Executive Summary

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Executive Summary

The *Initiative for the Integration of the Regional Infrastructure of South America* (IIRSA) is a visionary program that will transform the countries of South American into a community of nations. Unlike past diplomatic efforts and customs unions, IIRSA is an eminently practical initiative that proposes to physically integrate the continent — long an historical goal of South America's democracies. However, many of IIRSA's planned investments will take place on parts of the continent with ecosystems and cultures that are extremely vulnerable to change. This includes the world's largest intact tropical forest, the Amazon Wilderness Area, which is situated between the Tropical Andes and the Cerrado Biodiversity Hotspots, two geographic regions characterized by an extraordinarily large number of species found nowhere else on the planet. In addition, the Amazon is home to numerous indigenous communities that are struggling to adapt to a globalized world. Unfortunately, IIRSA has been designed without adequate consideration of its potential environmental and social impacts and thus represents a latent threat to these ecosystems and cultures. A visionary initiative such as IIRSA should be visionary in all of its dimensions, and should incorporate measures to ensure that the region's renewable natural resources are conserved and its traditional communities strengthened. Failure to foresee the full impact of IIRSA investments, particularly in the context of climate change and global markets, will bring about a combination of forces that could lead to a perfect storm of environmental destruction. At stake is the greatest tropical wilderness area on the planet, which provides multiple strategic benefits for local and regional communities, as well as the entire world.

THE NEED FOR IIRSA AND A CONCURRENT CONSERVATION STRATEGY

IIRSA is motivated by the very real need to stimulate economic growth and reduce poverty among its member nations. As such, it contemplates a series of well-defined investments in three strategic sectors: transportation, energy, and telecommunications. Some of its most important investments will upgrade roads that span the Amazon, Andes, and Cerrado and link the Pacific and Atlantic coasts to create a modern continental-scale highway system. Although the financial institutions responsible for IIRSA have relatively high standards for environmental and social evaluation, environmental assessments are linked to individual projects and do not consider the collective impact of multiple investments. Nor do they adequately address the long term drivers of change, such as agriculture, forestry, hydrocarbons, minerals, and biofuels. For example, no environmental assessment has addressed the link between improved highways, increased deforestation, and carbon emissions, nor how deforestation might impact local and continental precipitation patterns.

Conservation International (CI) is developing a comprehensive strategy to evaluate and monitor IIRSA and other infrastructure investments based on the findings and recommendations of this document. This document examines how development in the region involves local and regional actors, the importance of global commodity markets, and how climate change might impact these phenomena individually and collectively. For example, agriculture is the largest driver of land-use change in the region and will expand even faster and further in response to global markets, as IIRSA highways make previously remote land accessible and as new agricultural technologies make production more profitable. Modern transportation systems will lead to more intensive logging over wider areas, particularly in the previously remote western Amazon as it is linked to Asian markets via Pacific Coast ports.

Improved river transport systems (hydrovias) will make agricultural commodities, biofuels, and industrial minerals from the southern and eastern Amazon more competitive in international markets. Forest fragmentation and degradation caused by clearing and logging will bring about an increase in wildfires, which may also be exacerbated by regional manifestations of global warming. Accelerated deforestation will create a dangerous feedback loop with global atmospheric and ocean systems, accelerating global warming and perhaps altering rainfall patterns at the local, continental and global scale. These are all risks that need to be evaluated in an integrated analysis, and IIRSA must incorporate measures to avoid or mitigate the most dangerous of these impacts.

IIRSA and similar investments will profoundly affect the region's unique and vulnerable biodiversity. All but one of the ten IIRSA corridors intersect a Biodiversity Hotspot or High Biodiversity Wilderness Area—highly vulnerable regions that contain species found nowhere else in the world. In the montane forests of the Andes where there are extremely high levels of local endemism, any and all investments run a risk of creating an extinction event. In lowland Amazonian rain forests renowned for the regional uniqueness of their biodiversity, deforestation belts around highways will lead to fragmentation that will interfere with the ability of species to shift their geographic ranges in response to climate change. The natural grasslands of the Cerrado will continue to feel the brunt of agricultural development, with current

rates of habitat conversion there leading to the complete disappearance of natural habitats by 2030. An increase in effluents from changing terrestrial landscapes will degrade aquatic ecosystems, while rivers will be fragmented by hydroelectric power plants and waterways, compromising the sustainability of fish populations.

Conservation strategies and mitigation programs for this development must be based on a thorough understanding of the regional nature of Amazonian biodiversity and must go beyond direct, immediate impacts of individual projects to account for long-term and cumulative impacts. At risk is not only the region's rare abundance of biodiversity but the economic and social sustainability of the development that IIRSA is intended to stimulate.

VALUING CONSERVATION AS PART OF A SUSTAINABLE DEVELOPMENT STRATEGY

The Amazon Wilderness Area and the Andes and Cerrado Hotspots provide ecosystem services to the world via their biodiversity, carbon stocks, water resources, and climate regulation. Locally, the region's biological resources provide subsistence and income to inhabitants in the form of fish, wildlife, fruit, and fiber, while natural, intact ecosystems contribute enormous value to the world's economy. Unfortunately, current production systems tend to be exploitive, emphasizing short-term economic returns that are generally cyclical in nature, as well as economically and ecologically unsustainable. Worse still, economists tend to discount ecosystems goods and services, as they are intangible and cannot be monetized in a traditional market. There is currently no mechanism or market that translates the Amazon's ecosystem services into the financial resources necessary to pay for its conservation or to subsidize the sustainable management of its renewable natural resources.

The flora and fauna of the Amazon has obvious intrinsic value, although there are limits on the ability of biodiversity to directly generate revenue. Nonetheless, it plays an irreplaceable role in supporting local economies and provides potential for economic growth through commercial ventures such as aquaculture and ecotourism. The largest— and as yet unexploited — economic asset in the Amazon is its carbon stocks, which we estimate to be worth $2.8 trillion if monetized in today's markets. Beyond that academic calculation, there is the potential to generate revenue using more realistic models discussed within the U.N. Framework Convention on Climate Change (UNFCCC). For example, if the Amazonian countries agreed to reduce their deforestation rates by 5 percent each year for 30 years, this would potentially qualify as a reduction in greenhouse gas emissions and generate about $6.5 billion annually over the life of the agreement. Distributed equally among the approximately 1,000 Amazonian municipalities, this amount would constitute about $6.5 million per community per year that could be used to support health and education, the top two priorities in most communities.

IIRSA AND SOCIAL SUSTAINABILITY

No one can deny the urgent and palpable need to provide Amazonian residents with a dignified standard of living. The impending changes that will emerge from IIRSA investments in combination with global markets will definitely have a large impact on current inhabitants of the Amazon, particularly traditional communities and indigenous groups that depend on natural ecosystems for their sustenance. On the positive side, IIRSA projects will greatly reduce the isolation of rural communities and promote economic growth and new business opportunities. History shows, however, that these benefits will not be evenly distributed and, in some instance, may further marginalize the rural poor if proper precautions are not taken.

For example, highway corridors will stimulate the migration of hundreds of thousands, or even millions, of people into the region; new migrants will vie for resources with traditional communities, most of whose residents are ill-prepared to compete with the more sophisticated immigrants. The creation of secure land registries and the recognition of traditional use rights will be vital to ensuring that the current residents and indigenous communities are not shortchanged in the eventual—and inevitable— reconfiguration of Amazonian society.

Rapid cultural change also will bring increased incidence of alcoholism, suicide, prostitution, and HIV infection. Local residents will need new skills to compete in modern economies and function well in the new societies. In addition, health concerns need to be addressed: widespread forest fire will increase risk of lung diseases related to smoke inhalation, and forest pathogens will colonize new settlements. None of these are insignificant challenges, and they need to be addressed as an integrated part of sustainable development plans in order to ensure the development of a vibrant society in the Amazon.

CAN IIRSA BE A POSITIVE FORCE FOR CONSERVING THE AMAZON?

Multilateral financial agencies and their partner governments have often been harshly criticized for failing to identify and mitigate the environmental and social impacts associated with infrastructure investments. In response, they have committed to conducting comprehensive strategic environmental assessments (SEA) and ensuring the active participation of local communities in identifying both environmental and social impacts. However, this evaluation process must be enhanced in several ways if development is to be truly sustainable while mitigating some of the impacts this document identifies:

- **Early assessment** — SEAs should be conducted well in advance of the feasibility study so that recommendations can be realistically included in project design.
- **Increase scope of assessments** — Assessment must begin taking into account secondary impacts and the cumulative impacts that accrue from multiple projects, including those financed by other agencies and private sector investors.
- **Acknowledge economic motives** — Sustainable development plans, which are intended to avoid, mitigate or compensate for the impacts identified in the SEA, need to go beyond community based initiatives—as important as those may be—to address the economic motivations of the individual land holder. The Amazon is not being deforested by communities; it is being cleared and degraded by the actions of individuals, family and corporate, and if the Amazon is to be saved from destruction, individuals must be motivated to change their behavior.

The document concludes by providing a series of recommendations on how to improve IIRSA so that it can serve as a role model for development throughout the region, as well as the world. These policy recommendations are organized into two broad categories: Traditional approaches to environmental mitigation (i.e., the establishment of national systems of protected areas, complemented with indigenous reserves and the stewardship of private land for conservation and sustainable forest management), and nontraditional approaches that focus on the potential for generating income from environmental services to subsidize economic growth that avoids deforestation and rewards conservation. These nontraditional approaches include such recommendations as:

- **Creating revenue by monetizing carbon credits** — Saving the Amazon will require resources. Carbon markets and voluntary mechanisms can raise these resources and, at the same time, can be structured to respect the sovereign rights of individual nations to manage their own natural resources. This source of revenue can create a viable alternative to other industries that deforest natural areas.
- **Ecosystem services should pay for social services** — A system of economic payments for health and education must be created to compensate communities that protect ecosystem services and limit deforestation.
- **Quid Pro Quo** — Because conserving the Amazon will slow global warming, a worldwide security issue, the global community should respect the role of South American countries in preserving world security (i.e., grant Brazil membership in the U.N. Security Council and reform international trade to recognize the concerns of South American nations).
- **People by air, cargo by water** — Highways are only one form of transportation. The Amazon river system is ideal to transport bulk commodities (grains, minerals, timber and biofuels), while subsidies for air transport could meet the transportation needs of the Amazon's far-flung communities.
- **Reform the land tenure system** — The insecurity of land tenure is a major driver of deforestation and conflict; long-overdue changes in the normative framework could reverse this paradigm so that forest conservation is rewarded rather than penalized.
- **Change the development paradigm** — The Amazon needs production systems that are less subject to the fluctuations of international commodity markets. This can only be achieved by transforming commodities into manufactured goods and services, along with investing in technology-based industries independent of natural resources (i.e., Manaus Free Trade Zone).

The countries of the Amazon, Andes and Guiana have all recognized that the conservation of the Amazon is a strategic priority. However, they also are adamant that an even greater strategic priority is the need for economic growth to improve the social welfare of their populations. These combined priorities lead to one logical policy option: the use of direct and indirect subsidies to promote economic growth that simultaneously conserves crucial natural ecosystems. This is not aid, nor do the residents want charity or other handouts. They want decent jobs and opportunities for their children. Future development must provide them with both, or conservation efforts will fail. This new development paradigm must ensure the region's inhabitants a dignified level of prosperity while making important contributions to the economies of the nations that are custodians of the Amazon. If the Amazon forest is a global asset worth preserving, then it is only reasonable that the custodians be paid for their efforts.