

Remapping South America

Paving the way

Twelve South American countries have decided to deepen regional integration by investing heavily in intraregional infrastructural projects. But economic rationale collides with social and ecological goals.

Anyone flying from São Paulo in Brazil to Santa Cruz de la Sierra in Bolivia will have little trouble distinguishing the two countries. The expanse of arable and pastoral land on the Brazilian side, extending to the Pantanal – the largest protected area of marshland in the world – strikes a strong contrast with the thick vegetation and seemingly unspoiled natural landscape on the Bolivian side.

On the Bolivian side, work has been underway since 2006 to pave the only road between Santa Cruz de la Sierra, the country's economic capital, and the border town of Puerto Suárez. Before the project began, a bus journey along the 600 km dirt road took more than 21 hours. The new road will reduce this travel time considerably. By way of comparison, a road from Corumbá, the town on the Brazilian side of the border, to São Paulo was paved many years ago. A bus can now travel the distance of 1,200 km in less than 20 hours.

The Bolivian road project is called *Proyecto BO-0036*, and will give Bolivia better access to the Brazilian ports on the Atlantic Ocean and the Peruvian ports on the Pacific. The plan has been in the works for decades, but has been delayed by financial problems, political wrangling, bureaucratic red tape and resistance from the indigenous population and environmental organizations. But because of recent regional integration trends, the project is now moving forward. It is the responsibility of the 12 South American countries of the Initiative for Regional Infrastructure Integration in South America (IIRSA).

IIRSA focuses on ten 'development hubs' (see map) – multinational territories involving natural spaces, human settlements, production areas and current trade flow, where the infrastructure between neighbouring countries across the continent is inadequate.

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Summary

- Ambitious infrastructural projects are being planned to integrate South American countries and boost regional economic cooperation, which has until recently focused mainly on reducing trade tariffs.
- New roads will increase access to remote areas, connect South American countries, reduce transport costs and lead to economic growth.
- The projects can have enormous impact on the population and the environment.
- Assessment tools are needed to measure the impacts of these projects. These tools must consider economic goals, social and ecological objectives, and the effects on the local people.

IIRSA has three main goals: to deepen regional integration, improve access to the global market, especially East Asia, and open new markets and improve the functioning of existing markets in often remote inland areas.

According to the IDB, 'high costs of transportation, energy and other services associated with insufficient infrastructure are some of the main limitations on both economic and social integration'. For example, thanks to the construction of roads and the clearing of areas deep into the Amazon region, Brazil has developed economically and is now the world's leading exporter of soya and chicken meat, the world's third largest exporter of meat overall and the world's fourth largest exporter of maize.

Slow progress

However, a close look at regional integration on the continent reveals little progress. Of the total trade on the continent, the percentage of regional trade increased from 8% in 1990 to a peak of 14% in 1998, and then fell to 12% in 2004. That is lower than in East Asia (18%), a region where the integration process is much less institutionalized than in South America.

Supporters of IIRSA claim this is because of high transport costs. Worldwide, transport costs account for 5.3% of the value of imported products, but in Latin America – excluding Mexico – that figure is 8.3%. With international



Reuters / Ricky Rogers

Sawmills lined up along Brazil's BR 163 national highway, to integrate the world's biggest rainforest into the national economy

trade in South America, freight costs far exceed trade tariffs. Regional integration on the continent has therefore focused solely on reducing trade tariffs – what is known in economic terms as ‘shallow liberalization’ – but has not extended to improving cross-border infrastructure and related services. Investment in infrastructure is therefore of great importance to the success of regional integration, according to Mauricio Mesquita Moreira, senior trade economist at the IDB. ‘IIRSA is set to play a major role in creating a fully integrated regional market’, Mesquita Moreira says, ‘ensuring that the potential scale and learning gains from deeper integration are fully realized and not held back by high trade costs, rooted in a faulty or even nonexistent infrastructure’.

As a result of neoliberal political reforms of the 1980s and 1990s, South America is now highly export-oriented. Due to the global decrease in import duties, transport costs now play a bigger role in international competition. IIRSA should therefore, according to its supporters, respond to shifting economic relations worldwide. Investment in infrastructure is

therefore of great importance to the success of regional integration. According to Pitou van Dijck of the Centre for Latin American Research and Documentation (CEDLA) in the Netherlands, ‘the renewed inclusion of the South American countries into world markets coincides with and is partly induced by the emergence of new centres of gravity in the world economy, offering new trade opportunities and challenges’.

These opportunities and challenges apply especially to China as a large importer of bulk goods from South America and as an exporter of manufactured products. Improved access to ports on the Pacific Ocean is not only important for the two landlocked South American countries Bolivia and Paraguay, but also for the export of products from the Brazilian hinterland, which is becoming increasingly valuable economically. A corridor through the Amazon and over the Andes to ports in Ecuador (Esmeraldas), Colombia (Tumaco) and Peru (Paita) is seen as a cheaper alternative to the Panama Canal.



IIRSA projects and funding

- The IIRSA currently has 348 projects planned, of which 31 will be implemented before 2010.
 - Most of the initial 31 projects are related to road infrastructure, but others will make inland waterways more navigable, link up energy networks and improve international telecommunications.
 - The 2008 cost estimate for these 31 projects was US\$ 69 billion.
 - The InterIDB, the Andean Development Corporation (ADC) and the Financial Fund for the Development of the Rio de la Plata Basin (FONPLATA) finance around 30% of IIRSA's projects, and government funding has been 60% since 2006. There is now an increasing role for private partners such as Santander Bank.
- For more information visit www.iirsa.org or www.biceca.org.

Opposition

According to researcher and IIRSA opponent Raúl Zibechi of the *Multiversidad Franciscana de América Latina* in Uruguay, the initiative may appear to offer economic benefits for all countries, but will only increase Brazil's dominance in the region. 'IIRSA represents a kind of subordinate integration on two levels: Brazil over the rest of South America, and global markets and business over the region as a whole', Zibechi says.

In Zibechi's view, Brazil will benefit most from IIRSA by being able to transport its industrial and agribusiness production cheaply to East Asia via the Pacific. And it is primarily Brazilian companies that are awarded construction contracts. But Zibechi's main criticism is that IIRSA is being implemented on the quiet, with no discussion with or participation from civil society and with no transparent sharing of information. This contrasts with the heated debates taking place across the continent about free trade agreements.

Assessing impacts of projects

New roads can have an enormous impact on the population and environment in areas where projects are implemented. Paved roads lead to an influx of people and capital. Areas become accessible to the outside world, especially as transport costs fall. Accessibility makes them attractive for economic development, for example through soya cultivation, timber production, fisheries, livestock breeding, mining, oil and gas extraction and electricity generation from hydroelectric power plants. A new or improved road can therefore increase investment, production and trade.

However, in remote areas roads can also fragment the last great primal forests on earth. Roads can also stir social conflict as a result of land claims or degradation of the natural value of the ecosystem. These concerns apply especially to four of the ten hubs that are to be developed in the Amazon region. These are the Guyana Shield (which will connect Brazil to British and French Guyana and Suriname), the Amazon hub (which will improve the links between Peru, Bolivia and Brazil) and the two 'interbioceanic' links

(between the Central Inter-oceanic and the Peru-Brazil-Bolivia hubs), which will connect ports in Ecuador, Colombia, Peru and Northern Chile with ports on the Atlantic coast, running through vulnerable and economically backward areas, to offer an alternative to the Panama Canal.

Statistics show that 74% of deforestation in the Amazon region is taking place within a 50 km strip on both sides of the most important roads. 'As the impact of such long-distance hubs may extend over large territories, the ecological effects of IIRSA may be profound, contributing to large-scale land-use conversion, the fragmentation of forests and the ultimate destruction of ecosystems and the public goods they deliver to the local, regional and global community, including their function as a habitat for indigenous peoples, animals, and plant species', says van Dijck.

To gain a better insight into the dynamics of deforestation, David Kaimowitz of the Centre for International Forest Research (CIFOR) is working together with other researchers from around the world to combine into a single model all the factors that lead to deforestation. The proximity of a road proves to be one of the most important. Deforestation also increases the closer the road is to an urban market centre. The larger the market, the more land is taken over alongside the road. The same applies to the physical quality of the soil: soil fertility and the angle of incline of the ground are important factors in determining which land near a road is cultivated first.

Another important factor is market price for important products – the higher the price, the more rapidly deforestation progresses to make way for soya cultivation, cattle breeding and mining. A final important factor is government policy. The degree of deforestation alongside a road is closely related to the designation and monitoring of protected areas and the availability of grants for colonists, or mining or oil companies.



The ten IIRSA development hubs

How roads impact land prices

There is a difference between the *construction* of a new road and the *improvement* of an existing one. According to Lykke Andersen of the University of Colorado, US, there is evidence that expansion of a road network will result in significantly more deforestation than if existing roads are improved. The reason is related to land prices. A new road extends the borders of economic activities, forcing land prices down and encouraging more expansion in the immediate area. The reverse seems to occur if an existing road is improved: land prices rise, which more likely leads to more intensive agriculture than expansion.

But, according to Stephen Perz of the University of Florida, US, higher land prices can certainly lead to expansion. This is related to the construction of unofficial roads. Colonists and loggers in particular lay small roads through the forest. The distance between these roads is shorter and there are more of them, so that they have a significant impact on the environment. And if these roads connect small settlements, there will be increasing demand to improve them.

Satellite images of the Brazilian state of Pará show that four times more unofficial roads have been constructed than official ones, so that they now account for 80% of the roads in the state.

This presents the government with a dilemma, says Perz. 'On the one hand, official paving projects enjoy considerable political support and unofficial road building is crucial for local livelihoods. On the other hand, new infrastructure without environmental governance will probably lead to forest fragmentation and social conflicts'.

Sources: Anderson, L. et al. (2002) *The Dynamics of Deforestation and Economic Growth in the Brazilian Amazon*. Cambridge University Press.

Perz, S.G. et al. (2008) 'Road building, land use and climate change'. *Philos Trans R Soc Lond B Biol Sci*. May 27. 363(1498): 1889–1895.

Strategic environmental assessments

It is difficult, however, to develop models that can measure in advance the economic, social and ecological impact that trade-related infrastructural programmes such as those of the IIRSA can have on the whole region. Cost-benefit analyses or environmental-impact assessments are often used, but in the case of the IIRSA, new strategic environmental assessments (SEAs) are also applied.

The World Bank considers SEA an umbrella term, but sees the potential and need to develop it further to enable the economic, social and environmental aspects of future large-scale plans to be better taken into account.

One of the most detailed SEAs was applied to the IIRSA PROJECT *Corredor Norte*, which runs through the middle of the Bolivian Amazon, linking the capital La Paz to the border town of Cobija, in the extreme north of the country. The study was conducted by the Dutch engineering consultancy group DHV and took almost three years. The governments and financiers involved found this too long to spend on each of the projects in the IIRSA. 'It has been proposed to limit the time available to undertake a SEA to six months and to limit the available budget to US\$ 300,000', says van Dijck.

Because the costs of SEAs are so small in comparison with the total costs of the IIRSA (US\$ 69 billion), this is 'unnecessary, irresponsible and a missed opportunity to improve the methodology', says van Dijck. 'Cutting time and budgets available for making SEAs in the context of large infrastructure programmes like IIRSA with potential large and irreversible effects is probably unsound from the perspective of rational decision-making and human welfare', he says. 'Moreover, it may undermine political and popular support for the infrastructure programme itself at the local, national and international level'.

There is an urgent need for initiatives in which economic aims are linked to social and ecological objectives and which are close to the local people. Such linking will ensure an honest balance of measures for the region concerned. And there lies the core of the problem. An exception is the environmental governance initiative being implemented at the point where Brazil, Peru and Bolivia meet, right in the middle of the Amazon region. There are several IIRSA projects in the pipeline in this area and that has brought local scientists, civil society organizations and government bodies together in the 'MAP Initiative', which is named after the three regions involved: Madre de Dios (Peru), Acre (Brazil) and Pando (Bolivia).

According to Stephen Perz of the University of Florida, 'by bringing together diverse stakeholders who depend on roads as well as local resources, the MAP Initiative seeks to avoid the pitfalls of relying on either governments or communities alone in seeking to improve road governance'. Because it is still an experiment, it is uncertain what impact it will have on the conservation of the Amazon forest and protection of the communities that depend on it. ■

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