

GLOBAL ECONOMIC GOVERNANCE INITIATIVE

Financing Infrastructure Projects in the Southern Amazon of Peru: its relation with environmental and social safeguards



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ABSTRACT

Peru's Amazon is home to rich biodiversity and numerous indigenous communities, as well as ambitious infrastructure mega-projects that bring significant potential environmental and social challenges. This paper analyzes the role of national and development bank safeguards in mitigating these risks. Specifically, it takes two case studies in the Madre de Dios: Segments 2, 3, and 4 of the Southern Interoceanic Highway (CVIS) and the planned (though ultimately cancelled) Inambari Hydroelectric Dam (CHI). In both cases, competition emerged between coalitions of actors organized in favor of project development and those who prioritized protecting ecosystems and communities from negative impacts. In the case of CVIS, the "growth coalition" secured an accelerated schedule, leaving environmental and social risk to be considered only partially, through relatively small mitigation programs that - while helpful - were unable to contend with the ultimate scale of project impacts, including deforestation, land trafficking, and mercury contamination from informal gold mining that has become a major economic driver near the highway. The CHI met with widespread opposition from a "conservation coalition" which united affected communities in opposition and ensured that the project would not proceed. Results from these cases show the importance of incorporating comprehensive environmental and social risk considerations early in project planning, to avoid unforeseen environmental damages and social conflicts.

This working paper is part of the [Safeguarding Sustainable Development](#) project, a collaboration between the Boston University Global Development Policy Center, FLACSO-Ecuador, Universidad del Pacífico, Lima; and INESAD, La Paz. It is supported by the John D. and Catherine T. MacArthur Foundation, the Charles Stewart Mott Foundation, and the Rockefeller Brothers Fund. More information about the project can be found at <http://www.bu.edu/gdp/development-banks-in-the-andean-amazon/>

Introduction

In Peru, the infrastructure gap is evident and there is consensus that adequate infrastructure would contribute to economic development and to improving society's wellbeing. Nevertheless, large infrastructure projects can generate negative environmental and social impacts, particularly when they take place in sensitive areas such as the Amazon. To mitigate negative impacts and strengthen development opportunities, in the last few decades a series of mechanisms for environmental and social safeguards for infrastructure projects have been developed. These criteria are incorporated in national legislation, through the safeguards established by the development banks that finance these projects, and by the codes of conduct at implementing companies. In generic terms, a safeguard is "a rule or institution that helps ensure that investments meet minimum social, environmental and governance standards" (Larsen & Ballesteros, 2014, pg. 16). In Peru over the past few decades, a series of megaprojects –with financing from development banks– has been executed in the Amazon and environmental and social safeguards have been applied with varied results. As of this writing, new infrastructure projects in the Amazon are being discussed. As such, it is important to analyze past projects to identify which lessons learned are applicable to future projects. This can contribute to mitigating risks of incurring high long-term costs due to hasty decisions that are based on short-term criteria.

This research analyzes the effectiveness of environmental and social safeguards on infrastructure projects in the Peruvian Amazon that are financed by development banks and engages in an in-depth case study of: the process to build Segments 2, 3 and 4 of the Southern Inter-Ocean Road Corridor (CVIS), which was prioritized by the Peruvian government in the framework of the Initiative for South American Regional Infrastructure (IIRSA); and, for comparative purposes, the failed project to build the Inambari Hydroelectric Station (CHI), which would have been presumably financed by the National Economic and Social Development Bank of Brazil (BNDES). Both projects are located in the watershed of the Madre de Dios River in the southern Amazon of Peru and spatially speaking, the projects would have overlapped. In the case of CVIS, research analyzed the role of the safeguards applied mainly by the Development Bank of Latin America (CAF¹) to guarantee sustainable development in the project's area of influence while also including information on other safeguard mechanisms, such as the assessment of environmental impacts on projects, and on other programs to mitigate impacts. Given that the Inambari hydroelectric station was not built and no safeguards were applied to mitigate its impacts, research in this case is based solely on a description of the design and on an analysis of the process that led to the project's cancellation to identify elements to fuel a comparison with the in-depth study conducted of CVIS.

The CVIS shows that the Peruvian government made a political decision to execute the project as part of its involvement in South America's physical integration and in particular the physical integration with Brazil within the framework of the IIRSA initiative. This was also in response to regional interests in executing this project, which date back decades. The support of CAF was decisive in bringing the project together and to ensuring that certain safeguards were implemented, including an innovative proposal from Peru to develop projects to address indirect impacts. Nevertheless, these programs were not enough to mitigate negative impacts while providing direction to apply criteria for sustainability. This was evident, among other factors, in the increase in deforestation and in illegal gold mining in the highway's vicinity. The decision to build the project was taken hurriedly and the mechanisms to assess investment projects that are contemplated in national legislation were not followed. This situation, coupled with subsequent evidence of corruption on the project, suggest that various actors that were involved had more interest in building a highway than in the larger goal of promoting territorial development.

Now almost 10 years in the making, CVIS is currently at the forefront of national political debate given that the main companies in charge of building Segments 2, 3 and 4 are embroiled in the *Lava Jato* international corruption scandal. In fact, as of this writing, CVIS is among the projects that are currently being investigated by the Attorney General's Office and the Congress of Peru. These projects are also highly questioned by public opinion. Evidence indicates that Peruvian government officials may have received bribes from Brazilian companies and investigations have shown that the project's budget was considerably inflated. The combined budgets for Segments 2, 3 and 4 of CVIS totaled US\$902 million in 2005 at the time the contracts were signed but the final amount invested, after several addenda, reached

¹ Founded in February 1968, the Andean Development Corporation – CAF – was chartered as a multilateral financial institution for member countries of the Andean Community. A few years ago, after a long period of growth in the number of shareholder countries and contributions from other financial institutions, this entity became the Development Bank of Latin America but maintained its "CAF" acronym.

US\$2,002 million (Congreso de la República, 2016, pg. 104). These cost overruns could double if maintenance costs are added. In this context, the project's overall economic rationality is questionable.

In the case of CHI, the Peruvian government made a similar political decision to build a megaproject with major socio-environmental impacts, once again in alliance with the Brazilian government in the framework of the bilateral agreement to export energy generated in Peru to Brazil through the hydroelectric stations that would have been built, in theory, by Brazilian companies. Unlike CVIS, this project did not achieve broad consensus at the national level to ensure its legitimacy. Although the project was cancelled after a safeguard mechanism was applied (the Environmental Impact Study - EIA - was not approved), this was merely a formality to detain a project that had proven socially inviable after generating massive protests, mainly in the Puno region.

This research is conceptually situated in the area of political ecology (Blaikie, 1985; Blaikie & Brookfield, 1987; Peet & Watts, 1996), which combines the analysis of specific places through ethnographic methods that recognize the importance of extra-local relations such as market forces on the roles of national states to explain relations between nature and society. This theoretical tradition specializes in processes of social and environmental change and includes dynamics associated with deforestation. According to work by Rudel and Horowitz (1993) and Rudel (2005), deforestation is understood as a process that intensifies land use. Coalitions between actors interested in this intensification play a fundamental role here. Highways are crucial components of the colonialization economy of agricultural frontiers: the colonists are situated in areas near the highways and form coalitions with timber producers, local governments, land speculators, local elites and financiers to pressure the government to build new highways. Rudel calls these "growth coalitions." Given that the intensification of land use tends to imply deforestation and conflicts over land, local actors respond to these processes by formalizing alliances with other actors, such as NGOs that focus on conserving biodiversity. Together, these actors form "counter-coalitions" or "conservation coalitions" that promote efforts to create protected natural areas and other mechanisms to protect forests.

To study safeguards on megaprojects in the Amazon, these ideas are useful when analyzing different political agendas that surface regarding construction projects. Highways tend to be supported by broad-based coalitions, which facilitates construction but makes enforcement of environmental and social safeguards more difficult. Hydroelectric projects for reservoirs find it more difficult to articulate broad coalitions given that at the local level, they are perceived as less beneficial. The type of impacts that these projects generate make them difficult to build if safeguards are not in place to gain the approval of the local population.

The methods used to collect information for this research were mainly qualitative. These include identifying, reviewing and analyzing secondary sources –both academic and specialized reports for civil society organization that conduct follow-up on socio-environmental impact management on the CVIS and CHI- as well as official documents and relevant regulations. Official requests for information were sent to development banks to collect information on safeguard policies. This document review has facilitated the analysis of the territorial strategy proposed by the IIRSA initiative; the decision-making process to build megaprojects; and the implementation of environmental and social safeguards to be applied therein.

To complement the document review, 23 in-depth interviews were conducted with representatives from development banks and the State as well as with experts and social leaders². Interview subjects were selected by identifying subjects that play relevant roles in managing socio-environmental impacts on CVIS: representatives of development banks; executive directors on programs to mitigate indirect impacts; Vice Ministers of the Ministry of the Environment (MINAM); individuals that head the office in charge of socio-environmental management at the Ministry of Transportation and Communications (MTC); local authorities; individuals who manage civil society organizations that are directly involved in the processes described; experts that have written relevant publications on these cases; and people who live in the area of influence of CVIS and bore witness to the impacts and how they were managed. The questions were different for each actor but in all cases, processes to gather factual information (how events unfolded) were combined with a retrospective valuation (which aspects worked well or did not work well and why). These interviews provided information on the processes and conflicts surrounding the relevant decisions in each

2 It was not possible to conduct interviews with the construction companies to gather their views on these projects.

case and shed light on the visions and perspectives of the interview subjects in this regard. The interviews were taped and transcribed but, as agreed with interview subjects, all names have been withheld and not cited in this study.

In the first week of July 2017, a visit was made to the CVIS area to survey all of Segment 3 of the highway and parts of Segments 2 and 4 to examine the status of the highway; the productive and social dynamics in the area; and the visible impacts on the landscape³. In the framework of this trip, interviews were conducted with residents of Puerto Maldonado, Inapari, Mazuko and others living alongside the highway. The format was “informal conversation.” Within the research framework, a set of maps was developed with satellite images that were processed with geographic information programs to visualize the projects and their impacts. These images have provided data to calculate the degree of deforestation in the ambit of the CVIS; this data was complemented with official information from the Peruvian state.

Based on the information collected, the effectiveness of the safeguards on the CVIS was analyzed with input on the political contexts and decision-making processes that led to the project’s construction and to the application of safeguards; the processes to implement the same; and the visible results of the highway’s construction in terms of transforming the landscape. The analysis prioritizes the circumstances and conditions in which these safeguards were applied to understand their potential for success and to identify lessons learned. In the case of CHI, it was not possible to analyze the results of applying the safeguards because the project was never built. Nonetheless, this case contributes to clarifying the role that safeguard mechanisms have in decision-making processes for megaprojects in the Amazon.

The document is organized into five sections. The first, after this introduction, briefly analyzes the territorial proposal of the IIRSA initiative and describes the decision-making process to undertake the CVIS in Peru. The second describes the safeguards applied in the CVIS with special emphasis on the programs directed at mitigating indirect impacts in their ambit and discusses the most visible impacts on the landscape that have been reported. The third introduces the failed attempt to build the CHI. The remaining chapters present the study’s conclusions and the lessons learned.

1. The Inter-Ocean Road Corridor (CVIS) in the Peruvian Amazon

1.1 The territorial vision of the IIRSA initiative

In the year 2000, at the Brasilia Summit, twelve South American governments and development banks, including CAF, the Inter-American Development Bank (IDB), and the Development Fund for the Rio Plata Rivershed (FONPLATA), began an Initiative to Integrate South American Regional Infrastructure (IIRSA) that was presented as «[...] an institutional mechanism to coordinate inter-governmental actions among twelve South American countries to build a common agenda to drive projects to integrate infrastructure for transportation, energy and communications.»⁴ As planned, the initiative lasted a full decade (2000-2010) and was subsequently included in the Union of South American Nations (UNASUR) as a technical forum of the South American Council for Infrastructure and Planning (COSIPLAN).

At the Brasilia Summit, efforts to promote an integrated economic space to favor free flows of trade, services, capital, goods and people were discussed. Under this goal, physical territory was a key axis for priority action. The IIRSA had three pillars: Axes of Integration and Development (EID), identified through commercial flows of existing goods and individuals; inter-governmental cooperation; and support from international financial organizations by means of financial and technical instruments (Carciofi, 2012). The proposal to physically integrate the IIRSA territory was based on the EID, which transcends the theme of transportation to include issues of sustainable development and integration. According to Marcondes Rodrigues, an EID is:

[...] a multi-national stretch of territory that is characterized by the existence of natural resources, human settlements, productive areas and logistical services. This stretch is articulated by transportation, energy and communications infrastructure that facilitates the flow of goods and services, people and information both within its territory and to and from the rest of the world » (2012, p. 68).

³ The author had already conducted previous fieldwork in the area during the years that the highway was being built.

⁴ See: <http://www.iirsa.org/>

It is important to note that the EID is sub-divided into consolidated sub-spaces with the potential for growth and those that are emerging. The emerging axes are characterized by incipient commerce that can be vamped up with infrastructure. In these cases, physical infrastructure requires actions for productive accompaniment to ensure that the dynamic plays out as expected and that public policies intervene to consolidate efforts that are conducive to territorial development (Santa Gadea, 2008, pp. 48-49 y 57). This is, for example, the case of the CVIS.

The first phase of IIRSA (2003-2006) identified the EID; conducted studies of the business vision of the axes; and identified –by applying a methodology for indicative territorial planning– the potential infrastructure projects or the portfolio for regional physical integration projects. Some of the projects in this portfolio are cross-border, but not all: many are national projects that are nonetheless relevant to other countries given that they complete a South American connection. This can be understood by analyzing how the highway was structured in each axis in terms of “project groups.” One of these axes is Peru-Brazil-Bolivar, where the CVIS is situated in the group of three prioritized projects (Santa Gadea, 2008, pgs. 49-55; and IIRSA, 2005).

The second phase of IIRSA (2005-2010) includes more emphasis on the so-called “second stage of indicative territorial planning” and delves further into issues of productive and logistical integration as well as environmental and social assessment (Carciofi, 2012). In 2008, CAF published a working document with a methodological proposal for environmental and social assessment in the framework of IIRSA (CAF, 2008). In 2010, the document that was published included a strategic focus on IIRSA (CAF, 2010b). The objective of this methodology was to give IIRSA a conceptual framework and practical guidelines to implement environmental and social assessments with a strategic focus on their project groups. The objectives included improving the understanding of the territories to strengthen sustainable development; identifying scenarios and trends; establishing management guidelines; and generating dialogue between governments and key actors in the areas of the project (CAF, 2010b). Although the decision to begin the process to develop this methodology was taken at the meeting of the Executive Management Committee of IIRSA in Paraguay in 2005, the working document and final publication were available eight to ten years after the launch of the IIRSA in 2000. Nonetheless, it is important to keep in mind that planning began in 2003.

In this context, the environmental and social dimensions of the project groups identified in each EID held less weight than other aspects during the indicative territorial planning process that developed the initiative during the first term (2000-2010). This was possibly due to the fact that a large swath of the work conducted during this period was focused on identifying a portfolio of regional physical integration projects and fine-tuning their business visions. This constituted an ambitious initiative that entailed physically integrating areas that were environmentally and socially fragile, as indicated by experts (see, for example, Dourojeanni, 2002).

1.2 The construction of CVIS in Peru

CVIS was one of the IIRSA projects executed in Peru. Other emblematic projects include IIRSA Norte, which connected the maritime port of Paita with the river port of Yurimaguas in the Huallaga River. The government of Alejandro Toledo (2001-2006) conceived the inter-ocean highway project in a decentralist framework that emerged after the democratic transition in the year 2000. In total, the CVIS project in Peru involved building or improving around 2600 kilometers of highway that connects the ports of Marcona, Matarani and Ilo on the coast with the southeast of Arce in western Brazil. At this point, the highway connects with the road network of Brazil, which extends to the Atlantic coast. In the Amazon region in Peru, the CVIS consists of three segments. Segment 2 extends from Urcosto to the Inambari Bridge (department of Cuzco); Segment 3 extends from the Inambari Bridge to Inapari (department of Madre de Dios); and Segment 4 extends from the Inambari Bridge to Azangaro (department of Puno), as is evident in Map 1.

Perhaps the most emblematic precedent of highway construction that generated major social and environmental impacts in the Amazon is the project to pave route BR-364 in northeast Brazil at the beginning of the 1980s, which was known as the “Polonoroeste” project. According

to Wade (2011), the project proposed paving approximately 1,500 kilometers of road to unify the densely populated south-central region with the states of Rondônia and Matto Grosso in northeast Brazil⁵ and build secondary roads. The objective was to consolidate existing agricultural settlements (the majority of which failed); establish new colonies; provide health services; and create new indigenous reserves. The project – which received financing from the World Bank– triggered migration and resource extraction, which spiraled out of control causing large-scale deforestation; invasions of native lands; crop failures; indiscriminate timber extraction; and the propagation of illnesses such as malaria. This constituted an environmental and social disaster that significantly damaged the reputation of the World Bank, which was forced to suspend loan disbursements; strengthen its environmental area; and develop safeguard mechanisms for future loans. The World Bank safeguards that are applicable to this kind of project were developed in the 1990s and focused on environmental issues, indigenous communities and resettlement, among other factors, and were partially driven by the significant reputational damage that the bank suffered following the Polonoroeste case (Wade, 2011). Despite their emblematic character, the lessons learned on the Polonoroeste project were not incorporated in the CVIS planning process to safeguard against potential environmental and social impacts.

To develop Peru’s strategic vision in terms of its involvement in IIRSA and to identify the projects that were in its best interests to develop, including CVIS, high-level sustained action was taken that implied, among other elements, creating a Multi-Sector Commission in 2001 and a Technical Secretariat for IIRSA-Peru in 2002⁶. Multi-sector work focused on regional internationalization and to position Peru in its trade efforts with Asia; the plan also contemplated prioritizing national integration through these projects. In the specific case of CVIS, its strategic design had three levels: developing the border area; enhancing the Peru-Brazil relation at the regional level; and third, undertaking the challenge of “making Peru into a bridge for trade relations of the Asia-Pacific with the interior of the South American continent” (Santa Gadea, 2012, p. 140).

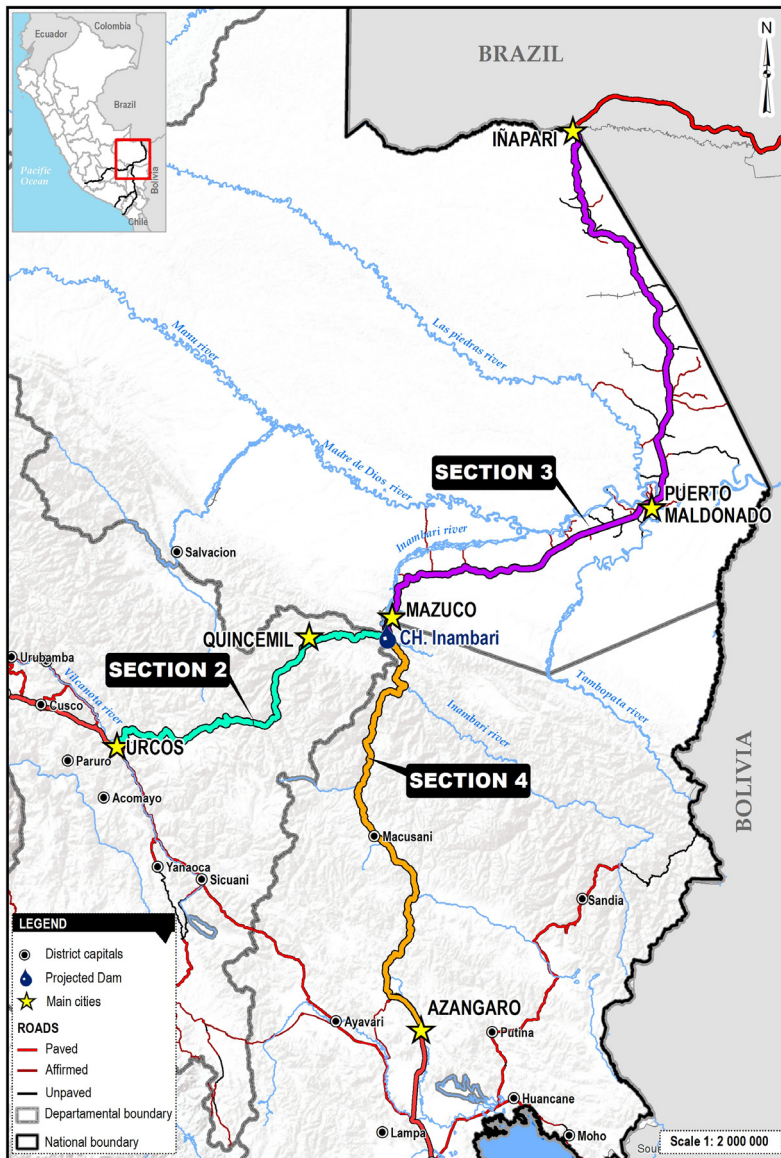
The Brazilian government was also interested in developing infrastructure projects in Peru in the area that connects both countries and expressed a desire to involve specific companies such as Odebrecht, Queiroz Galvao, Andrade Gutierrez and Camargo Correa; this interest was realized in the construction of CVIS (Pari, 2017). The presidents of both countries, Alejandro Toledo in Peru and Lula da Silva of Brazil, held two key meetings in the year 2003 to drive the IIRSA projects at the highest level in Peru. In August 2003, they signed a memorandum for physical and economic integration⁷, which was evidence of both countries’ political willingness to engage in projects such as the CVIS.

5 The BR-364 continues to the north of Acre, which is a Brazilian state that borders with the Peruvian Amazon, the point to which the CVIS extends.

6 For a detailed description of the measures adopted by the Peruvian state to develop a strategic design to incorporate the state in the IIRSA and effectively drive the execution of priority project, see: Santa Gadea 2012, pp. 131-154.

7 Available at: http://www.contexto.org/pdfs/peru_brasil.pdf

Map 1: Stretches 2, 3 and 4 of the CVIS in the Peruvian Amazon



Source: Developed by the author.

The drive of both governments to develop IIRSA projects coincided with a regional desire in southern Peru to build a route to connect Madre de Dios with Puno, Cuzco and the Peruvian coast and at the eastern border, with Brazil. Although the dirt road connecting Puerto Maldonado with the Southern Andes has existed since the 1960s (in terrible condition and lacking the necessary number of bridges), and the road between Puerto Maldonado and Inapari was opened in the 1970s (Dourojeanni, 2006), discussions to build an inter-ocean highway have been in play in Madre de Dios, Cuzco and Puno since the beginning of the nineties. In 1994-1999, new studies were conducted on the feasibility of building certain segments (Dourojeanni, 2006; Bravo Orellana, 2012).

Regional ambitions continued to be a factor when discussions to build CVIS began at the beginning of the new millennium. In 2001, when the national government's prefeasibility studies were underway, options were assessed for areas that CVIS would intersect. The prospect that the project would go through Cuzco led to mobilizations in Puno and to a cycle of mobilization throughout the southern Andes and Madre de Dios, in each case to pressure the government to build a highway through these locations. Llosa (2003) called this "the battle for the inter-

ocean highway in southern Peru,” which included mobilizations, technical proposals and direct pressure among other repertoires of collective action to ensure that the stretch of highway would benefit local interests.

After the binational political decision was made and political and social pressure in the departments of southern Peru (which had consolidated a broad coalition in favor of the highway) gained momentum, the next step was to implement the megaproject. In 2004-2006, a series of actions were taken and regulations were changed to accelerate the initiation of construction on the CVIS. At the end of April 2004, the Congress of the Republic passed Law N° 28214, “Ley que declara de necesidad pública y de preferente interés nacional la ejecución del proyecto Corredor Interoceánico Perú – Brasil – IIRSA Sur” (or “Law Declaring the Execution of the Peru-Brazil Inter-Ocean Corridor– IIRSA Sur a Public Need and Matter of National Interest” in English). This regulation provided a legal instrument for the proposal made by both presidents the year before (Pari, 2017, pg. 19). On December 21, 2004 Supreme Resolution N° 156-2004-EF was passed, which stipulated that the concessions for works and maintenance of the CVIS would be awarded to the private sector. On January 12, 2005, the Private Investment Promotion Agency of Peru (PROINVERSION) approved the bases for the tender to award the concessions for Segments 2, 3 and 4. In February 2005, through Supreme Decree N° 022-2005-EF, these stretches were exempted from the rules of the National System for Public Investment (SNIP), which meant that no feasibility studies would be required for these works.

Several different interpretations exist for the reasons behind the decision to exonerate CVIS from SNIP. Based on a document prepared by CAF, Bravo Orellana (2013) contends that the measure was taken “to ensure that the concessions were awarded without the delays that the assessments conducted by SNIP generally imply” based on the fact that “officials at SNIP lacked sufficient capacities” and “the intention was to speed up the realization of the commitment for trans-border integration efforts by different nations” (Bravo Orellana, 2013, pg. 39). This author also indicated that SNIP’s criteria for this type of projects is that enough traffic exists to justify building infrastructure while in this case, a decision was made to create infrastructure to promote more traffic and integration based on a binational political decision (*Ibid.*, p. 121), as foreseen in the emerging EID of the IIRSA initiative. SNIP was criticized because it limited approval to financially self-sustaining projects; this was not the case of initiatives in emerging axes, which required co-financing. Dourojeanni (2006) states that SNIP exists precisely for the purpose of preventing the State from financing “white elephants,” meaning costly but useless projects; however, in the case of CVIS, the danger was that the decision to build the highway enjoyed ample support from the population and regional authorities regardless of its potential socio-environmental impacts (Dourojeanni, 2002). Perhaps the central argument against SNIP’s exoneration in this case is that it facilitated a subsequent overvaluation of the project (Pari, 2017). Despite SNIP’s exoneration, the project had, nonetheless, made significant progress on pre-feasibility and feasibility studies, which served as the basis to award concessions. These studies, financed by CAF, were based on previous studies of the inter-ocean highway that had been underway since 1994 (Bravo Orellana, 2013; Dourojeanni, 2006).

On June 23, 2005, the concession for Segmentes 2, 3 and 4 were awarded for 25 years (renewable) when the Peruvian stated signed a concession contract with Consorcio Concesionario Interoceanico (CONIRSA), comprised of the Constructora Norberto Odebrecht S.A., Graña and Montero S.A. and JJC Contratistas Generales S.A. (Segments 2 and 3); and the Consorcio INTERSUR, comprised of Andrade Gutierrez, Construções e Comércio Camargo Corrêa S.A. and Constructora Queiroz Galvão S.A (Segment 4)⁸. From the perspective of the project’s promoters, the decision to segment the stretches reduced demands for financial capacities linked to capital contributions from private investors and prioritized the concessions that required more intervention (areas where the road was only paved); distributed construction risks among different investors; identified companies with capacities to build in different geographic areas; and “reduced the field of political and environmental negotiation to include only the actors involved in each stretch” (Bravo Orellana, 2013, p. 30).

The contracts for the three stretches were signed on August 4, 2005. At the time the contract was signed, the Comptroller’s Office of the Republic stated that the contract could not be awarded to Odebrecht because this company was involved in lawsuits with the State. Toledo’s government moved to consolidate the legal arguments to lift this objection and ensure that the contract could proceed. This has been the subject of numerous investigations in the *Lava Jato* case (Pari, 2017).

The three segments were awarded through co-financed concession projects given that the projects required contributions from the State to be viable due to low traffic flows. The concessions took place under the Private Public Partnership (APP) scheme, which was new in Peru. The contracts were to Build, Operate and Transfer. The total cost of each concession consisted of an Annual Payment for Work (PAO), which the State agreed to pay for fifteen years, and an Annual Payment for Maintenance and Operation (PAMO), as defined in each contract⁹. The revenues from tolls would reduce the amount of the PAO. Construction was divided into three stages (for durations of 12, 18 and 18 months respectively) and each concession had milestones or sub-segments. Payments from the PAO and PAMO depended on the advances on and completion of works as an incentive to work quickly while ensuring quality construction. To finance construction, companies had to raise capital in the financial markets. To do this, financial instruments were developed such as the Certificate of Advances on Projects (CAO) and the Certificate to Recognize Rights (CRPAO), which were accepted in the financial markets as underlying assets for the PAO (Bravo Orellana, 2013).

On December 7, 2006, the concessionaires of segments 2 and 3 obtained private long-term financing for US\$600 million through a contract with the investment bank Merrill Lynch for the future sale of CRPSO, which was to be issued by the State during the construction period. In the case of stretch 4, “the concession’s financial close was concluded through a True Sale operation for a CRPAO value of US\$569 million” (Bravo Orellana, 2013, p. 86). However, the loan provided by CAF to implement this project was a determining factor in the financial close.

CAF played a very important role in the CVIS and was involved in this effort from the outset. The bank financed the project’s pre-feasibility and feasibility studies, which in terms of formal requirements, were not determinants in financing decisions given that the project was exempted from SNIP. Nonetheless, these studies served as reference points to estimate the economic viability of the project and provided the first indications of direct environmental impacts. CAF also provided advisory services for the project’s overall financing scheme (Bravo Orellana, 2013, p. 36). CAF granted a bridge loan in 2006 for US\$200 million so that construction could begin before the financial close. This loan was for US\$59,080,000 for Segment 2, US\$91,380,000 for Segment 3 and US\$9,540,000 for Segment 4. Later on, in December 2008, CAF approved a direct long-term loan for US\$300 million for additional work that had been identified after an engineering study was conducted, which was followed by another loan for US\$200 million for more work in 2010 and 2011 (*id.*, pgs. 87-90). CAF also financed the implementation of a program to mitigate indirect impacts, which will be analyzed in section 2, sub-section 2.2.

In sum, although the project for the inter-ocean highway had been debated for more than a decade, the steps to begin construction were particularly accelerated and implied regulatory actions and modifications whose legality have been questioned. It was possible to begin construction partially due to the interest of such a broad cross-section of actors: the governments of Peru and Brazil, multilateral banks, social actors and political authorities in southern Peru. According to the terms used by Rudel and Horowitz (1993), these actors can be considered a growth coalition.

The area of influence of Segments 2, 3 and 4 is characterized by vast biodiversity and well-conserved ecosystems. According to Raez-Luna (2010), this space is particularly vulnerable to climate change given that its water sources come from one of the world’s largest glacier systems, which is currently melting. The highway crosses through the Vicabamba-Amboro conservation corridor, a global hotspot for biodiversity, and two emblematic protected natural areas for the conservationist movement border the CVIS: The National Reserve of Tambopata (RNT) and the Bahuaja Sonene National Park (PNBS) in addition to lands of native communities (Map 2). The prospectus to build the highway prompted environmental organizations, agricultural associations, indigenous groups and public officials inside the State and CAF to mobilize to pressure for measures to safeguard the environment and the population’s wellbeing. Following Rudel, this set of actors can be considered a conservation coalition. While the coalition for growth was successful in pushing the project to build the CVIS, the conservation coalition made efforts to safeguard the environment and social wellbeing in the work’s area of influence. CAF played a notable role in addressing these concerns, as discussed in the next section.

9 For a detailed explanation of the types of contracts and financing schemes, see: Bravo Orellana, 2012.

2. Environmental and social safeguards on the CVIS

2.1 The challenge of socio-environmental institutionalization

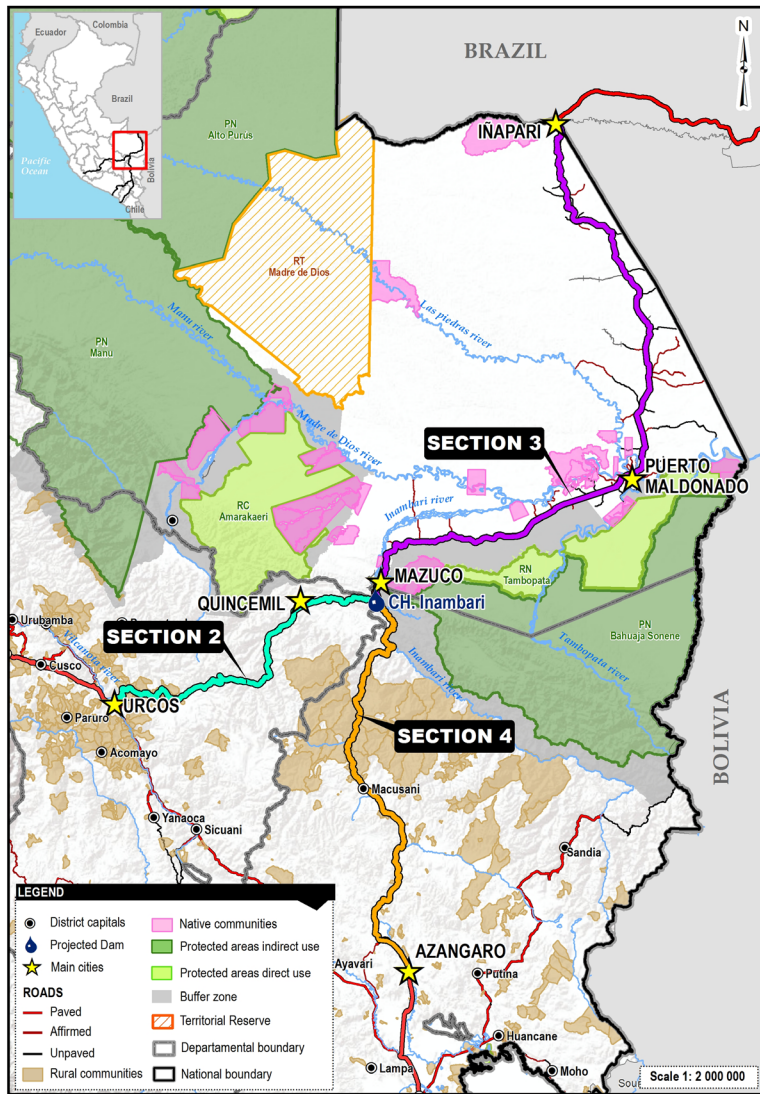
Given the concerns raised by the plan to build CVIS, citizens began to organize to produce and exchange information, hold forums for discussion and pressure the State to address the potential socio-environmental impacts that work was expected to generate. These efforts were mainly channeled through the Working Group for Civil Society for CVIS (herewith GTSC). GTSC included its own chapters in three departments, each with its own dynamic. National coordination was based in Lima. At the most critical point, 57 organizations participated in GTSC. Given that the highway project had broad support and legitimacy, GTSC decided not to frame its concerns as a request to block to highway's construction and instead emphasized impact management. Inside the Peruvian state, institutions such as the National Council of the Environment (CONAM), the National Institute of Natural Resources (INRENA) (both currently defunct) and the Head Office for Socio-Environmental Affairs (DGSA) of the Ministry of Transportation and Communications (MTC) also expressed concerns about the project's potential impacts.

Potential environmental impacts were evaluated in the feasibility study and in partial studies of the segments but the project was not subjected to a comprehensive EIA prior to its initiation. On June 1, 2005, through Directorial Resolution N° 029-2005-MTC/16, the Ministry of Transportation approved the "Final Report on the Environmental Impact Study of the Feasibility of the Inapari - Puerto Maritimo del Sur Road Inter-Connection." Although this document examines environmental considerations in the framework of a feasibility study, it is not a substitute for a complete EIA of the concessions. Consequently, at the time that the concession contract was approved, CVIS did not have an EIA but at the request of DGASA, the bases for the tender of the concessions included detailed terms of reference to develop EIAs (Dourojeanni, 2006, p. 15). These studies focused, as stipulated in legislation, on the project's direct impacts. The contracts allowed work to begin with only partial EIAs (in stages). In this context, work began when the initial EIAs for Segments 2 and 3 were approved in March 2006 and for Segment 4, in April 2006. Next, the EIA for the subsequent stages were approved in April 2007 (Segment 2), March 2007 (Segment 3), and February 2008 (Segment 4) (Bravo Orellana, 2012, p. 62). The direct impacts, which were also addressed by segment and by stage within each segment, covered aspects that were directly associated with the project's construction and operation. Direct impacts were to be addressed by the concessionaires and accounted for approximately 4.7% of the project's total budget (Rivasplata *et al.*, 2014, pg. 124).

CVIS's period of construction and its start-up marked profound changes in environmental institutionalization in Peru. At the beginning of the decade of 2000, decentralist reforms were underway, particularly in the areas of agriculture, forestry and small-scale mining. The process to strengthen environmental management at the regional government level is a work in progress and it is not clear if this will lead to more robust administration in the long-term. In addition to the decentralization process, changes emerged with the creation of the Ministry of the Environment in 2008, which led to the dismantling of INRENA and the creation of a National Service for Protected Areas (SERNANP, under the Ministry of the Environment - MINAM) and the National Forestry and Wildlife Service (SERFOR, under the Ministry of Agriculture and Irrigation - MINAGRI). Additionally, within these sectorial entities, offices for environmental issues were created and strengthened, including the Head Office for Socio-Environmental Affairs (DGSA) in the Ministry of Transportation and Communications (MTC). The process to manage the environmental and social impacts of CVIS took place within a context of profound institutional changes. It is important to note that at this time, the Law for Prior Consultation of Native Communities had yet to be approved; as such, the vision of citizen participation was limited to that required by legislation on environmental impact assessments¹⁰.

10 For an analysis of the advances and challenges of prior consultation in Peru, see: Sanborn *et al.*, 2016.

Map 2: Protected Areas and Native Communities in the sphere of the CVIS



Source: Developed by the author.

One of the conditions that CAF set for loan approval entailed securing approval for the EIA that it had supported. Additionally, CAF actively supported the process to strengthen institutionalization at the State offices that were involved in the project's implementation: Provias Nacional (MTC) and, within this ministry, creating the DGSA, which significantly strengthened its capacities with the support of CAF (as well as additional support from the IDB). A similar process occurred with the Commission to Formalize Informal Property (COFOPRI), which was in charge of titling properties in the area where the highway was set to be built. DGSA, in addition to budget support from development banks, received permanent technical accompaniment to align the ministry with legislation and the highest standards.

2.2 Programs to Mitigate indirect impacts

After the project's design and concession were complete, CAF and the Peruvian state created complementary programs to mitigate the indirect environmental and social impacts generated by the highway in Cuzco, Puno and Madre de Dios or "Environmental and Social Management Programs," known as the CAF-INRENA program and later MINAM-CAF.¹¹ Additionally, the main construction company for Segments 2 and 3 (Odebrecht) implemented, in alliance with other organizations, an initiative to mitigate indirect impacts on the highway.

11 See: <http://www.minam.gob.pe/minamcaf/>

This initiative, called iSur, was financed by the IDB. This section analyzes the design and main characteristics of the implementation of these three programs.

2.2.1 Program CAF-INRENA

CAF policies stipulate that a portion of financing for operations must be allotted “to guarantee timely and efficient action to address environmental and social impacts ... where strengthening civil society’s participation is indispensable” (CAF, 2010, p. 8). CAF presented its environmental strategy in 2010, but sustained work on these issues dated back to 1994, when the organization created the Office for Sustainable Development Organization, which eventually became the Vice Presidency of Development Strategies. In 2004, the area’s decision-making capacities were strengthened by the creation of the Vice Presidency of Social and Environmental Development (VDSA). The objective was to give this unit the power to act transversally with regard to environmental issues. According to the analysis of Rivasplata *et al.* (2014, p. 113), during the years that the CVIS was approved, CAF used the national systems of its clients to manage the social and environmental risks of its loans but in the internal sphere, it also managed a “protocol of independent analysis that identified and bridged gaps between its standards ... and those of the borrower.” Based on this logic, CAF applied pressure to ensure that measures beyond those foreseen in national legislation were applied.

On July 20, 2006, a few days prior to the end of Alejandro Toledo’s term, the contract was signed by the State and CAF for the CAF-INRENA program. This was the second environmental loan that Peru had received (the first was at the insistence of the IDB for the Camisea natural gas project) and the first CAF-issued environmental loan in Peru (Enrique and Cueto, 2010, p. 22). CAF-INRENA was also a pioneering project in that it began debate in Peru on the concept of indirect impacts. The total cost was US\$17,785,957. Ten million of this amount was provided by CAF; \$3,452,435 was allotted through a matching national contribution; and \$4,333,522 was covered by resources from recurring expenses (*ibid.*). Enrique and Cueto indicate that, in budget terms, the amount allotted was small given that it represented less than 2% of the project’s budget when mitigation programs for similar highway projects vary between 5% and 20% of project cost.

The main objective of the CAF-INRENA program was to contribute to strengthening institutional and technical capacities for planning, titling, promoting, supervising and overseeing public entities to mitigate CVIS’s indirect impacts. The program coherently identified the challenges ahead and the problems that would need to be addressed. These difficulties included the absence of a plan for territorial ordering; the existence of high levels of informality in terms of rural properties near the highway; the weak presence and institutional structures of the State; limited management and administration of forest resources; limited management and operating capacities in protected areas; and deficient environmental management of small-scale and artisanal gold mining in the area among others (Dourojeanni, 2006, p. 59). To address the problems identified, the CAF-INRENA program applied three components: territorial ordering, forest management and third, institutionalization and citizen participation. In the framework of these components, ten projects were developed to address territorial ordering, protected natural areas, tourism, gold mining, land titling, forest concessions, cultural identity and strengthening institutional management.

In this context, the diagnostic and thematic design of the CAF-INRENA program recognized the enormous challenges that needed to be addressed. Nevertheless, in practice, the program experienced many problems. First, the budget assigned (US\$17 million) was insufficient to cover both an ambitious program and the vast territory in question. Additionally, there were a significant number of complex challenges to address. The natural protected areas alone that were directly threatened constituted around three million hectares (Dourojeanni, 2006). Difficulties with informal, illegal gold mining had been identified but the project to improve environmental practices for gold mining was allotted the lowest budget within the program’s framework (US\$372,000). Second, the main problem in vast territories with reduced budgets originated with particularly weak institutionalization. This was the case of the maligned and now extinct INRENA, which under normal circumstances was unable to implement its habitual functions, let alone take on other more complex issues (Enrique and Cueto, 2010; Dourojeanni, 2006). Third, the program’s budget was dispersed among different executing organizations, which reduced the amounts allotted to each component and increased the costs of inter-institutional organization. A common perception among individuals who were interviewed was that State offices that lacked experience with this type of program were more concerned about accessing and executing

budgets than understanding the challenges that lay ahead.

According to the Final Report on the CAF-INRENA program (MINAG, 2010), the most important achievements of this program were as follows: a Territorial Ordering Program for Madre de Dios was developed; Ecological Economic Zoning in the regions of Puno, Cuzco and Madre de Dios was conducted; more than 13,000 requests for property titles were received; three control posts were built; the office of the forest authority for Madre de Dios was built; a physical survey of more than 85,000 hectares of forest concessions was conducted; a the unified regional cadastral report was generated; and regional mining and hydrocarbon technical offices were established and strengthened to manage flora and fauna and to bolster protected area management.

Although these results provide evidence of the work that the program actually completed, the majority of people interviewed and the literature reviewed coincide that the program failed to mitigate indirect impacts, which was its primary objective. Dourojeanni (2010, pg. 19) contends that the CAF-INRENA program was “inefficient in almost all aspects,” and for Enrique and Cueto (2010, pg. 23) it was “novel but inconsistent and insufficient compared to the magnitude of the (negative) socio-environmental impacts that should have been foreseen by the CVIS project” in addition to a focus that was “limited given that it was solely directed at ‘mitigating’ without seeking to ‘promote development.’”

Finally, it is important to note that one of the activities that should have driven the program was the Strategic Environmental Assessment (EAE). This was seen as necessary given that the environmental impact studies were conducted by segment and focused solely on direct impacts, which means that a comprehensive and strategic assessment of impacts was in order. The results of this process failed to meet expectations. The EAE was conducted between August and December of 2009. Due to the particularities of the legal framework for EAEs in Peru, which stipulate that the EAE are applicable solely to plans and programs and not to infrastructure projects, this assessment did not consider the impacts that the highway generated and focused instead only on the different plans and programs applicable in the sphere of the CVIS. The document was never formally approved.

2.2.2 MINAM-CAF Program

The CAF-INRENA program ended in 2010 but was reactivated for a second phase through the “Public Investment Program to Strengthen Environmental and Social Management of Direct Impacts on the Inter-Ocean Road Corridor – Stage 2 (PGAS CVIS-2)” known as the MINAM-CAF program. This took place within the framework of the loan contract signed by the Peruvian state with CAF in 2009 to partially finance the projects pending completion on Segments 2, 3 and 4 of the CVIS. The estimated budget for this program was US\$27 million, \$15 million (approximately) of which were financed by CAF (Rivasplata *et al.*, 2014). Although this program should have begun in 2011 (the year that the highway was inaugurated), the contract was signed in 2014 due to delays on the State’s end, and activities began in 2015, or 5 years after the CAF-INRENA program had ended.

The main lines of the MINAM-CAF program are: (i) strengthening competitiveness, (ii) conservation, (iii) institutional strengthening and (iv) promoting environmental Public Investment Projects (PIP) with an emphasis on eco-businesses in the CVIS’s area of influence. The program is based on the premise that growth in informal and illegal activities puts pressure on the use of natural resources in the sphere of the CVIS, which generates indirect negative impacts such as an increase in deforestation, expansion of illegal gold mining and social conflicts. To mitigate these impacts, the program proposes reducing the pace of growth of informal activities through a strategy that focuses on the need to “achieve sustainable use of natural resources that competes with informal activities” (MINAM, 2012, p. 6). To accomplish this, efforts to strengthen competitiveness are directed at assisting private actors in the process to generate capacities. The conservation line focuses on recovering environmental assets that are damaged or in a vulnerable situation while strengthening institutions aims to propitiate a favorable context for eco-businesses by emphasizing work with local governments, “assuming that in stage 1 (CAF-INRENA program), the regional level has been addressed” (MINAM, 2012, pg. 396) and promoting the development of regional and public capacities to generate environmentally sustainable public investment projects.

Although several aspects of its diagnostic are similar to those of the CAF-INRENA program, the MINAM-CAF program has a different strategy for action that emphasizes aligning natural resource use with sustainability criteria rather than focusing on activities that generate negative indirect impacts. Initiatives include improving solid waste collection in the highway's area of influence; promoting cacao crops by pinpointing niche markets for export; as well as promoting areas of private conservation and ecotourism experiences. These projects are accessed through public tenders and the concessionaires are not reimbursed.

The MINAM-CAF program began almost 10 years after the CVIS was built, which reflects efforts to develop sustainable productive activities in the sphere of the CVIS. Nevertheless, these activities do not contemplate mechanisms to properly manage the most visible impacts of deforestation, which are attributable to agricultural, livestock and illegal gold mining activities. Although the actions of the MINAM-CAF program are positive these effects dissipate within the territorial dynamics that the highway generates, which are beyond the program's control. It is also important to note MINAM-CAF has had a difficult time managing the GOREMAD from 2015-2018 due to conflicts with the central government over gold mining.

2.2.3 The iSur Initiative

In addition to the initiative driven by CAF, construction companies have developed programs to promote sustainable development in the sphere of the CVIS. The iSur initiative as created by the Odebrecht Association in Peru for Sustainable Development and Conservation, in alliance with the NGOs Conservation International, Pronaturaleza and the Fondo de las Americas (FONDAM). This initiative received financing from the IDB. The Donor Memorandum that approves a loan for this initiative conducted a diagnostic of the enormous challenge that managing the indirect impacts of CVIS would certainly entail:

The main problem lies with the impact that a large-scale infrastructure project like the Inter-Ocean Road Corridor Peru-Brazil can have in an area that has been recognized as environmentally valuable due to its biodiversity and on the population, which lives at the subsistence level and is poorly educated. Additionally, it could produce indirect negative economic and social impacts related to road integration and the presence of new actors (mining and extraction companies, merchants and others).

Although the area is protected through an environmental management system (protected areas and concessions in areas of forest exploitation), land use is far from consolidated and many practices are not compatible with the environment. The fact that the productive activities conducted by neighboring communities in this area are not profitable leads the population to resort to informal activities that have a serious impact on ecosystems, including illegal timber operations and informal mining. (BID, 2008 pg. 4).

This document also indicates that infrastructure work is "a major opportunity to develop the region and can have a positive impact on the quality of life of populations in the area." This economic potential can be reached if "with adequate and attentive processes, the local population can be integrated with the sustainable development opportunities that are generated" (IDB, 2008, pg. 4). This was the logic that justified the iSur initiative: promote sustainable activities in the highway's area of influence. According to the IDB,¹² the budget planned for this project was US\$5.2 million, of which \$1.5 million were granted through a non-reimbursable loan from the IDB through the FOMIN Fund (Facilities for Small Businesses). In the words of a former official involved in the initiative, the fund was not highly relevant. In operating terms, local initiatives were identified for replication purposes. Along these lines, one of the projects that was financed was to set up a tourist stop on the property of the Mendez family, which was located at kilometer 64 of Segment 3 in Madre de Dios. This stop still exists but there was no initiative to increase the number of similar stops along the highway given that there was an expectation that replication would be achieved without financial support from iSur or from other entities.

The project had four components: Strengthening Local Governance; Developing Sustainable Productive Initiatives; Sustainably Managing Conservation of Biodiversity and Monitoring; and Lessons Learned and Dissemination. The Odebrecht Association and the IDB were aware of the fact that efforts to consolidate land use management were far from complete in the sphere of CVIS. Nevertheless, both entities believed that territorial ordering was covered by the CAF-INRENA program; as such, the focus of this initiative was on identifying alternatives to generate employment and income by developing sustainable productive endeavors (BID, 2008).

2.3 Visible impacts on the landscape

The impacts of the CVIS, generally speaking, have not been auspicious for sustainable development. Nevertheless, in the case of Madre de Dios –through which Segment 3 extends– monetary poverty fell significantly from 2004 to 2017: from 27.1 % to 7.3 % (the national average fell from 48.6 % to 22.7 % for the same period). In terms of basic unsatisfied needs, Madre de Dios was ranked number 20 of 25 departments at the national level; nevertheless, it posts better figures than all the other departments whose total territory is in the Amazon (Amazonas, San Martín, Ucayali and Loreto) in terms of basic unsatisfied needs (INEI, 2018). By 2014, 24% of the employment in the department was formal and 76% was informal (meaning that it followed the same trend as the rest of the country); the majority of employment was concentrated in the sectors of services (42.0%), agriculture and livestock (23.1%) and construction (16.7%). Mining accounted for 7.2% of regional employment but this activity is a driver of growth and represents 90% of total exports (DEMI, 2016). Madre de Dios has led the country for population growth over the past few years. Prior to CVIS's paving, in 2002- 2007, Madre de Dios was the department that attracted the highest relative number of new residents with a net migration balance of 14.8% (Yamada, 2012, p. 100). In 2007-2014, the population grew from 109,555 to 134,105 in 2014 (DEMI, 2016) although it is important to note that Madre de Dios continues to be the least populated department in Peru.

After the CVIS was paved, land value for farmers with titled lands increased many times over. In the 1990s, a hectare of land along the highway in Tahuamanu cost around 500 soles (approximately US\$155). Now, this same piece of land costs US\$10,000. For those who have no land registered land title, the highway has generated an increase in the number of squatters in the area and spurred legal disputes for property. People in newly established mining areas either lost their land to squatters or found that it was no longer suitable for farming and livestock activities. Nevertheless, mining activity has become an economic driver and has gained political momentum: the Regional Government in 2015-2018 was directed by mining interests and the members of congress for Madre de Dios during this period have links to mining. The networks for mining activity have established a political hegemony at the regional level and the Regional Government controls decisions about land titling and territorial ordering after competences were transferred in the framework of political decentralization.

2.3.1. CVIS and deforestation

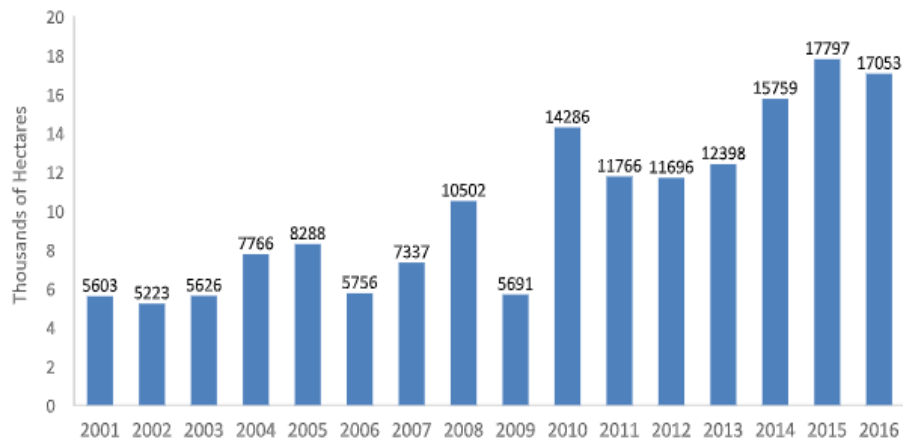
In tropical forests like the Amazon, highway construction has been directly associated with deforestation (Rudel & Horowitz, 1993; Rudel, 2005; Lambin *et al.*, 2001; Dourojeanni, 2006; PNCBCC, 2016; among many others) and with growth in extraction activities (Wade, 2011). Land close to highways becomes more attractive for productive activities (agriculture, livestock and extraction), which tends to increase whether or not soil quality is desirable.

Madre de Dios, through which Segment 3 of the CVIS passes, is the department with the third largest area of tropical forests in Peru, with 8,002,550 hectares. According to the Minam's web portal GeoBosques, in 2001-2016, 162,573 hectares of forest land were lost in Madre de Dios¹³. As is evident in Figure 1, the rates of forest loss posted sustained increases during the process to pave the CVIS. The National Strategy for Forests and Climate Change (ENBCC) identifies a series of "deforestation fronts" in the country. Two of these areas (Tambopata-Manu and Tahuamanu) are in Madre de Dios and both follow the route of the CVIS. Nevertheless, and despite the fact that this clearly overlaps with the highway's axis, the dynamics associated with deforestation in each of these areas is attributable to different sources (PNCBCC, 2016). In Tahuamanu, deforestation is associated with agricultural and livestock activities. In Tambopata-Manu, 62% of deforestation in 2000-2013 was directly caused by mining, whose growth is attributable to rising gold prices.

13 See: <http://geobosques.minam.gob.pe/geobosque/view/perdida.php>

Figure 1: Annual deforestation in Madre de Dios

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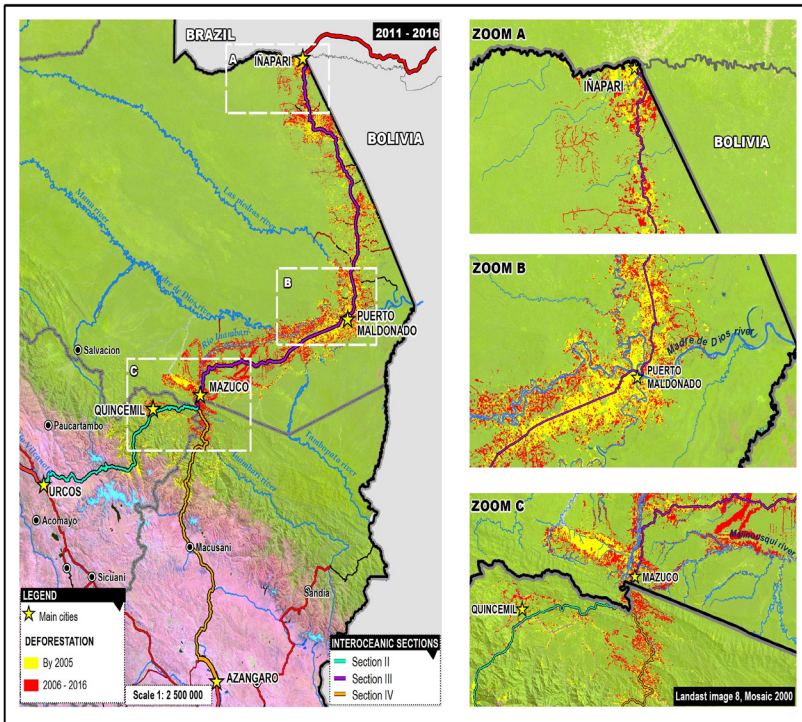


Source: <http://geobosques.minam.gob.pe/geobosque/view/perdida/php>

Map 3 shows deforestation in the area of Segments 2, 3 and 4 of the CVIS in 2016. The points in yellow show deforestation that occurred prior to 2005 while the red points show deforestation in 2005-2016. The analysis of these satellite images allows an estimation of deforestation during these years. Prior to 2005, the deforested area next to kilometer 24 extended over 189,295,02 ha. In 2005-2016, an additional 91,171,62 ha were deforested. These results mirror and complement the information presented by Geobosques for Madre de Dios, which is depicted in Figure 1. As expected, deforestation is concentrated along CVIS's borders.

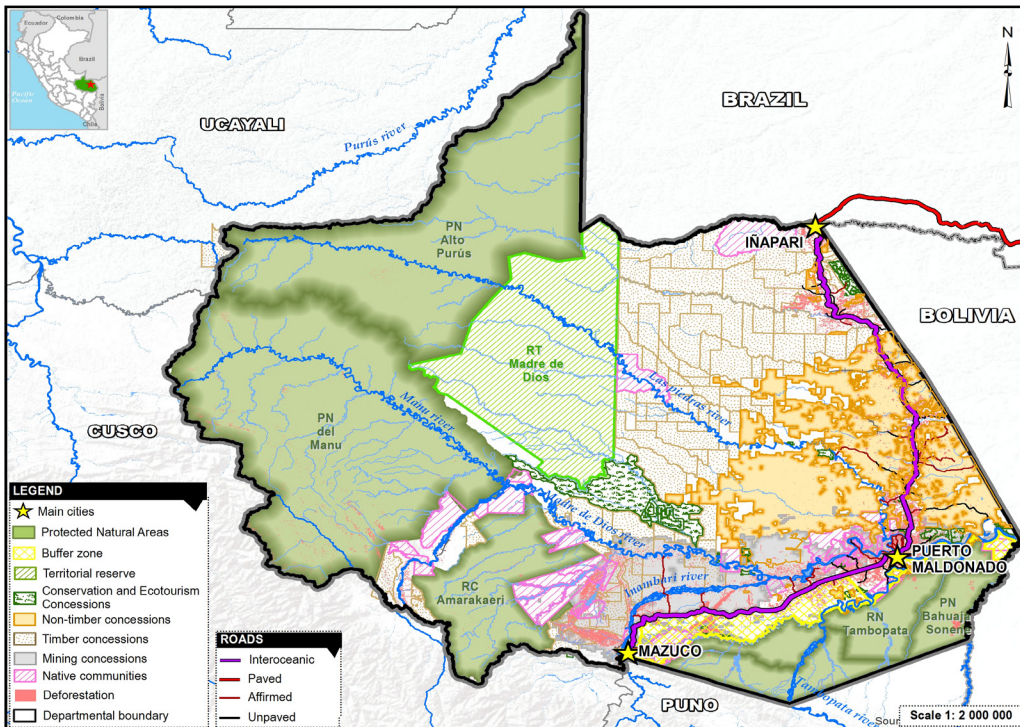
Several factors have reduced deforestation in the area of the CVIS. Rights have been granted in this area that run counter to deforestation, which has played an important role in preventing clear felling – rather than selective felling – in forest activities. Map 4 shows the different rights that were granted in the area of the CVIS: protected areas, territorial reserves and forest concessions, where deforestation has been less significant. Although the majority of these rights were granted prior to the programs to mitigate direct impacts, the CAF-INRENA program included projects to consolidate forest concessions (timber and non-timber) and protected natural areas. The program also worked with indigenous peoples and on cadastral projects and land titling. These measures contributed to cutting down deforestation, which would have been more significant if these rights had not been granted. From the perspective of an official from the Ministry of the Environment who was interviewed for this study, “If it weren’t for the protected natural areas, forest concessions, BPP, ecotourism concessions, ACP and ACR, the situation would have been worse.”

Map 3: Deforestation along stretches 2, 3 and 4 of the CVIS, 2005-2016



Source: Developed by the author using Landsat 8 images

Map 4: Rights granted in the territory of Madre de Dios



Source: Developed by the author.

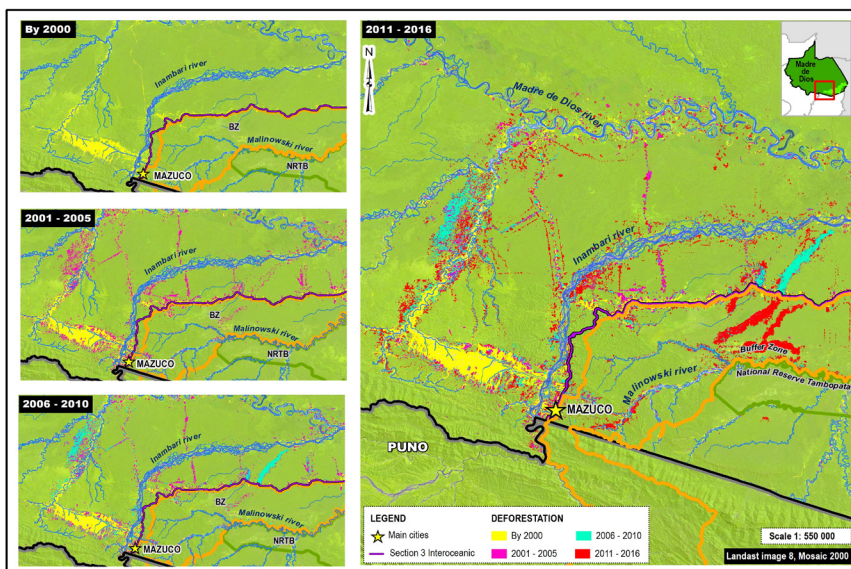
2.3.2 Expansion of informal and illegal gold mining in the area of the CVIS

Madre de Dios and the forest areas of Cuzco and Puno that border the CVIS have experienced unprecedented expansion in informal and illegal gold mining over the last decade. Although this activity existed prior to this period at an artisanal level, the construction of CVIS led to uncontrolled growth in illegal mining in the territory that has even reached the National Reserve of Tambopata (Map 5). Highway construction facilitated this activity and coincided with a period of fast growth in gold prices just as the highway was in the paving stage (Figure 2). Add to this the abundance of potential migrants from the southern Andes, seeking opportunities for economic growth in gold extraction. This scenario, coupled with the State's facilitating role in promoting extractive activities (including initiatives by the Ministry of Energy and Mines and the Regional Government of Madre de Dios¹⁴), was further exacerbated by the inability of the Ministry of the Interior, Ministry of Energy and Mines, the Ministry of the Environment and the Head Office for the Coast Guard to control the situation. In addition to the visible environmental impacts of deforestation and the contamination of rivers and soil, the expansion in gold mining in Madre de Dios represents a social tragedy marked by an increase in criminal gangs, prostitution, land trafficking and sexual exploitation of minors. The expansion of this kind of mining is proof that the State has lost its authority in a significant portion of Madre de Dios, Puno and Cuzco in the areas that border the CVIS.

The water and soil pollution that this activity generates has reached dramatic proportions. In 2016, the Peruvian state declared a state of emergency in eleven districts of the provinces of Tambopata, Man and Tanhuamanu of the department of Madre de Dios due to mercury contamination. A study by the National Institute for Civil Defense found that several population groups in Madre de Dios post mercury levels above maximum permissible limits, which leads to serious, chronic and complex health problems, particularly in children and pregnant women. This report directly blames this situation on illegal and informal mining.¹⁵

The case of expansion in informal and illegal gold mining illustrates the debate regarding the safeguards' ability to mitigate impacts on projects such as the CVIS. The Peruvian state does not have the capacity to stop illegal mining inside the Tambopata National Reserve despite the fact that it has proposed, at least declaratively, to do just that. The scale of the dynamic generated by the illegal economy is so significant that the State has been unable to respond effectively.

Map 5: Advance of illegal gold mining in the Tambopata National Reserve



Source: Developed by the author using Landsat 8 images.

14 In the last regional elections prior to this writing, the president of the Mining Federation of Madre de Dios (FEDEMIN) and a visible proponent of the mining agenda, was elected regional governor in Madre de Dios.

15 See: <http://busquedas.elperuano.pe/normaslegales/declaran-el-estado-de-emergencia-en-once-districtos-de-las-pr-decreto-supremo-n-034-2016-pcm-1383308-1/>

The problem of illegal mining had already been identified when the CAF-INRENA was designed. The budget allotted for this purpose was low but enough to develop a diagnostic of the issue and its potential impacts. The Peruvian state did not take the necessary measures when the problem the safeguard programs in place for CVIS. The environmental, economic and political cost of this lack of action has been extremely high. CAF, according to the officials who were interviewed, currently view mining as a national problem that the State should oversee.

Figure 2: Global gold prices 1960-2015



Source: World Bank

2.4 Analysis of the effectiveness of safeguards

The environmental and social safeguards applied to the project –which primarily focus on environmental permits from the Peruvian state; strengthening key institutions in charge of socio-environmental affairs; and the implementation of programs to mitigate indirect impacts– should prevent, to the extent possible, the onset of severe environmental and social impacts on the project. The different programs to mitigate indirect impacts that are discussed in this study conducted diagnostics to identify operating contexts and the major challenges in store. Given that there is considerable evidence that highways in tropical forests cause significant impact (Rudel & Horowitz, 1993; Rudel, 2005; Lambin *et al.* 2001; Dourojeanni, 2006; PNCBCC, 2016; Wade, 2011; among others) it is unlikely that indirect impacts will be completely mitigated even if safeguards work satisfactorily. Nevertheless, the results in terms of deforestation and growth in illegal activities such as gold mining are evidence that the safeguards were insufficient to protect the environment and social wellbeing despite the fact that potential impacts had been identified at different levels. There are a series of factors relative to context, the decision-making process and implementation that explain these results.

The CVIS project, despite representing a regional ambition that dates years back, was initiated too quickly. In this context, no serious efforts were rolled out to develop strategies to mitigate the impacts that project construction could imply. The effectiveness of the safeguards was limited given that important decisions were made prior to considering the project’s socio-environmental impacts. The decision to implement the CAF-INRENA program was generated after a conflict inside the State in which some actors were reluctant to take additional loans from CAF for mitigation programs that they believed were unnecessary. When the decision was made to implement these programs, a struggle was generated to decide which institution would control the project and which institutions should be involved. In this context, although a decision was made to activate safeguards, it was clear that these measures would not have a substantial impact on the project’s design or duration.

This situation is related to another structural factor that is structural and two-pronged: first, weak socio-environmental institutionalization when the decision to go forward with the project was made and second; the advent of institutional changes during the periods of the project's construction period and the implementation of mitigation programs. The relevant decisions to manage the socio-environmental front of CVIS coincided with the creation of MINAM, DGSA and SERFOR and the transfer of competences from the national government to the regional governments in the framework of the decentralization process. This context of change and learning was exacerbated by the relative weakness of these institutions compared to the political power that was mobilized to accelerate the process to build the highway and the migratory and productive dynamics that catalyzed the initiation of highway pavement work. That was no precedent in Peru that was similar to CVIS and the institutions in place were not prepared to lead project management at the territorial level.

Finally, there were issues with the design of the safeguards' measures. In the case of the EIA, as mentioned earlier, evaluation was conducted by segment and sub-segment. No assessment was made of the project as a whole and the evaluation was limited to reviewing the project's direct impacts. The EAE was not designed as an instrument to strategically address the highway's impact; the focus was instead on the plans and programs that could be developed around the highway. Additionally, as discussed earlier in the study, the EAE was never formally approved. Initiatives to mitigate impacts under the CAF-INRENA program were launched when construction of the CVIS began and after concerns about the project's effects were voiced and limitations were identified in the environmental impact studies. The program's diagnostic was accurate and its design was thematically coherent but its budget was low considering the challenges that needed to be addressed. Additionally, this budget was scattered among various institutions. Although the program achieved specific points, it was insufficient to significantly mitigate the indirect impacts of CVIS. MINAM-CAF initiated efforts several years after the CAF-INRENA program had concluded and its focus was on promoting alternatives for sustainable businesses to discourage unsustainable uses of land. Nevertheless, these initiatives, like those of iSur, lacked resources and political support to act as a counterweight to prospects of short-term income generation from extractive activities and to the allure of the land speculation spurred by the highway, both of which have broad political and explicit backing at the regional level.

In this scenario, the political contexts and processes for decision-making catalyzed the project and led to an application of safeguards that had an impact on the ability of the same (safeguards) to work effectively. This was compounded by design problems and limitations at the implementation level when attempting to cover all the impacts that a large-scale project such as CVIS can generate in a sensitive natural region such as the Amazon. The results visible in the territory are proof that the safeguards were insufficient.

3. The case of the Inambari Hydroelectric Dam

The project for the Inambari Hydroelectric Dam (CHI) entailed building a large dam in the confluence of the Araza and Inambari rivers, close to the location where stretches 2, 3 and 4 of the CVIS meet. The CHI was part of the highway project in the framework of the "Agreement for Electricity Supply to Peru and the Export of Surplus Energy to Brazil" (known in Peru as the "Energy Agreement"), which was approved in 2010 after approximately four years of negotiation. The Energy Agreement was not ratified by the congresses of the two countries and as such, is not currently in effect. The Inambari project was cancelled after socio-environmental protests exploded when construction was announced. The majority of the actors involved in the case, in addition to various publications, assumed that the project's financing would be obtained from the National Bank for Economic and Social Development of Brazil (BNDES). Nevertheless, this financial banking was never made official and BNDES informed the author of this study that the companies involved never initiated formal requests to receive financing from the bank.

This section describes the construction project for the Inambari Hydroelectric Station (CHI) and the legal and political process that led to its cancellation.

3.1 The Inambari project in the framework of the Peru-Brazil Energy Agreement

The "Energy Agreement" was signed on June 16, 2010 by the ministers of Energy and Mines of both countries in Manaus, Brazil. The Energy Agreement proposed facilitating the installation of several hydroelectric dams in the Peruvian Amazon with an electric power capacity up to 7,200 MW in total. The objective was for Brazilian companies to build a series of hydroelectric stations to supply electric energy to the

Peruvian market and export the surplus to Brazil for a period of no less than 30 years. Nevertheless, Peruvian energy demand is very low in comparison to that of Brazil, which led to the expectation that the majority would be exported to Brazil. The energy supply in Peru was contingent on its investments in transmission lines. On each project, the export commitments that were made were fixed for thirty years and did not incorporate potential increases in Peru's energy demand. The costs of energy transmission to Brazil were to be assumed by Brazil while the costs for domestic consumption were to be assumed by Peru.

The Energy Agreement was the result of a bilateral collaboration process. As discussed in the section on the decisions made to build the CVIS, the Memorandum of Understanding for the Physical and Economic Integration of Peru and Brazil, signed in August 2003, state that both countries should "Take note of the Peruvian proposal to establish a Framework Agreement for the Regional Integration of the Energy Markets of Peru and Brazil and to instruct their Ministers of Energy to meet with the purpose of studying the possibility of entering into said agreement." Nevertheless, the issue made no progress during the years that CVIS was being negotiated and efforts did not resume until 2006, when construction began on CVIS. In November of this same year, representatives of the ministries of Energy and Mines of Peru and Brazil, through a new Memorandum of Understanding, set up a permanent mixed committee to address energy, mining and geological issues.

In 2007, the "Ad Hoc Working Group for Energy Integration of Peru and Brazil" was established to develop a proposal for a bilateral agreement to conduct studies of the potential to integrate both countries at the energy level. In this context, on November 2007, Peru presented the report "Developing executive summaries and study sheets of the hydroelectric stations that have the potential to export to Brazil," which presented information on the CHI among other projects (Raetz-Luna & Dammert, 2012). The bilateral agreement was signed in May 2008 in Lima and stipulated the need to conduct studies, identify programs and assess regulatory issues. In December 11, 2009, a bilateral meeting was held with the presidents of Peru and Brazil, where the ministers of Energy and Mines of both countries were charged with the task of preparing a proposal for an agreement to establish a regulatory framework that promotes the construction of hydroelectric stations in Peru to supply electricity to Peru and export the surplus to Brazil. The Agreement was finally signed on June 16, 2010 in Manaus.

The main project in the framework of this Energy Agreement was set to take place in the watershed of the Inambari River (a tributary of the Madre de Dios River, which is a tributary of the Madeira). The dam was to be built at the confluence of Segments 2, 3 and 4 of the CVIS. The CHI was set to produce 2,200 MW and its construction cost was estimated at US\$4,900 million (meaning that its original budget was almost 2.5 times greater than the final cost of building the CVIS, not including maintenance costs). The reservoir projected for the CHI was set to cover around 400 km² and its location was situated downstream of lands that are today mainly covered by Amazon forests. The reservoir would have flooded 100 km of the CVIS; as such, it was estimated that US\$200 million would need to be invested solely in water. Replacing the flooded highway would cost US\$360 million and would affect additional forest areas. The reservoir would displace around 5,000 people and would affect another 3,000 (downstream of the reservoir). It would also affect indigenous lands and would be located next to a buffer zone in the Bahuaja Sonene National Park, which led to environmental concerns that farmers would be displaced by the reservoir, which was scheduled for development in the park (Raetz-Luna & Dammert, 2012). Independent estimates indicated that deforestation in the reservoir, the transmission lines, the new highway, and new settlements for the displaced population could require more than 300,000 ha in less than a decade (Serra, 2010) although other estimates indicated that direct deforestation would affect around 96,000 ha (Serra, Malky & Reid, 2012). In an analysis of the costs and benefits of the Inambari project, Serra, Malky and Reid conclude that "the project is highly profitable for the promoter but undesirable for Peruvian society due to the high environmental and social costs" (2012, pg. 47). Environmental and social resistance to the project was based on the premise that it would not benefit society.

To move ahead with the studies and permits required for the Inambari project, in May 2008 the Electric Power Generation Company of the South Amazon (EGASUR) was created. It is important to note that the company was incorporated prior to the signing of the Energy Agreement but high-level conversations were already underway between the governments of Peru and Brazil to advance efforts for energy integration between both countries. EGASUR was a subsidiary of Inambari Geração de Energia SA (IGESA), a consortium incorporated in Brazil that was comprised of large Brazilian companies: the construction company OAS (51 % of the shares) and the state companies Eletrobras (29.4 %) and Furnas (19.6 %), both controlled by the Ministry of Mines and Energy of Brazil. On June 12, 2008, the Peruvian state awarded a temporary concession to EGASUR for a period of 4 months to conduct feasibility studies on electric power generation at the

future CHI (Raez-Luna & Dammert, 2012). Temporary concessions gave the company exclusive right to conduct feasibility and environmental impact studies in the electricity sector that, once delivered in the time period specified and approved, would trigger the award of a definitive concession to begin construction. This point is important given that in legal terms, the reason that EGASUR did not obtain the definitive concession was that it had failed to deliver the EIA. Consequently, the project was shelved.

3.2 Process to conduct studies and project cancellation

Due to the perception that the economic benefits for Peru were very limited while the potential for socio-environmental impacts was high, the project met with intense resistance from environmental organizations in civil society that have a presence in the territories of Puno, Cuzco and Madre de Dios Madre de Dios (and already had experience with collective action through the Civil Society Working Group for the Southern Inter-Ocean Road Corridor and which formed a special group known as the Amazon and Hydroelectric Collective¹⁶), technical institutions such as the Association of Engineers of Peru, indigenous organizations such as the Native Federation of the Madre de Dios River and Tributaries (FENAMAD) and –decisively– social organizations from Puno, notably the peasant patrols, with the support of municipalities and the regional government of this department. In January 2010, the Ombudsmen’s Office included the project in its registry of active conflicts (Raez-Luna & Dammert, 2012).

Conversations to approve the Energy Agreement; EGASUR’s advances to obtain the definitive concession for the CHI; and an intensification in citizen mobilizations to reject the Agreement and the Inambari project took place simultaneously in the years 2008 through 2010. EGASUR conducted the first round of informative workshops in April 2009 to obtain approval for the environmental impact study. The second round was in August of the same year. During this second round, workshops could not be held in two locations due to local resistance to the project: the Native Community of San Lorenzo (Cuzco) and Puerto Manoa (Puno). On August 20, 2009, The Regional Government of Puno published an announcement rejecting the CHI project. This announcement outlined negative impacts and stated that the regulations for citizen participation in EIA procedures had been violated (Raez-Luna & Dammert, 2012, p. 28).

EGASUR had a temporary concession to prepare feasibility and environmental impact studies. A definitive concession would have taken place if the studies had been approved. Subsequently, construction would have begun. But as noted, resistance to the project had arisen in Puno, in some organizations in Madre de Dios and among active civil society sectors at the national level. In this context, the national government made some efforts to push the project along. On March 2010, the Vice Minister of Energy held a public audience in San Gabán to explain the project’s benefits. This effort was unsuccessful. In the days that followed, a regional strike was held in Puno against the CHI. In a climate of conflict, it was not possible to conduct the informative workshop scheduled for Puerto Manoa, which was necessary to culminate the environmental impact study within the two years that EGASUR had been allotted for the temporary concession. The Ministry of Energy and Mines renewed the temporary concession until October 7, 2010.

In this context, and despite criticism of the negotiation process with Brazil, the Peru-Brazil Energy Agreement was signed in Manaus on June 16, 2010. A few months later, on September 24, 2010, President Garcia presented Bill 4335-2010-PE, “Law that Modifies the Legal Framework for the Electricity Sector and Authorizes the Initiative to Develop the Single Ordered Text of Norms to Regulate Activities Relative to Electricity” to Congress. This bill proposed eliminating the temporary concession figure and the financial and environmental requirements (including the approval of EIA) to obtain the definitive concession for electricity projects. The bill stipulated that the modifications would also be applicable to processes that were underway, such as the Inambari project. The bill met with strong opposition from civil society and political organizations and was subsequently rejected by Congress.¹⁷

On October 7, 2010, the period allotted for the temporary concession expired. EGASUR presented a feasibility study but no EIA, which was not ready because the company had not been able to conduct the informative workshop in Puerto Manoa. In this context, the company was in legal limbo. EGASUR called for a new workshop in Puerto Manoa for November 27, 2010 but the Ministry of Energy and Mines, after

¹⁶ The members of this collective included the NGO Derecho Ambiente y Recursos Naturales; Sociedad Peruana de Derecho Ambiental; Wildlife Conservation Society; and Pronaturaleza.

¹⁷ For a detailed description of this process, see: Raez-Luna and Dammert, 2012.

protests in Puno, called the workshop off alleging that technical guidelines for citizen participation had not been followed. Raez-Luna and Dammert (2012, pg. 30) described the outcome of the process in the following way:

In a climate of growing irritation and uncertainty, fueled by a lack of clarity regarding the project's continuity, in June 2011, in the middle of national elections, massive protests were held in Puno with the defense lines and peasant patrols of Carabaya that opposed the Inambari project. Social pressure led MINEM to issue a Ministerial Resolution 265-2011-MEM/DM that declared that the temporary concession awarded to EGASUR was "concluded and definitively dissolved." Although this resolution contributed to legal confusion about the project (which declared a concession that had expired months ago extinct), it was seen a political victory for the people.

The process ended formally on June 17, 2011, five weeks before the change of administration¹⁸. The citizen patriation procedure to develop the EIA was cancelled. EGASUR appealed this decision but on September 30, 2011, during Ollanta Humala's government, MINEM struck down EGASUR's appeal and cancelled the environmental impact assessment.

The EIA that EGASUR prepared estimated the environmental and social costs of mitigating impacts at the budget level: resources allotted for the social portion totaled US\$168 million while resources for environmental management were set at US\$86 million. The socio-environmental budget for these factors combined represented less than 6% of the total investment in the project (Serra, Malky & Reid, 2012, pg. 24). The measures foreseen by EGASUR to mitigate impacts on the water and land ecosystems were considered insufficient by independent evaluators such as Serra (2010).

Notwithstanding the contents of the EIA, it is noteworthy that the organized population boycotted the approval process. The project was not cancelled because the environmental impact assessment was unviable; it was cancelled because the local population did not trust the mechanism used for the EIA and refused to participate in the process, which meant that the study was unable to fulfill its last requirement. This case shows the importance of civil society mobilizations in the defining the destiny of processes to approve megaprojects with environmental and social impacts in the Amazon.

4. Discussion

The Peruvian government made a political decision to execute IIRSA projects in its territory and the most emblematic of these was CVIS. These projects were driven at the highest political level by the governments of Peru and Brazil. CVIS's projects were backed by a broad coalition that was interested in ensuring that the project moved forward. In this context, the Peruvian government fast-tracked the construction process without developing safeguard mechanisms that were aligned with the project's potential impacts despite the fact that similar projects had reported negative experiences and ample warnings existed of the environmental and social risks that building the CVIS would imply.

The project was pushed through by the government of Alejandro Toledo. It was exempted from national administrative processes, such as the SNIP. The overvaluation reported after the project and revelations of corruption linked to the CVIA in the framework of *Lava Jato* suggested that the perspective of undue earnings (corruption) also played a role in the decision to rush the project and move ahead without an adequate assessment of environmental and social components.

The environmental impact studies were conducted by segment, grouping together portions of segments. However, the information available for each segment of the stretch differed, as did the level of prior assessment of each area by the State. Although this was legal, it contradicted the spirit of the IIRSA, which was promote Axes of Integration and Development in a comprehensive manner. This also contradicted the

¹⁸ The transition of power between the second government of Alan Garcia and that of Ollanta Humala took place on July 28, 2011.

economic justifications for the CVIS, which refer to very broad territorial impacts: the ambit of assessment for environmental impacts must be proportional to the promises for development that are offered.

For a project of CVIS's dimensions, the absence of a comprehensive environmental impact assessment and an EAE is of concern given that it leads to questions about the extent to which the project was implemented in ways that are compatible with the objective that it had declared: to build a pillar of sustainable development. The environmental and social impacts of the CVIS were addressed after the relevant decisions about the project had been made. This is also related to the fact that the environmental instruments for the IIRSA initiative were available after the CVIS had been construction. In general terms, the environmental dimension was not prioritized from the beginning, and specifically during the territorial planning process for the IIRSA initiative or the CVIS. If the political decision has been taken, it is unlikely that environmental and social considerations can have an impact on project design; delay project execution to prepare socio-environmental standards; or considerably increase budgets.

CAF was diligent in generating considerations that strengthen possibilities for socio-environmental management in the framework of the CVIS and made efforts to apply safeguards on the project. Nevertheless, there were key aspects that CAF ignored. For example, it did not develop a comprehensive EIA and conducted an EAE extemporaneously. CAF insisted that programs to mitigate indirect impacts be implemented in the highway's sphere of influence. But these demands came too late; efforts were atomized; and budgets were inadequate and implemented by weak institutions whose capacities were not up to the challenges placed before them.

In the case of CHI, there are a series of similarities with CVIS, but also significant differences beyond the fact that CHI was never implemented. Although the CHI was not part of IIRSA, its implied energy interconnection between Peru and Brazil, meaning that fell within the framework of the binational agreement that was promoted by the highest levels of the governments of both countries. Both cases entailed large infrastructure projects conducted by Brazilian construction companies in the framework in an international agreement. OAS, like the construction companies on the CVIS, has been caught up in corruption scandals in the *Lava Jato* case and has participated in other projects that have been questioned in Peru. In both cases, the Peruvian government implemented legal modifications to propitiate non-compliance or to make compliance with existing socio-environmental norms more flexible, but this did not succeed in the case of Inambari.

In terms of the outcomes of both projects, it is pertinent to revisit the perspective of coalitions of actors based on the ideas of Rudel and Horowitz (1993). The process to build CVIS obtained social legitimacy based on the ample coalition of support for construction given that the highway promised commercial integration, proximity to services as well as increases in land prices and more potential to generate income. This was not the case with the CHI, which rather than intensifying the use of land, flooded the land. The project lacked backing from citizens and generated major resistance that was facilitated by the existing conservation coalition, which included GTSC and its subsequent expression -more limited- through the Colectivo Amazonía e Hidroeléctricas. GTSC articulated different types of actors in the territory that were concerned about the impacts of the CVIS and this experience was the basis for collective action against the CHI. Although in both cases the highest levels of government moved to ensure project implementation (including regulatory changes), the lack of a broad coalition to lend legitimacy to the project was a determinant in the decision to halt the Inambari project. The role of civil society, is, as such, a determining factor in deciding whether projects should be built and in implementing pertinent safeguards.

In the case of CVIS, it is evident that the safeguards were insufficient to act as a counterweight to political decisions to build a megaproject for infrastructure in an environmentally and socially sensitive such as the Amazon. Nevertheless, the safeguards contributed to strengthening incipient environmental institutionalization in the country. But the safeguards of development banks cannot replace the State, which has (or should have) the capacity to plan a territory, make regulatory changes and implement public policies. These banks can, however, exercise pressure to strengthen public policies for sustainability. As an official from the Ministry of Environment in Peru commented in an interview for this study:

In order for safeguards to be effective, they must have a policy base. If the State that receives the loan has no logistical capacities, clear policies, established procedures or resources for other things such as oversight, it is very difficult for the safeguards to have a significant impact. The safeguards on their own, without these conditions, are a drop of water in the desert. But they do have the potential to achieve change. Development banks can generate enabling conditions through safeguards: they establish relations with the minister of economy, the president of the council of ministers and with the president. The banks have enough leverage to generate conditions through loans.

The cases studied suggest that the effectiveness of safeguards depends not only on their content and design but also on the conditions in which they are implemented and on the political disputes between project promoters and those who exert pressure to incorporate safeguards. Political backing for the execution of safeguards; the capacities of the governments that must implement them; and the degree to which previous lessons learned are applied are factors that have an impact on effectiveness. In more specific terms, the cases evaluated show the importance of adequate temporality, budget and design for safeguard mechanisms as decisive factors in their effectiveness. In the case of CVIS, although safeguards played a positive role, they were insufficient to face the enormous environmental and social challenges that the project implied.

5. Lessons Learned

Safeguard mechanisms contribute to the application of criteria for social and environmental sustainability on infrastructure projects but on their own, cannot compensate for deficiencies in planning and territorial management, which correspond to state entities. The development banks' safeguards add value to regulatory frameworks and national management capacities but if the conditions for environmental or social administration at the state level are poor, prior to building the infrastructure projects it will be necessary to significantly strengthen these capacities. On the contrary, any attempt to apply bank safeguards is a "drop of water in the desert." The development banks' safeguards can contribute to strengthening regulatory frameworks by incorporating specific aspects, or by guaranteeing more comprehensive compliance with measures to mitigate impacts, but they cannot compensate for inexistent regulations or deficiencies in the management capacities of state entities.

Development banks and governments must perform an exhaustive review of the lessons learned from other similar development projects prior to making decisions to undertake infrastructure projects in tropical forests or designing strategies to mitigate impacts. Making the same mistakes seems to be a common practice in cases involving financing for large projects in tropical forests. To build the CVIS, lessons were not gathered from other similar projects such as the Polonoeste project, which was implemented in Brazil in the 1980s with financing from the World Bank. Despite a series of problems that have been documented relative to the CVIS, different entities of the Peruvian state have recently insisted on proposing initiatives to build new highways and infrastructure projects even though socio-environmental institutionalization has yet to be strengthened and no clear safeguards exists. The promoters of these new projects must conduct an in-depth study of the lessons learned on previous projects.

Environmental studies that are approved for project segments and after the decision to build has been made make it difficult to identify the aggregated impacts that can lead to coherent and articulated mitigation strategies. In the case of CVIS, safeguard efforts were atomized. Both impact evaluation and mitigation strategies must be aggregated in megaprojects such as those examined here despite the legal challenges that this may generate. This should also apply for case in which different banks separately finance different stretches or sections of work: the banks must guarantee that the accumulated impacts are evaluated as a set given that atomization impedes consistent evaluation and planning to mitigate impacts.

Infrastructure works that entail new construction or paving in areas that have never been paved should not be undertaken without **first** developing comprehensive territorial development strategies and budgets to finance the same. In the case of CVIS, as on other similar projects, the rush to initiate construction relegated possibilities of applying complementary programs to mitigate impacts or to generate

development mechanisms that take advantage of the infrastructure built in a sustainable way to the back seat. CAF insisted that a program to mitigate indirect impacts be developed prior to receiving a bridge loan to start construction but this program was not enough to mitigate the impacts that experts had foreseen and which later occurred. This bridge loan allowed work to begin on a project that had been pushed through by the Peruvian government without the adequate socio-environmental guarantees. Development banks should not back, and much less facilitate, hasty decisions on projects that can generate severe socio-environmental impacts such as the CVIS or the CHI.

When defining the area that will be impacted by an infrastructure project, it is necessary to establish a relation in feasibility studies between the geographic ambits where economic impacts may emerge and those where socio-environmental impacts are expected.

In cases of road works in tropical areas, a safeguard that has proven effective is assigning land rights and generating systems for enforcement; these initiatives do not contemplate totally removing the forest cover, including natural protected areas, ecotourism concessions, forest concessions and non-timber areas, etc. This implies not only granting rights but also strengthening the sustainable management of these areas.

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List of abbreviations

APP	Public Private Partnership
BNDES	National Bank of Economic and Social Development of Brazil
CAF	Development Bank of Latin America
CAO	Certificate of Progress of Work
CHI	Inambari Hydroelectric Station
COFIDE	Development Bank of Peru, formerly the Financial Development Corporation
COFOPRI	Commission to Formalize Informal Property
COSIPLAN	South American Council for Infrastructure and Planning
CRPAO	Certificate of Recognition of Rights of PAO
CTAR	Transitory Council of Regional Administration
CVIS	Southern Inter-Ocean Road Corridor
DEMI	Office of Economic Studies of MYPE and Industry
DGSA	Head Office of Socio-Environmental Affairs - MTC
EAE	Strategic Environmental Assessment
EGASUR	Electric Power Generation company of the Southern Amazon S.A.C.
EIA	Environmental Impact Assessment
EID	Integration and Development Axes
ENBCC	National Strategy for Forests and Climate Change
FADEMAD	Agricultural Federation of Madre de Dios
FEDEMIN	Mining Federation of Madre de Dios
FENAMAD	Native Federation of Madre de Dios River and Tributaries
FOMIN	Multi-lateral Investment Fund, Facility for Small Businesses
FONDAM	Fund of the Americas
FONPLATA	Financial Fund for the Development of the Plata Watershed

GOREMAD	Regional Government of Madre de Dios
GTSC	Working Group for Civil Society of the Southern Inter-Ocean Road Corridor
IGESA	Inambari Geracao de Energia S.A.
INRENA	National Institute of Natural Resources
MDL	Clean development mechanism
MINAG	Ministry of Agriculture
MINAGRI	Ministry of Agriculture and Irrigation
MINAM	Ministry of the Environment
MTC	Ministry of Transportation and Communications
OCDS	Coordination Office for Sustainable Development - CAF
ONG	Non-governmental organization
OSITRAN	Supervisory Entity for Investment in Transportation Infrastructure for Public Use
PAMO	Annual Payment for Maintenance and Operation
PAO	Annual Payment for Works
PNBS	Bahuaja Sonene National Park
PNCBCC	National Forest Program to Mitigate Climate Change
PROINVERSION	Private Investment Promotion Agency
REDD	Reduction of Emissions due to Deforestation and Degradation
SERFOR	National Forest and Wildlife Service
SERNANP	National Service for Natural Areas Protected by the State
SNIP	National System for Public Investment
RNT	Tambopata National Reserve
UNASUR	Union of South American Nations
VDSA	Vic Presidency of Social and Environmental Development - CAF
ZRTC	Reserve Area of Tambopata - Candamo



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ACKNOWLEDGMENTS

The author thanks Rosario Santa Gadea, Rosario Gomez, Cynthia Sanborn, Rebecca Ray, Kevin Gallagher and Julie Klinger for their detailed comments on previous versions of this work. Rosario Santa Gadea and Rosario Gomez also made suggestions and provided contacts for interviews and information-gathering that were very useful in completing this research. Tania Galvan was in charge of developing the maps and Diego Perez took pictures during fieldwork along the highway, which was thanks to the guidance provided in Madre de Dios by Ramon Rivero. Leolino Rezende and Rebecca Ray contributed by developing the statistical tables that support this document. Cesar Gamboa, Ernesto Raez-Luna and Anthony Bebbington made comments on the central arguments of the study. The author thanks all of these individuals for their assistance but assumes full responsibility for any errors or omissions that this research may contain.