "potential or latent" dynamics for: (i) strengthening the regional social structure; (ii) institutional legitimization; (iii) strengthening territorial integration; (iv) strengthening environmental authority; and (v) "endogenizing" the economic growth pattern.[95] With all of the above as background, the REA then assesses the effects of the road project, starting with the "driving forces" (*fuerzas motrices*) expected to be produced by it – i.e., improved interregional, national and international connectivity, the increment in transport flows, and intervention in the territory, followed by what are characterized as the "primary effects" that are expected to occur as a result of these forces, divided into several categories: (i) territorial effects; (ii) economic effects – more specifically increases of: transport services, agricultural and ranching activities

[93] *Ibid*., pg. 35.
[94] *Ibid.,* pg. 35. Again this is reminiscent of Schneider's earlier analysis of the political economy and governance situation in the Brazilian Amazon in the 1980s and 1990s.
[95] *Ibid*., pg. 36.

and production (milk, potatoes and beans) in the Valle del Sibundoy, regional, national, and international tourism, forest production for the interregional, national and international markets, and commercialization of "exotic" products and biodiversity in the national and international market, together with estimation of the economic repercussions of the Pasto-Mocoa road and effects on the "disorderly" occupation of the region due to the increment in economic activity; and (iii) social effects – expectations and social conflicts and intensification of the process of alteration and loss of cultural "cosmovisions." The REA also sought to identify the induced and synergistic or systemic indirect effects of the road and its cumulative effects on biodiversity, with the latter being the result of both the primary and the induced effects of the road together with other initiatives and infrastructure in the region.[96] The REA does not explain, however, why its analysis of cumulative impacts is restricted to biodiversity, thus leaving aside other potentially serious cumulative environmental effects, such as with respect to water quality and soil degradation.

In the case of each of these potential effects, the REA starts with certain assumptions. In the analysis of social effects, for example, the premise is that "the increment in the transport flow motivated by the connection between Pasto-Mocoa could become an incentive for the activation of social conflicts in the region, with the induced effect of deterioration in regional governability." It likewise observed that "construction and operation (*puesta en marcha*) of the San Francisco-Mocoa road could motivate conflicts with the indigenous communities in the region, as this could be used as a pressure mechanism (*mecanismo de presión*) to require (*exigir*) or claim rights and unsatisfied promises" having similarly adverse effects on regional governability as the aforementioned social conflicts. Also with respect to indigenous peoples, the REA affirms that "construction of the alternate road supposes a new cultural penetration route to the indigenous territories in Putumayo and, beyond the Colombian Amazon, which, it is supposed, contributes to a historical process of alteration and loss of the cultural cosmovisions of the indigenous communities of the region, with the induced effect of the loss of regional social cohesion."[97]

With regard to cumulative effects on biodiversity in the area, the REA concludes that they would be "high for the zone studied and taking into account the potential pressures and the high affected biodiversity values," noting further that this assessment "assumes and considers the

[96] *Ibid.*, pp. 36-38.
[97] *Ibid.*, pp. 49-51.

continuation of the current settlement tendencies and the weakness in the institutional definition and control of the territory." It also states that "the special characteristics of the study area [mean] that the joint pressure of the [development] initiatives affect, in a special manner, the zones dominated by high and very high biodiversity, and, thus, vulnerability in the face of such pressures. In other words, the effect on biodiversity will be predictably greater than would be expected in areas of lesser value submitted to similar pressures…from which the importance of adopting preventive and management measures and to control the emergence of new pressures is derived." [98] In short, unless firm action is taken to protect it, biodiversity in its direct area of influence is at particular risk as a result of construction of the new road.

Despite the above assessments on balance, however, the REA reaches a much more upbeat conclusion – although it is not entirely clear on what this optimism is based – to the effect that "the improvement of the Pasto-Mocoa road can, as a function of its diverse territorial, economic, social and environmental effects, modify the state and behavior of the regional sustainability system, making it more sustainable in the long run." Among other things, although it is not explicitly stated, this would assume that the proposed mitigation measures will, in fact, be fully and properly implemented and sustained. The REA also observes that the road is expected to have essentially positive effects in both economic and territorial terms, including in terms of territorial integration at the regional level, while the principal potential adverse effects would be in terms of the road's possible impacts on indigenous people and biodiversity.[99] Hence, the proposed Action Plan, which is summarized in the rest of this document,[100] focuses on the actions considered necessary to address these issues. However, as indicated above, this analysis seems to overlook numerous relevant considerations, including potential indirect and cumulative environmental impacts other than on biodiversity and, more broadly, possible indirect – including induced development – and cumulative impacts outside the immediate study area, both in Colombia itself and potentially also in neighboring Ecuador, which are likewise bypassed in the associated action plan. Potential adverse social impacts on vulnerable local populations other than indigenous communities, such as poor *campesinos* who may be negatively affected by other groups attracted to the region, also seem to be generally overlooked in this assessment and the associated Action Plan.

[98] *Ibid*., pp. 56-57.
[99] *Ibid*., pp. 57-59.
[100] See pp. 62-72.

VI. The Forest Reserve Management Plans

A second study, which was conducted in parallel to the REA and will not be described in detail, was carried out for preparation of the Basic Environmental and Social Management Plan (PBMAS) for the Upper Mocoa Basin Protection Forest Reserve (RFPCARM). It was undertaken between May 2007 and July 2008 by another consulting firm under the technical direction of Corpoamazonía, which is responsible for administration of the Reserve, and also financed by the Bank's TC project. The study area for this plan involved 69,174 hectares (or roughly 692 square kilometers) in Mocoa and San Francisco municipalities, including the existing Forest Reserve covering 34,600 ha, created by the National Renewable Natural Resource Development Institute (INDRENA) in 1984.

The main objective of the Plan is to "define the necessary actions for conservation of the forest reserve, including redefinition of its boundaries, which were determined on the basis of a watershed supply area criterion for a small hydropower plant in Mocoa intended to provide electrical energy to this city and other settlements located in the middle and lower Putumayo [River valley], but was never built." The ESMR then observes that, within PBMAS, the boundaries of the Reserve area would be redefined "on the basis of ecosystem criteria, in which not only would the high foothills (*piedmonte*) near the [existing] reserve be included as part of the area to be protected, but the fact that the reserve is located in a strategic zone that connects the principal regional and national ecosystems of the Colombian Massif will also be taken into account."[101] The PBMAS would likewise include a Management Plan for the expanded Reserve and for two additional proposed "Declared Areas," or buffer zones, for additional protection -- the Mocoa Integrated Management District (DMI), to the immediate east of the Reserve near Mocoa with the purpose of ensuring that the economic activities that are developed in the vicinity of this town "respect the boundaries of the Reserve and promote its conservation as a strategic water source for development" and the Protected-Production Forest Reserve (PPFR) on the western and central parts of the existing Reserve, which would serve similar functions in relation to San Francisco but also recognizes "the reality of existing communities settled in its interior in the Vereda de Minchoy."[102] The PBMAS Action Plan contains four "strategies" that were reportedly fully incorporated into the PMASIS Action Plan for: (i) territorial organization; (ii) conservation and sustainable development of the "management areas;" (iii) linking the

[101] ESMR, *op. cit.*, pg. 96.
[102] *Ibid.*, pg. 98.

community to conservation of the management areas; and (iv) operation and control of the Declared Areas, respectively.

VII. The Upgraded EIA

The third major study summarized in the ESMR and also undertaken in parallel, but, unlike the two previous ones, fully financed by the Colombian Government, was the updating of the Environmental Impact Assessment (EIA) for the alternate road to meet MAVDT's requirements. In this connection, the ESMR points out that, as a result of the updating and complementing of the EIA for the alternate route, it was possible to go beyond these requirements to "achieve the objective of having a special engineering design that minimizes the intervention in the forest reserve compared with the original design."[103] The final EIA proposals resulted in three specific outputs: (i) a management plan for construction and operation of the alternate road; (ii) an obligatory environmental investment plan (*plan de inversion ambiental forzosa*); and (iii) a financial support plan for execution of PBMAS. The first of these "comprehends prevention, mitigation, and control actions and works applicable to the special engineering design and also including special mitigation measures appropriate for a protected area such as elevated passageways for fauna on the overpasses, bridges and drainage works, minimization of the berms along the roadway to avoid settlement along the right-of-way or the stopping of vehicles seeking to extract resources from the reserve, adaptation of the works camps located at the entrance and exit for the reserve as control points for access to it, among other measures." The second refers to the use of a mandatory fund corresponding to 1 percent of the value of the road investment to be applied in the watershed affected by the alternate road project and for the required forest compensation because construction of the road will consume close to 95 hectares within the existing Reserve. The third is self-explanatory.

VIII. Diagnostic Studies, Impact Analysis, and Proposed Mitigation Measures

The ESMR then presents the findings of the socio-environmental diagnostic studies of the project "region." The environmental studies include a brief description of the various protected areas in the region, followed by discussions of its physical characteristics (i.e., climate, geology, geomorphology, water resources, vegetation and land use, flora and fauna) and social aspects (population and land tenure) and economic activities in both the corridor from Pasto to Mocoa as

[103] *Ibid.*, pg. 99.

a whole and the area of influence of the proposed expanded Forest Reserve, including agriculture, ranching, forestry, infrastructure, and mining and petroleum concessions and exploration),[104] before turning to an analysis of the road construction project's most significant potential environmental and social impacts under the headings mentioned at the beginning of this section.[105] These potential impacts and associated proposed mitigation measures are then summarized in a table which focuses on three levels: (i) impacts on regional ecosystems, again with the "region" in question delimited as above; (ii) impacts on the existing and proposed expanded Forest Reserve; and (iii) impacts on the populations of Mocoa and San Francisco related to the Reserve and road project.[106] Under the first heading, for example, the ESMR highlights "the regional dynamic of fragmentation and uncontrolled exploitation of natural resources" and "expectations of indigenous communities." The associated mitigation measure for the former is described as being the formalization, expansion, and improved management of the Forest Reserve, as detailed in the PBMAS, whose financing is included in PMASIS. As concerns the latter, the Report observes that: "the principal indigenous communities in the region are located in the Andean zone, in the Sibundoy Valley; these communities have shown interest in the constitution of an Indigenous Mining Zone for the reserves (*resguardos*) of the Sibundoy Valley, which is foreseen in PMASIS. In addition, support for the development of a Working Group (*Mesa de Trabajo*) with indigenous communities led by the Ministry of Interior is contemplated in the PMASIS [which] also includes support to strengthen the Indigenous Leaders (*Cabildos*) of the Sibundoy Valley, as well as a support program for development of integral [quality of] life (*planes integrales de vida*) for the Andean and Amazonian indigenous communities in the region."[107]

The balance of this extensive report describes in detail the elements and components of PMASIS, which have already been briefly summarized above.[108] It, thus, provides an excellent basis for guiding implementation of this key second component of the San Francisco-Mocoa alternate road project, and, especially those actions entailed in establishing, expanding and/or formalizing, as well as strengthening environmental and social management of, the Forest

[104] *Ibid.,* pp. 109-145.
[105] For details, see *Ibid*, pp. 148-157.
[106] *Ibid.,* Table 7.4, pp. 161-164.
[107] *Ibid.,* Table 7.4, pg. 161.
[108] *Ibid.,* pp. 165-227 for the specifics. The costs, implementation responsibilities and financing sources for PMASIS are further identified in the following chapter, as are the special disbursement and other conditions associated with it, and proposed Bank monitoring and supervision arrangements in pp. 228-238.

Reserve and its adjacent buffer zones. It, thus, also provides an excellent basis for the Bank to carefully monitor and supervise the plan's execution.

The area covered by the expanded Forest Reserve, plus the proposed new Production-Protection Forest Reserve (PPFR) – which would involve a total of 5,770 hectares along a very substantial part of the immediate road corridor and which, at the time the diagnostic studies were carried out, housed just over 1,500 people in 327 families occupied in agricultural and ranching activities – beyond the 65,289 hectares proposed to be added mainly to the north, but also somewhat to the south, of the existing Reserve at a greater distance from the alternate road, together with the proposed Integrated Management District (DMI) – this area involving more than 50,650 hectares that would surround the town of Mocoa and extend for a considerable distance adjacent to the expanded Forest Reserve both to the north and the south, as well as, to a lesser extent, to the east – would significantly increase the territory surrounding the new road that would come under greater land use control and environmental protection, at least for an anticipated 15 year period. If implemented as planned, the actions proposed in the ESMR will go a long way toward avoiding and/or mitigating and compensating for the potential adverse environmental and social impacts of the new road within the aforementioned study region.

However, as observed above, despite their stated objectives and the requirements of the Bank's Environmental Assessment Policy, less attention appears to have been given in these diagnostic and impact studies and the associated environmental and social mitigation and management plans to possible indirect environmental and social effects associated with new development induced by the new road investment outside this area. And even within the proposed DMI area immediately to the east of the Forest Reserve through which other important north-south and east-west roads currently pass, it is unclear how specifically – and how well – the possible cumulative environmental and social impacts of increased use of these roads and associated new settlement and/or land occupation, were assessed. More generally, the studies do not identify or assess the possible indirect, including induced development, and cumulative impacts on either the environment or local populations at the level of the road corridor's broader area of influence, as foreseen in the Terms of Reference for the SEA, in view of: (i) the expected increase in traffic, including freight traffic, along the corridor over time; and (ii) the improved access and reduced transport costs to and within the project region and adjacent areas in relation

to other parts of Colombia, including Bogotá to the north and the Amazon region to the east, and neighboring Ecuador and Peru – and eventually also Brazil – that will be associated with it.

IX. Implementation Experience

Even though the loan for this project was approved in December 2009, it only became eligible for disbursements in September 2011 and, as of May 2012, just US$ 5.3 million has been disbursed. Thus, project execution as such is still in a very early stage, and it is not yet possible to comment on implementation experience to date, other than the fact that Bank loan effectiveness conditions have now apparently been met following considerable delays, while two of the associated Technical Cooperation operations, especially that involving support to some of the indigenous communities in the project area, are also still ongoing.

In addition, in July 2011, the project became subject to a formal complaint to the Bank's Independent Consultation and Investigation Mechanism (ICIM, or MICI in Spanish)[109] by several of the project-affected indigenous groups over an alleged lack of prior consultation regarding the new road investment and associated environmental protection measures. More specifically, according to the ICIM website, the Inga and Kamentsa indigenous communities claim that they have not been "included as an integral part of project design and implementation, that the project does not have an appropriate consultation process, and that it presented concerns related to possible irreversible environmental and social impacts on these communities." In addition, the requesters allege project-related "trespassing and invasion of indigenous properties, inadequate participation of indigenous communities in project decision making and potential negative environmental, health, and socio-economic issues." [110]

This claim also seems to involve long-standing underlying land rights and tenure issues between these same indigenous groups and the Colombian Government in part of the area to be included in the proposed expansion of the Mocoa Forest Reserve.[111] In August 2011, the Bank's ombudsperson judged the request to be eligible for consideration and it has been officially registered by ICIM, as indicated on its external website. The next step will be for the "Ombudsperson to begin an assessment process to determine if a dialogue among the Parties is

[109] The ICIM, which succeeded the Bank's Inspection Panel, was instituted by a policy approved by the Bank's Board of Directors in February 2010. According to the Bank's external website, this policy "establishes an independent forum and process to address complaints from communities and individuals who allege that they may be adversely affected by IDB-financed operations. The ICIM oversees compliance with the IDB's social and environmental policies."
[110] As CO-MICI-001/2011.
[111] Personal communication from Maria da Cunha.

feasible paying special attention to a Popular Action related to contesting the environmental licensing and obtaining precautionary measures aimed at delaying construction of [the alternate road], issues that differ from the concerns presented to the ICIM." The associated assessment report is expected to be completed by December 19, 2011.[112] It is unclear, however, if this mediation process is unsuccessful and especially if the independent Colombian judicial review in response to the aforementioned Popular Action should resolve that a new environmental license is necessary, how this will affect project implementation.

X. Conclusions and Lessons

For the most part and at least during the pre-construction phase, the Bank appears to have approached identification and assessment of the environmental and social impacts of the Pasto-Mocoa road – and of the San Francisco-Mocoa alternate road in particular – in a largely appropriate way. Leaving aside for the moment the question raised above as to whether the spatial and substantive scope of the environmental and social impact analysis incorporated in the Regional Environmental Assessment (REA) was sufficiently broad, the real test will come with the actual construction of the new road and the application of the measures prescribed to minimize, mitigate and/or compensate for its direct and indirect impacts, including expansion and strengthening the management of the Forest Reserve through which it passes. The project has just now become eligible for disbursements and the IDB undertook a start-up mission in September. It is, thus, essential that the actions described in the ESMR are properly implemented and that this process and its results are carefully monitored and supervised by the Government and the Bank. This should include arrangements to identify and monitor possible indirect environmental and socio-cultural impacts of the new road – and of the improved transport corridor connection more generally – including those resulting from induced settlement and economic development, beyond, as well as within, the specific area that was studied as part of the REA. Should there be non-compliance with the Bank's safeguard (or other) requirements, moreover, it is equally essential that adequate steps be taken to remedy this situation in a timely manner.

In order to avoid repetition of the conclusions and lessons presented in the earlier papers in this series on IDB-supported road improvement and/or road-related projects in the Brazilian

[112] CO-MICI-001/2001, Complaint Detail.

Amazon (primarily the state of Acre), Bolivia, Panama and Peru (see footnotes 113 and 114 below for example), several findings and implications of the above review merit reiteration and/or further elaboration:

1. Bank project documents, especially Loan Proposals, should provide greater information about the associated environmental and social management arrangements, including maps of the affected areas. In the present case, a more detailed description of the second component of the alternate road project, PMASIS, is presented in an annex containing the Environmental and Social Management Report (ESMR, or IGAS in Spanish), but its contents should be spelled out in greater detail in the main text of the Loan Proposal itself. In this case, moreover, the ESMR summarizes – and, thus, provides only an overview of -- the results of three other studies, which are also available electronically in the project file through the Bank's website, but in the case of one of these at least, the REA, only the summary of is presented and not the full study. Presumably, the full report or reports are available at the Bank's Public Information Center, or at least should be if it/they are not.
2. It is likewise important that the project's direct and indirect area of influence – for purposes of potential direct, indirect and cumulative environmental and social impact identification and remediation – be explicitly defined and indicated in Bank Loan Proposals, together with a clear explanation as to how this area was determined. In the present example, the ESMR annex does indicate the area that was taken as the "study region" for the REA, but this seems to have been the area considered likely to be directly affected by the road improvement project and not the larger area that may be indirectly affected. In addition, the region considered was defined *apriori* as one that would not involve potential transboundary impacts, even though such impacts may possibly occur over the medium term as a result of improved connections of the eastern part of the project area with neighboring Peru and Ecuador, and, over the longer term, with the Brazilian Amazon region. More importantly, it also does not include significant areas to the west, north, and east within Colombia itself, especially along the route north to Bogotá, that may be affected by the new settlement and productive activity with their associated environmental and social impacts induced in part by the project. Specifically, this area includes the bulk of the department of Nariño (i.e., most of the existing road

corridor between Pasto and Tumaco on the Pacific coast), which, together with the department of Putumayo, is expected to benefit from the improved road connection in economic terms, most of what is likely to be a more heavily traveled corridor between Mocoa and Bogotá, and most of the southern part of the Colombian Amazon region to the east of Mocoa and Puerto Asís, to which physical access will also be improved by the road. These areas, it would seem, would constitute parts of the indirect area of influence of the project, yet possible impacts within them were not considered.

3. While no explanation is given in Bank project documents as to why the proposed Strategic Environmental Assessment (SEA) – whose Terms of Reference were annexed to the Operations Plan for the Bank Technical Cooperation project that financed it – was subsequently undertaken as a Regional Environmental Assessment, this nonetheless suggests some narrowing of the focus of this analytical exercise in relation to the original intention with which the Bank apparently concurred. Under such circumstances, the Bank should clarify decisions that result in an apparent alteration of its original intent, especially where interpretation of its environmental and social safeguard policies is concerned.
4. In addition to the questions regarding the spatial scope of the REA and resulting environmental and social management plans, there also appear to have been substantive limitations on this exercise. Potential cumulative impacts on environmental quality, other than with respect to biodiversity, do not appear to have been considered, for example on water quality and soil degradation. Similarly, potential social impacts seem to have been largely restricted to possible effects on indigenous communities. Potential project impacts on existing low-income rural populations, including the *campesino* communities located in what is proposed as the new Protection-Production Forest immediately adjacent to much of the alternate road itself, as well as elsewhere within the existing and proposed expanded Forest Reserve and the proposed Integrated Management District, for instance, also appear to have been largely overlooked. These impacts may be of considerable relevance to the extent that the new environmental protection measures, including those for biodiversity conservation, to be implemented in connection with the project may result in lowered access of these resident populations to natural resources, including flora

and fauna, on which their livelihoods partially depend at present, and, thus, to decreased incomes and employment.

5. More generally, even leaving aside the areas outside the "region" which is the focus of the diagnostic studies contained in the REA, this document's description of the present nature of this area as a dynamic, complex, and problematic active resource frontier zone characterized by low governability suggests that it will be very difficult, if not impossible, to effectively control the additional "development" pressures, including those on natural resources, likely to be induced by the road improvement project, together with other development interventions, especially outside those areas, important as they undoubtedly are, proposed to come under expanded and strengthened environmental protection. Under the circumstances described in the REA itself, in short, its conclusion that the effects of the project will be largely positive can be questioned, even assuming that the proposed biodiversity conservation and indigenous peoples protection measures are fully implemented, which is still to be determined, as project implementation is just now starting to really get underway.
6. This suggests that, as in the case of Acre in the Brazilian Amazon, what is required is a much broader longer-term regional development project, in which the road improvement is just one component.[113] Among other things, such a project should include considerable strengthening of local institutions, including department and municipal governments and NGOs, as well as effective land use controls, forest, biodiversity and other environmental protection measures, and the promotion of alternative livelihood activities for the affected populations similar to those being supported by the Bank along the Amazonian portion of the Interoceanic/IIRSA Sur Highway in Peru.[114]
7. It likewise suggests the need to take a truly multi-sectoral spatial approach to development of the "economic corridor" formed by the Tumaco-Pasto-Mocoa-Puerto Asís-Belém do Pará axis as a whole – including the likely consequences of its intersection with IIRSA's "Andean" corridor – similar to the approach taken by the Asian

[113] See John Redwood III, Managing the Environmental and Social Impacts of Major IDB-Financed Road Improvement Projects in the Brazilian Amazon: The Case of BR-364, consultant's report, Washington D.C., July 2011.
[114] See Redwood, Managing the Environmental and Social Impacts of the Major IDB-Financed Road Improvement and Road-related Projects in Peru, op. cit.

Development Bank in the Greater Mekong Subregion in Southeast Asia.[115] Even if the Brazilian portion of this corridor is not considered for the moment, given that the fluvial connection with Puerto Asís does not appear likely to come to fruition in the immediate future, the Colombian section should be considered as a whole. IIRSA, and, thus, the Bank – through its revitalized participation in the tri-partite Technical Committee to support this initiative – as well as through its Technical Cooperation and lending operations, can and should play a major role in this regard.

8. However, as indicated above, the Bank's current organization makes it more difficult to work across sectors and, thus, to prepare, appraise and supervise multisectoral operations such at the type that would appear to be most appropriate in cases such as the present one. Bank management should, therefore, proactively seek to develop ways to substantially reduce, if not eliminate, this significant internal structural constraint which is beyond the capacity of sector technical staff to resolve.
9. As also observed above, this is clearly a high risk Category A operation (which by definition are higher risk than most projects) from the standpoint of its potential adverse environmental and social impacts, as well as one that has involved very high transactions costs with a broad range of client country (and some international) stakeholders in both government and civil society. This being the case, the Bank needs to provide adequate financial resources, management support and other incentives for the sector staff who are engaged in such operations.
10. Finally, the Bank should likewise ensure that all significant issues and changes in design that arise, including as a result of interactions with other stakeholders, during project preparation are properly documented, the same also applying to those that occur during implementation and supervision, so that the experience gained and lessons that emerge from how these issues were handled can be made available for the benefit of other Bank staff and clients to help guide the planning and execution of similarly complex and risky operations in the future.

[115] See John Redwood III, Spatial Approaches to Sustainable Development: The Asian Development Bank's Role and Experience in the Greater Mekong Subregion, Its Relevance for the IDB and Possible Application in the Amazon Basin, consultant's report, Washington D.C., July 2011.