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Infrastructure and Exclusion: Roadbuilding, Extractive Industries and Environmental Degradation in the case of IIRSA Sur through Southern Peru

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Infrastructure and Exclusion: Roadbuilding, Extractive Industries and Environmental
Degradation in the case of IIRSA Sur through Southern Peru

By Kimberly Farias

May 2016

A Master's Paper

Submitted to the faculty of Clark University, Worcester,
Massachusetts, in partial fulfillment of the requirements for
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Jude Fernando, Ph.D., Chief Instructor

Abstract:

Infrastructure and Exclusion: Roadbuilding, Extractive Industries and Environmental Degradation in the case of IIRSA Sur through Southern Peru

Kimberly Farias

This paper considers the case of the Southern Interoceanic Highway, a major transportation corridor linking the Atlantic and Pacific coasts through Southern Peru under the auspices of the Initiative for Regional Infrastructure in South America (IIRSA). The highway has raised significant social and environmental issues, including concern around the lack of mitigation planning on the part of the Peruvian government as well as the exclusion of civil society from participating in a review of the project. Based on GIS mapping of this highway and secondary research this paper finds that unprecedented migration into the region has contributed to an increase in illegal extractive activity such as gold mining and logging. Consequently, environmental degradation has resulted as rivers become polluted from mercury due to gold mining, and deforestation depletes soil and stresses fragile ecosystems. Furthermore, an analysis of spatial data shows that areas designated as protected, including Bahuaja-Sonene National Park and Tambopata National Reserve, have done little to slow the incursion of these environmental issues. Finally, this paper closes with a discussion of how civil society seeks to address social exclusion through NGO and civil society initiatives, concluding that processes of inclusion and transparency can mitigate social and environmental issues in future regional infrastructure projects, and a more just distribution of costs and benefits of development in Peru can be established.

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Introduction:

Roads are often portrayed as companions to development efforts and have frequently been illustrated as catalysts of economic development. Yet, roads are complicated fixtures in people's lives. They can represent connectivity to people, places and ideas. For rural community dwellers, this importance is magnified, as roads represent links to necessities that cannot be purchased or developed locally. However, not all people live near a road. Some villages make due with tracks and trails instead of car-accessible, paved roads for transport. Upon first assessment of this situation, it may seem desirable for these communities to gain access to state-sponsored roads for convenience and increased access to amenities such as healthcare, education and economic opportunities. However, while these benefits may indeed exist for communities integrated into the official road network, socio-ecological concerns also emerge. Roads are often taken for granted. They are seen and not discussed. However, within the context of development they are very important to consider because they are a key determinant of land use in the Amazon (Perz et al. 2008).

The subject of this study is the road construction project often referred to as the Southern Interoceanic Highway, or IIRSA Sur, through southern Peru. The highway continues across the border into Brazil and eventually connects with other, previously constructed highways across the entire continent, creating a transcontinental mega-highway that connects the coastal ports of the Pacific coast of Peru with the ports of the Atlantic coast of Brazil. This paper is primarily concerned with the section of this highway referred to as "tramos 2 and 3", which extend from the Peruvian cities of Urcos to Iñapari, and has its longest section running through the province of Madre de Dios, which is the subject of this study. This was the last part of the greater transcontinental highway to be paved, construction officially beginning in the Madre de Dios region in 2006. Through

rainforest, rivers, mountains and other breathtaking landscapes, IIRSA Sur passes through some of the most biodiverse regions in the world, and some of the most richly endowed with natural resources such as gold and hydrocarbons as well.

Communities have existed in Madre de Dios, primarily along the Madre de Dios River, for many hundreds of years; however, until completion of the highway, populations remained small due to the rural and inaccessible nature of the area. According to the 2005 census, the entire region of Madre de Dios had just 92,000 residents, 63,000 of whom resided in the largest city in the region, also the capital, Puerto Maldonado (Instituto Nacional de Estadística e Informática 2005). The social impacts of this highway infrastructure project, namely increased migration and shifts of livelihood strategies, have increased environmental concerns in Madre de Dios, notably illegal mining and deforestation activities. This paper explores these issues and the lack of participation and clarity on the part of the Peruvian government and construction contractors, which has exasperated social, and by extension, environmental issues in Madre de Dios. This paper continues thereafter to understand IIRSA as a new development process in Latin America, and further sheds light on how development is playing out in context of large infrastructure projects which are increasing throughout the region. Finally, this paper offers insight into how environmental governance can mitigate issues seen in the Madre de Dios region in future infrastructure projects in the Amazon.

The research questions this paper seeks to answer are as follows: How has the planning process that excluded civil society in this emblematic case of the Interoceanic Highway through Madre de Dios contributed to social tensions and environmental degradation as a consequence of development? Furthermore, how has the lack of adequate mitigation planning contributed to the expansion of these issues, and how can the lessons learned in this case be applied to future projects to avoid the issues

experienced in this case? In order to answer these questions, this paper first looks at the IIRSA initiative in order to understand how the planning and funding entities contributed to the lack of transparency and exclusion of civil society. Then, this paper looks at the literature on roadbuilding and development in order to discern how roadbuilding has been understood by researchers to influence migration and resulting social tensions as well as uneven development and environmental repercussions of roadbuilding through rural, tropical landscapes.

This paper continues on to discuss the methodology used to gather information and complete this research. In the subsequent section labeled “Analysis”, this paper discusses the livelihood changes attributed to the new highway, and how unprecedented increases in migration to the region have affected livelihood strategies, namely through the increase in global prices of gold which led to an increase in illegal goldmining in the region. Next, the connection with the lack of planning for this increased migration and subsequent environmental degradation such as pollution and deforestation is examined, including in protected areas that should, but don’t, deter activities leading to such issues. Finally, the paper concludes with analysis of the IIRSA Sur case in the context of infrastructure development projects in this region as a whole, and how this case sets a precedent for lack of transparency and participation to continue what needs to be done to prevent it from occurring in future IIRSA infrastructure projects. By looking at this case study in this way, this paper seeks to contribute to the understanding of how IIRSA projects are being conducted, and how they could be better planned and managed in the future to increase the benefits to local populations and decrease social and environmental impacts that diminish the perks of gaining access to development projects such as new roads.

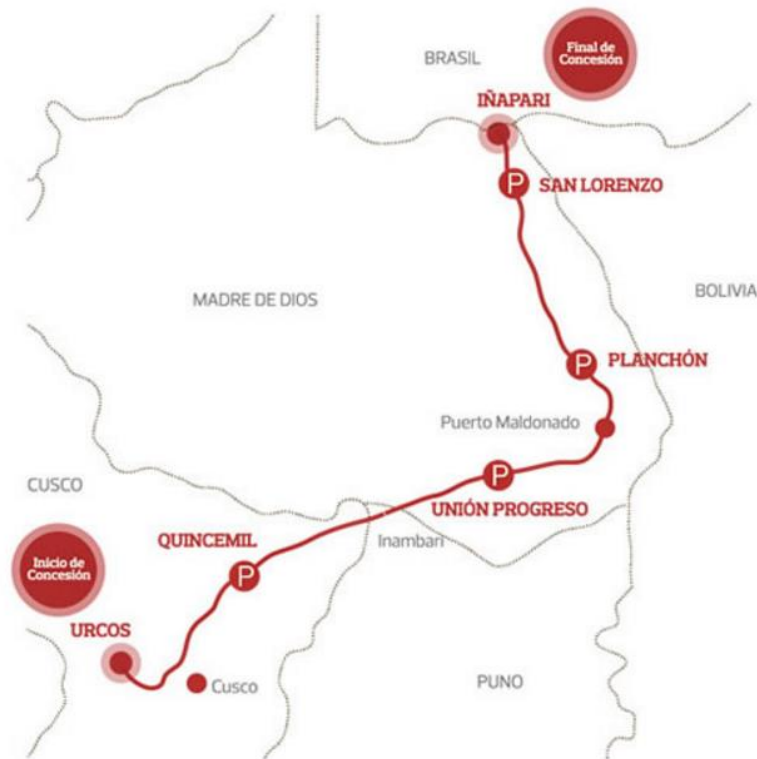


Figure 1 Depicts a map of tramos 2 and 3 of the Southern Interoceanic Highway that comprise IIRSA Sur (Odebrecht 2014).

Background on case:

The Southern Interoceanic Highway was conceived within the context of

IIRSA: the Integration of Regional Infrastructure in South America. IIRSA was launched in 2000 by the Brazilian Government with the leadership of then-president Fernando Henrique Cardoso and the Inter-American Development Bank (IDB). The goal was promoting investment in infrastructure projects in South America in support of regional integration. IIRSA Sur, built and completed in this region not only made the region more accessible to visitors and transport of goods, but also made it more accessible to extractive industries such as mining and logging. Construction began through Madre de Dios in 2006, and the highway officially opened in 2011.

IIRSA's stated goal to increase infrastructure projects in South America has been very successful in obtaining funding and pushing infrastructure projects forward (Zibechi 2006). Therefore, it is important for development professionals, as well as community members who face possible integration via a new road, to understand comprehensively

both the boons and liabilities that these projects are likely to bring. The financing entities of IIRSA are the Inter-American Development Bank (IDB), the Andean Development Corporation (CAF), and the Fund for the Development of the Rio Plata Basin (FONPLATA). With leadership, funding, and contractors for IIRSA being comprised almost entirely of Brazilian companies, this endeavor is a very much a product of Brazilian economic and political interests. Yet IIRSA is more than just an initiative to create infrastructure projects in South America. It is an ideology for progress, connection and economic growth. Scholar Sonja Pieck interviewed an IDB staff member who said, “The idea is to have more integrated countries in South America, to have more connection” (Pieck 2011), which will be discussed in more detail below.

Literature Review:

In order to fully understand how the completion of the southern portion of the Interoceanic Highway through Madre de Dios has changed the livelihood strategies of those in the region, and furthermore shifted the way development is being implemented in rural regions in Latin America, it is important to understand what past scholars have asserted about the topic. The following section, therefore, will look at relevant publications as they relate to this case.

On infrastructure projects and rural livelihoods- Roadbuilding, Connectivity and Development

According to literature, access to roads is documented to have positive effects on rural dwellers’ lives and, in many cases, seems to increase family income for poor, rural residents more so than if they did not have access to a road. For example, inadequate roads can cause burdens on local, small-scale farming businesses in developing countries when farm-to-market costs are high. This is especially notable when coordination and

handling costs for logistically getting goods to market before they spoil can be costly in time and resources. Indeed, simply the time spent getting to and from market centers can be excessively demanding without access to roads. Therefore, in much of the literature that promotes roadbuilding as a way of lifting the rural poor out of poverty, it is suggested that states should prioritize rural road development in countries where small-scale agriculture represents an important rural livelihood (See for example Obare, Omamo, and Williams 2003). Therefore, the issue of access is important to roadbuilding endeavors, and is important to the case of IIRSA Sur in that roads can be drivers of positive change regarding livelihood strategies, especially for rural agricultural communities like a Madre de Dios. Put another way, the highway project through Madre de Dios was not necessarily destined to cause social tension and environmental damage. If built through inclusive and transparent processes, this road could have had the desired effect of aiding rural livelihoods without the negative consequences. This research also serves to show why people generally want roads built near them in rural places. Indeed, many people in Madre de Dios had been asking for a road for many years through the region (Harvey and Knox 2008).

On migration due to roadbuilding

It is clear in the literature on this topic that roadbuilding activities are a key determinant in migration activity, and this migration can cause uneven development, benefitting some settlers over others. Sanna Maki documents this reality in the Peruvian Amazon in her research on causes and consequences of state-sponsored roadbuilding in northwestern Peru (Mäki, Kalliola, and Vuorinen 2001). In this case, roadbuilding initially attracted migrants to the region as families looked for new agricultural lands along the road's route. When construction lagged behind schedule due to various constraints, however, many of the families chose to move on and leave the land they had settled

(ibid). This demonstrates the ability for roadbuilding to act as drivers of socio-ecological change, both in terms of land use (the region becoming more agricultural as settlers arrived) and also in terms of family migration patterns. It is easy to see how new roads can be a source of hope for families looking for a better life, yet they do not always deliver on their potential for increased economic gains or opportunities for increased wellbeing. It is mentioned in Maki's research that communities located near deteriorated, decayed roads due to negligence and lack of upkeep often become abandoned as inhabitants seek communities with better infrastructural integration for their homes (ibid). This is the case in Madre de Dios as well, as some settlers have arrived to the region only to find that their best hope of making an adequate living is to participate in illegal gold mining and logging. Those that do not make use of these livelihood strategies as well as those who cannot make use of the road due to lack of access to motor vehicles are often "left behind" in the development of the area and experience rising cost of living without greater pay. This adds to the social tensions witnessed in communities recently connected to road systems and is certainly the case in Madre de Dios as well.

On the uneven development of roadbuilding

Road building does not automatically enhance access to markets for rural people, especially for small-scale and subsistence agriculturalists in developing countries. Indeed, access is often uneven, further leading to uneven development in rural areas. For example, since poor residents tend to lack ownership of and even access to use of motor vehicles, they thus cannot reap the full benefits that roadbuilding can have in rural farming communities, namely increased access to markets (Bryceson, Bradbury, and Bradbury 2008). In fact, it has been surmised that roadbuilding projects will be less helpful for the poor people living along projected routes than for stakeholders in

destination points, such as companies that wish to use roads to ship materials from internal areas out to seacoasts in order to sell them on the international market. Indeed, “Roads will impact on rural economic groups differently and are likely to have the least effect on the poor” (ibid). Therefore, it is important to note that access to roads and usability of roads are not always one and the same, and should be considered separately when evaluating the impacts roads have on rural communities. Furthermore, in subsistence farming communities, it has been observed that there is very little demand for vehicles, due in large part to lack of ability to purchase even moderately priced motorized vehicles such as mopeds or motorcycles (Ellis 1997). It is implied here that these vehicles are not available for sale in many rural regions, and that the expansion of accessibility of these vehicles would greatly increase the usability of roads for rural residents in Madre de Dios.

The goal of reducing poverty has catalyzed justifications of roadbuilding in development efforts, as is evidenced by the many road-building projects funded by the World Bank in the 1970s, 1980s, and 1990s. However, the project impact reports that often tout increased income and productivity for farms along road routes do not distinguish between the types of beneficiary, i.e., which socioeconomic group a farmer originally belonged to (Van de Walle 2002). Therefore, the true impact of these roadbuilding activities on poverty are variable and case-specific. Therefore, the extent of the influence roadbuilding has had on rural residents in reducing poverty or increasing income should be taken case by case, and positive correlation between having access to a road and having better income for local residents cannot be taken for granted. This should be kept in mind in considering the case of Madre de Dios due to the unequal development experienced in the wake of road construction, discussed in more detail below.

On the environmental impacts of roadbuilding

The Madre de Dios region is an important area for biodiversity, as will be discussed later in this paper. This biodiversity is directly threatened by the penetration of the road into these regions, as fragmentation of habitat can result from linear clearings in tropical forests even from narrow tracks and trails (less than 30 meters wide) and becomes progressively more detrimental as more land is cleared (Laurance, Goosem, and Laurance 2009). Paved roads further degrade ecosystems and habitats by causing physical disturbances such as runoff issues in rain storms, chemical pollution from sources such as residue from leaded gasoline, edge effects, road kill mortalities and greater instance of introduction of invasive species (ibid). In other words, it is that roads in and of themselves can be antithetical to conservation efforts in locations with high biodiversity and threatened species such as Madre de Dios.

Furthermore, state-sponsored road building leads to a network of unofficial roads that branch off the main route. These secondary networks of roads become an even larger problem than the official road, as more deforestation can be attributed to the secondary roads that branch off the main road than the official road itself (Delgado 2008, Perz et al. 2010). In this way, the main road acts as a catalyst for the unofficial roads that lead to logging, mining and new settlements off the Interoceanic Highway (Perz et al. 2008). Thus, instead of conceptualizing roads as lines of penetration leading from one place to another, they can be pictured as diffuse webs with clusters of tributaries branching off population centers. Predictive land-cover models expect an increasing amount of deforestation to continue to occur, even though the paving of the highway is complete (Delgado 2008), due in large part to secondary road networks that will continue to appear as land-use changes in these areas demand further penetration and further resource exploitation in the region.

In summary, roads can be an important resource for rural dwellers. They connect people to resources, markets, and services. It is no wonder, then, why many rural villages in Latin America have cited road building as a high priority on their development project “wish lists” (Wilson 2004). Road building through rural areas also has consequences, however. For example, roads have proven to be a key determinant for migration patterns, since new roads open up land for settlement. Furthermore, roads also can be understood by their usability, which is not always the same for everyone. For example, poor farmers who cannot afford motor vehicles may not be able to use the road, and thus may not benefit from the project in the same way that a business owner might. Finally, roads have undeniable environmental repercussions that have been well documented. In tropical areas where ecosystems are fragile, the deforestation and habitat loss from roadbuilding can be especially dire. This is a key matter to keep in mind while this paper explores the link between livelihood changes in Madre de Dios as a consequence of the new road—mainly through the introduction of migrants who have taken up the practice of illegal gold mining to the region—and the environmental degradation that has occurred in Madre de Dios since construction of the road began in the form of pollution and deforestation that threatens the valuable biodiversity and tropical ecosystem characterizing the region.

Methodology:

My interest in this case resulted from a previous academic project in which I looked at how a new mining road built through the town of Molejón in the province of Coclé, Panama, affected socio-economic circumstances along its route. It became clear to me through the process of doing that research that new roads profoundly affect social and environmental circumstances of the people who live in the places in close proximity to the new roads. Therefore, as a student at Clark University I began exploring IIRSA Sur as an emblematic case of the effects of mega-infrastructure projects on social,

environmental and developmental realms on the regional level. This paper makes use of GIS analysis completed in the region of Madre de Dios by myself and colleague Benjamin Tweed of Clark University in the fall semester of 2015. This GIS analysis shows rates of deforestation in protected areas by using global forest change data available publically from the University of Maryland Department of Geographical Sciences (M. C. Hansen 2016). Using this data, we measured deforestation that has occurred as a result of the Southern Interoceanic Highway, completed through Madre de Dios, Peru in 2011. Deforestation data from the years 2001 to 2014 were grouped into three time periods, representing three phases of road construction: pre-construction (2001-2005), during construction (2006-2010) and post-construction (2011-2014). The analysis for this project included “buffering” the road to distinguish deforestation due to the road from “normal” deforestation (deforestation occurring outside of the influence of the road), and calculating areas of deforestation in close proximity to the road. Also, areas of total deforestation and those occurring in protected areas were identified for the sake of comparison and are discussed in some detail below. In planning this GIS analysis, we set out to answer the question: To what degree has the highway in Madre de Dios increased deforestation? What we found is the highway has significantly increased deforestation at an accelerated rate, and can foreseeably be expected to continue to do so in the future.

In this paper, I also analyze secondary research completed by scholars who have taken an interest in this case. However, a dearth of literature still exists from the voices of the people who live in the region and have experienced these circumstances first hand. Therefore, in order to try to incorporate some of these views, blog posts, podcasts, YouTube videos and news articles related to particular issues have been taken into consideration. For example, the main construction contractor for the building of IIRSA Sur is the Brazilian company Odebrecht. As part of an initiative to market the new road as a driver of positive change, the company released a series of videos on the online platform

of YouTube depicting how family businesses along the route of the highway have prospered since the construction was completed. The assumptions and implications of these videos will be discussed in greater detail below; however, here it is noteworthy that sources such as this one have been used in this paper to contribute to a greater understanding of how the development process of the highway has affected perspectives that have not been published academically.

Analysis:

In this section, I begin by exploring how the completion of the highway has had very real impacts on the people's livelihood strategies in the region of Madre de Dios. These social impacts catalyze environmental concerns in the development of the highway, and as such, are intrinsically intertwined. I continue thereafter to examine how the lack of participatory process in planning and executing the construction of this project has exasperated social, and by extension, environmental issues in Madre de Dios. Furthermore, the resulting lack of transparency and communication on behalf of the Peruvian government informing citizens of Madre de Dios has set a negative precedent in how future construction projects of this magnitude should be executed. Finally, this section tackles how the development process in the case of IIRSA Sur is emblematic of the development process in Latin America as a whole, and further sheds light on how development is playing out in the context of large infrastructure projects. These infrastructure projects are increasing in quantity throughout the region and further contribute to a growing trend in connecting rural spaces to neoliberal networks of trade and resource extraction.

Part 1: Social impacts and environmental concerns

For communities in Madre de Dios, the completion of the IIRSA Sur highway has meant a lot of changes for daily routines. For example, the road has created greater opportunities for local businesses in that the road generates more travelers passing through the region. Prior to the completion of the highway, roads in the region were made chiefly of dirt tracks and trails that were often not passable due to heavy rains and infrequent maintenance; thus visitors to local businesses tended to be locals or occasional ecotourists. Goods were mostly transported by boat, as the Rio Madre de Dios runs along the most populous towns in the province, including through the capital of Puerto Maldonado. With the road complete, however, goods can now travel by road, and vehicle passersby are much more frequent. This has led to a shift in livelihood strategies as well as vastly increasing the migrants who have come to the region looking for work.

1.a Livelihood changes:

Here I define livelihood as a means of supporting one's existence, principally through financial and/or vocational means. In this way, the unit of analysis for livelihood strategies is a single household, and local economies are made up of a community of households practicing livelihood strategies in adjacent physical spaces. Moreover, rural livelihoods can shift over time as wage labor opportunities wax and wane and as infrastructure projects change the physical landscape of people's communities. For example, during road construction, opportunities for wage labor were different and more abundant for construction contractors who needed local labor than they were after the road was complete. In Madre de Dios, many residents practice some form of subsistence agriculture to varying degrees, often in conjunction with wage labor or local business ventures. Some have a small garden, used to provide fresh vegetables, which supplement imported ingredients bought locally. Some raise livestock. Some have larger plots of land for crops that they sell to other neighbors and beyond. Since this is such an important

livelihood strategy in this region, concerns have risen that a shift from small-scale agriculture to commercial agriculture might become an imminent threat to local landowners who need access to land to grow their subsistence plots. Certainly in rural Peru the threat of land dispossession is not an empty one, as many indigenous people and poor farmers have learned, and scholar David Szablowski outlines in the case of the “land acquisition project”, enacted by mining company Compania Minera Antamina in the highlands of Peru (Szablowski 2002). Furthermore, with the upsurge in global demand for products such as palm oil in the past 15 years for both biofuel applications as well as for use in snack foods, the possible influx of large plantations that would deplete the soil and push out small-scale producers was a concern. Indeed, the government of Peru has proven to be ill-equipped, or at least ill-motivated, to prevent illegal plantation activity within Peruvian borders. For example, in 2013, non-profit environmental news firm Mongabay found a 1000-hectare palm oil plantation through satellite imagery that had not been authorized by the Peruvian Regional Program Director of Forest Management and Wildlife in that region of the country (Butler 2013). Peru, therefore, has exhibited inadequate capacity to protect rural areas from illegal activities. Thus far, despite concerns, dispossession of small-scale farms in favor of large-scale cash crop plantations has not occurred in Madre de Dios as a result of the IIRSA Sur highway project. As John Forrest, chairman of the Tambopata Reserve Society, notes in Madre de Dios since completion of the highway, “Farming along the roadside is still modest, with families clearing the forest and planting crops such as yuca [manioc/cassava]. The chacras or cleared patches are clearly visible on satellite images” (Morrison and Forrest 2013). The reasons for this might be that while transportation of agricultural goods is much easier on the paved road than on the dirt tracks and trails that preceded the highway, transportation of cash crops might still be too expensive and too far from the coast to make production cost-effective for investors at this time (ibid). Palm oil can only be grown

in tropical areas, however. Therefore, as the global price of the commodity rises and innovations in technology make shipping and trucking less expensive, this sense of security could change quickly for Madre de Dios residents. Scholars certainly seem to be in agreement that IIRSA's initiative to expand roads into the Amazon "will further propel the agricultural frontier into forested areas" (Pieck 2011; see also Killeen 2007 and Nepstad, Stickler, and Almeida 2006).

One of the largest day-to-day changes faced by Madre de Dios residents as a direct consequence of the completion of the highway is the rise in price of everyday commodities such as food, fuel and rent. As migrant construction workers have moved into the region during construction, demand for necessities has risen, and as a consequence, so has the price of such commodities. As one resident told investigative reporter Lourdes Garcia-Navarro during construction in 2009, "The price of everything has gone up. It's because there are lots of new men living nearby and working on the road. I am very worried" (Garcia-Navarro 2009a). It seems likely that most of the wage labor opportunities that have been created from this project are primarily for men, first with construction of the road itself, and afterward in mines and with logging companies. Thus, it might be that women are disproportionately suffering the effects of rising prices in these communities, though further research would have to be conducted to confirm this suspicion. Ecotourism has been a profitable industry in this region for some time, and has increased with the accessibility the road has created. The trek to the community used to take days for ecotourists by hiking and boat; now visitors can arrive in just a few hours by car or bus from Cusco. Once again, however, the increase in tourism has increased the cost of living in these communities (Morrison and Forrest 2013).

1.b Migration and influx of laborers

One of the most cited concerns for residents, journalists and scholars who have documented the construction of the highway through Madre de Dios is the large influx of labor migrants that is increasing the population of small communities faster than social structures can absorb them (See for example Guerra 2013, Morrison and Forrest 2013, Perz et al. 2010, Swenson et al. 2011, Oliveira et al. 2007). Most of these migrants come from the Andes and Peruvian highlands in search of wage labor in the mining or logging industries. In 2012 Forrest affirmed, “Puerto Maldonado is growing, though exact population figures are not available – the 2005 census counted 92,000 and by some estimates that has doubled” (Morrison and Forrest 2013). He continued, “Now there are at least two bus services per day and direct buses from Lima and Sao Paulo. Inevitably, migrants are heading to Puerto Maldonado and towns along the road where they settle and work. One estimate says that there are 200 new arrivals per day” (ibid).

In many cases these new arrivals are attracted to the region by unexploited natural resources, especially gold. In addition to being a biodiversity hotspot, the eastern Amazon region of Madre de Dios is rich in natural resources. The completion of the Southern Interoceanic Highway has opened up these areas to extraction of minerals, whereas before the highway existed, the mineral concessions were too remote to access. Getting mining equipment in and out of the region as well as transportation of the product out of the region was extremely difficult. The fervor to mine these minerals as quickly as possible was further catalyzed by the spike in global gold prices around 2009, towards the end of road construction in this region. This spike led to an immediate increase in mining activity that was not officially concessioned or sanctioned by the Peruvian government. This process was outlined in detail by Duke University scholar Jennifer Swenson and her team of researchers who found that because of the unregulated nature of the gold mining occurring in Madre de Dios from 2006 to 2009, new miner education and environmental impact analyses were absent, and as a result,

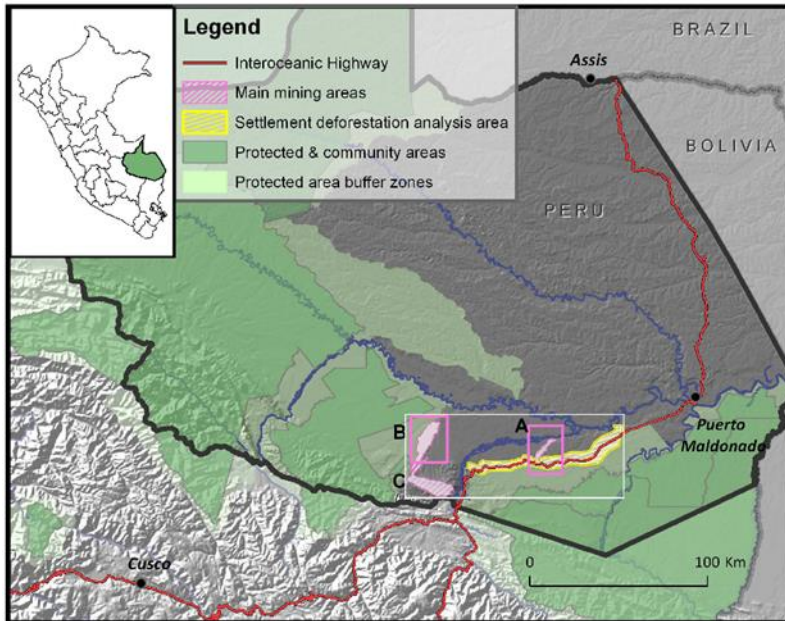


Figure 2-Map shows gold mining concessions along the Interoceanic Highway which most likely would not have been accessible before the completion of the highway (Map borrowed from Swenson et al. 2011)

large amounts of mercury (used in the mining process) were released into the atmosphere, soils, and waterways (Swenson et al. 2011). Therefore, the record number of migrants moving into the Madre de Dios region and capitalizing on the new possibility of making money in mining has contributed to mercury pollutions in the air and

waterways. Often in this newly available marketplace these migrants operate illegally without paying taxes or holding permits or formal title to their claims. Furthermore, they commonly operate their small-scale gold mining operations, referred to in the literature as “artisanal gold mining” and are “typically the poorest and most marginalized in society, and therefore are difficult to target and regulate with education and incentives” (ibid).

Due to the lack of regulation, this mining tends to be more environmentally destructive, as toxic chemicals such as mercury get released into the environment at many times a higher rate than is legally acceptable. However, as is the case with the illegal palm oil plantation discovered by Mongabay, the Peruvian government lacks the capacity or the will to suppress these illegal activities. Scholar and expert on the case of the Southern Interoceanic Highway, Sonja Pieck corroborates these sentiments by explaining that “Road building into putatively ‘empty lands’ encourages in-migration and colonization, which in turn often produce illegal activities like gold mining, logging, sex

trafficking or the drug trade” (Pieck 2013b). Not all migrants seek work in mining and logging, however. Some come to farm the land or to participate in forest agriculture such as Brazil nut production. Yet, in recent times Brazil nut production in Madre de Dios has declined in profitability (Morrison and Forrest 2013), which has the effect of pushing migrants into more profitable businesses such as mining or logging, even if this was not their original intention.

As stated above, the Peruvian government and IIRSA representatives in charge of this project have done little to mitigate the negative impacts of road construction. That is not to say that the Peruvian government has given no thought to the likelihood of negative repercussions in the communities along the route of the new highway throughout the process of construction; however, the mitigation program put in place was wholly inadequate and poorly planned. The (now defunct) Peruvian government agency INRENA in collaboration with CAF developed an impact mitigation program called the Programa de Mitigación de Impactos Indirectos del Corredor Vial Interoceánica Sur. In theory, this program should have been a means for people to voice concerns to better address the problems discussed in this paper, namely the unprecedented migration to Puerto Maldonado and the environmental concerns resulting from an increase in mining and logging. However, contrary to that vision, this program was underfunded and not well planned from its inception, which did little to lessen the anticipated socio-environmental concerns in Madre de Dios. As Sonja Pieck notes, “With a troublesome beginning, an unsatisfactory migration programme and already visible environmental and socio-economic impacts” (Pieck 2013a), the program was more of an insincere token agreement to represent what both IIRSA and the government of Peru knew was needed, but the political will was not there to see the program enacted with any potency.

This spurious and ineffective program has galvanized civil society groups to begin the work of filling in gaps for mitigation planning regarding in-migration and environmental destruction that has not been addressed by this ineffective government response. Furthermore, underfunding and poor institutionalization has effectively exposed the program as a symbolic gesture rather than an actual vehicle for positive change in Madre de Dios communities. For example, the communication between INRENA and civil society was poor, and the initiative was not given institutional authority to make any actual changes, even if pressing issues that needed obvious mitigation did surface during program analysis (Fernández and La Rosa 2010). Tellingly, an analysis of this program offered by DAR (Derecho Ambiente y recursos naturales), a civil non-profit organization based in Lima, found the program to be “inconsistent and inadequate compared to the magnitude of the socio-environmental (negative) impacts anticipated to be brought on by [IIRSA SUR], such as migration, deforestation, invasion of protected natural areas, chemical pollution of rivers through the growth of gold mining and disorderly growth urban centers, which were underestimated” (Fernández and La Rosa 2010 translation my own).

Therefore, the planning for mitigation of any issues was too inadequate, too underfunded, and too disorganized to make any meaningful positive difference in the planning for issues related to roadbuilding. This is important because while roads do offer benefits such as increased access to education, healthcare, and business opportunities among other things, it was widely foreseen that this highway would also have negative repercussions for the previously isolated communities of Madre de Dios which would require outside resources to address. The citizens of communities in this province themselves had questions and concerns about the new highway what were never addressed, nor were they able to take part in the feedback process regarding which concerns the CAF/INRENA program should tackle first. Furthermore, this inadequate

program was the only of its kind, and there was no follow-up program devoted to correcting citizen concerns.

In light of these obvious shortcomings on the part of the Peruvian government and the IIRSA planning committee to address or adequately acknowledge issues related to IIRSA Sur through Madre de Dios, the following section will discuss how this overall lack of mitigation planning for social issues such as the influx of migrants to the region is further leading to environmental degradation, which in turn causes even more severe social tensions, such as loss of livelihood due to pollution and increased health concerns.

Part 2: Overall lack of planning for these issues leads to further environmental degradation risk

Generally among residents along the highway's route, IIRSA Sur has been a long sought-after and valued project. Even for those with concerns the benefits are easy to acknowledge: better access to education, services, and local and international markets, for example. However, despite the obvious benefits for local communities, there has still been substantial backlash against the project from local residents, NGOs and scholars. The main reason for this is the lack of transparency on the part of the Peruvian government and lack of opportunities for participation of locals who have had concerns about the project during every stage of construction. During the planning phase, locals were given no mechanism to voice their concerns or suggestions. During construction, some community members did not even know about the project "until the day the bulldozers pull[ed] up" (Pieck 2013a). After road construction, no plans or programs were enacted to mitigate the migration and environmental problems resulting from the newly completed project.

In 2012 the Peruvian government under the leadership of President Ollanta Humala began taking steps to crack down on illegal gold mining in Madre de Dios.

However, it seems this attempt at regulation might be too little too late, as many thousands have already relocated to Madre de Dios, and the government does not have the capacity to shut down all of these operations. Those that received sanctions were further marginalized, being mostly poor highlanders. It seems it would have been better to have a plan in place to prevent this from occurring rather than the current attempts to solve this large and complicated issue that spans social, environmental, and economic spheres.

In this way it can be said that the lack of participation and adequate planning mechanisms have exasperated the issues communities face due to the completion of the highway, and has by extension resulted in heightened environmental degradation due to a lack of planning regarding how to deal with migration, livelihood changes, and lack of enforcement of laws, all of which have led to illegal deforestation and gold mining in protected areas. In addition to pollution and ecological damage due to increased gold mining activities in the region, deforestation due to forest clearing for informal mining camps, new agricultural plots for migrants, logging, and other purposes has increased dramatically over the course of road construction. The following section explores deforestation and its relationship with protected areas in Madre de Dios.

2.a Deforestation and protected areas: What are they actually protecting?

Being situated in the eastern Amazon, Madre de Dios is comprised mostly of dense tropical rainforest. This region in particular is often hailed as being one of the most biodiverse regions in the world (Swenson et al. 2011, Garcia-Navarro 2009b, Vuohelainen et al. 2012). Therefore, when the IIRSA Sur construction project was announced, many scholars and scientists concerned with biodiversity began speculating about the potential for deforestation along the road to threaten sensitive animal species and habitats. There are two large protected areas abutting the Interoceanic Highway to the south through

Madre de Dios, Bahuaja-Sonene National Park and Tambopata National Reserve. However, despite the designation as “protected”, these areas have failed to stop deforestation and environmental degradation stemming from the highway. For example, borders of these parks and reserves have been shown to be flexible if the area becomes valuable for national interest development. Notably, in 2007 the Bahuaja-Sonene National Park was reduced by a third to permit future gas and oil exploration (Morrison and Forrest 2013). Even when protected areas are not “downgraded” in designation to allow for these activities to occur, illegal logging and resource extraction occur within their borders at a high frequency. In the fall of 2015, colleague Benjamin Tweed and I completed a GIS analysis on Madre de Dios in order to understand how deforestation has affected this region in regard to total deforestation within a certain distance from the road as well as deforestation in these two protected reserves. Keeping in mind that “the construction of a road into ostensibly ‘empty’ lands encourages the in-migration of colonizers from other parts of the country, who try to make a living either by eking out an existence on the agricultural frontier, or by engaging in a host of illegal activities such as mining, [or] logging...Many of these activities are likely to happen in national parks and other protected areas” (Pieck 2013a), the following section discusses our project confirming the suspicions that protected areas do not halt the progress of illegal activities that cause deforestation.

2.b GIS data shows deforestation along the route of IIRSA SUR in Madre de Dios and in Bahuaja-Sonene National Park and Tambopata National Reserve:

In the fall of 2015, Benjamin Tweed and I set out to answer the following question: To what degree has IIRSA Sur through Madre de Dios increased deforestation? We did this by making use of publically available deforestation data from the years 2001 to 2014. We looked at deforestation from construction of the road differed from deforestation

that occurred along the route of the highway since its completion in 2011, which would thus be due to factors other than road construction, and how both of these time periods of deforestation differed from that which occurred prior to road construction. Therefore, the data was grouped into three time periods representing three phases of road construction: pre-construction (2001-2005), during construction (2006-2010) and post-construction (2011-2014). Using this data, we measured deforestation that has occurred as a result of the Southern Interoceanic Highway, completed through Madre de Dios, Peru in 2011.

Our data showed a strong visual correlation between deforestation over time and proximity to the Interoceanic Highway; thus, we were convinced based on visual interpretation alone that our hypothesis of increased deforestation over time would be correct. However, we were less certain the data would show that deforestation continued to accelerate after the road construction was complete in 2011. We predicted that the first phase from 2001 to 2005 before the road construction began would have the least amount of deforestation, and the subsequent two time periods would have more or less equal deforestation. We also considered the possibility that the data would show more deforestation during road construction from 2006-2010 than after completion due to the data encompassing five full years instead of only four and also the notion that trees would have to be cleared to make way for the new route of the road and all of the construction vehicles during development. However, several of our background sources, notably César Delgado who published back in 2008 about deforestation in this region as a result of the highway, claim that most deforestation which occurs as an effect of roadbuilding happens not due to construction itself, but rather due to the influx of migrants who clear land, and extractive industries such as mining and logging that are introduced to the region in conjunction with increased accessibility after roads are completed (Delgado 2008). Delgado's claim is consistent with our findings, as the

deforestation that occurred after road building was complete in 2011 was much greater for this time period than during construction. In fact, from 2006 to 2010 deforestation within 15 km of the road amounted to about 381 km². However, in the later time period after road construction was complete, 505 km² of deforestation occurred within the same distance to the road. This represents a 33% increase in deforestation from the mid-road construction to post-road construction time periods. These figures help give a picture of the long-term and diffuse effects of road building in heavily forested areas such as the Amazon, and gives credence to Jane Southworth's warnings about this highway having "massive potential forest loss as a result of" construction of this highway through Madre de Dios (Southworth et al. 2011).

Our calculation of “normal” deforestation outside the influence of the road also helped us to understand the true impacts of deforestation as a result of the road, giving us an idea of what amount of deforestation could be considered “high” in immediate

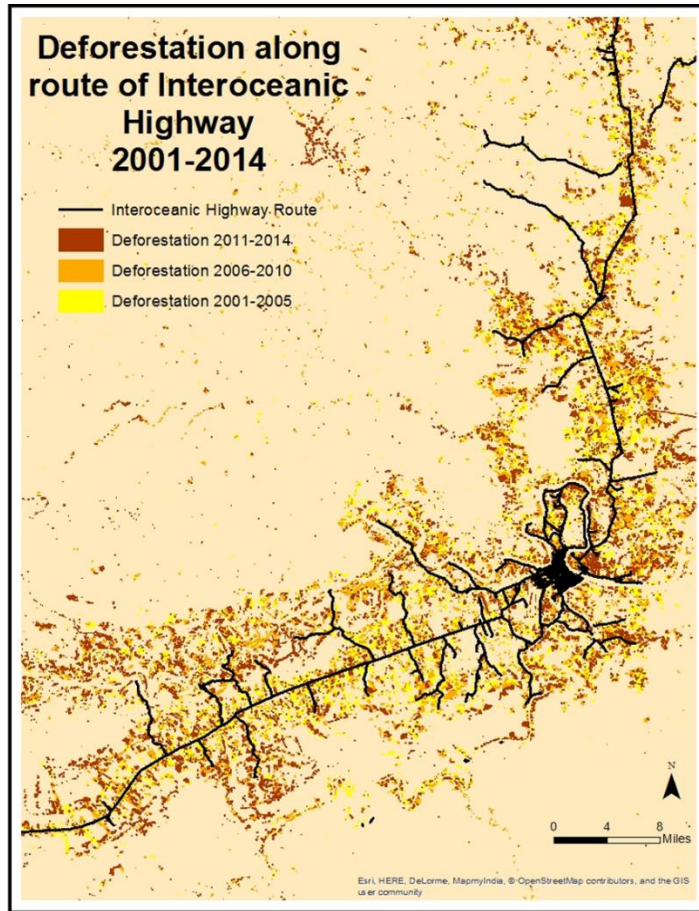


Figure 3- Shows deforestation occurring from 2001-2014 in the area around Puerto Maldonado, the capital of Madre de Dios

proximity to the road. In this region where livelihoods of locals are heavily dependent on forest resources, a certain amount of deforestation is expected and is not necessarily an environmental concern. However, when this “normal” level of deforestation increases dramatically in close proximity to the Interoceanic Highway, environmental concerns about unsustainable deforestation are warranted. We were able to see that most of the deforestation due to the road occurs in this case within a proximity of about 15 km to the road. This estimate is consistent

with other estimates of road influence. For example, Jane Southworth makes a similar estimation of the distance of deforestation influence, though she attributes a slightly larger area of deforestation to road building. She writes, “In Madre de Dios the strong influence of deforestation occurs within 18 km of the roads and beyond this distance the rate and amount of clearings drops off significantly” (ibid).

Finally, we felt it was important to calculate the amount of deforestation occurring in protected areas abutting the highway. Conceivably, a certain amount of deforestation would also be normal in protected areas when trees fall naturally, and animals and park rangers alike fell trees for legitimate reasons that are unconnected with road building or deforestation due to development. However, our results indicate that deforestation has accelerated in protected areas as well as non-protected areas, with

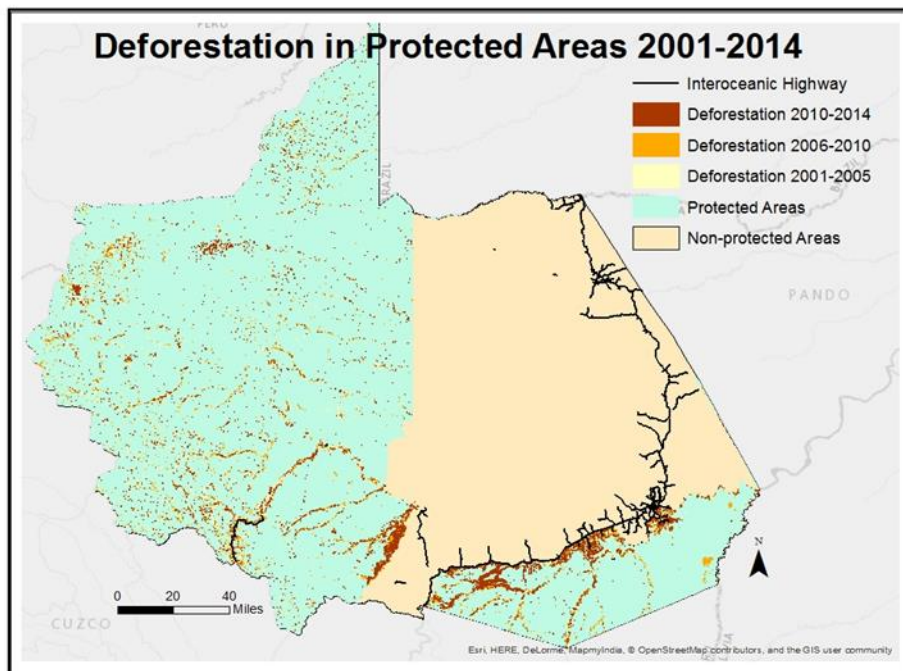


Figure 4- Depicts deforestation occurring in protected areas in Madre de Dios from 2001 to 2014

deforestation increasing by 60% from 115.8 km² to 174.7 km² from pre-construction to mid-construction periods in protected areas, and further increasing post-construction to 198.9 km², which represents a further 14% increase.

These findings are particularly significant in light of Paulo Oliveira’s work, which concludes that in the Peruvian Amazon between 1999 and 2005, little deforestation occurred in protected areas; however, it was the remoteness of the area rather than the designation as a “protected” area that kept deforestation levels low (Oliveira et al. 2007). Of course, since introduction of the highway in this region reduced the remoteness of the region due to vehicle accessibility, the outlook does not bode well for reducing deforestation levels

in the coming years in protected areas in Madre de Dios along the Interoceanic Highway. This deforestation affects the livelihoods of people who use the forests, the ability to enjoy these national parks and reserves, and perhaps even how people conceive their place in the environment, especially since as much as half the people now living along the route of the highway are recent migrants.

Though deforestation is not the greatest of environmental concerns to come from this project, it is a good proxy to understand how the road affects the land around it. In this way, we must look beyond the immediate infrastructure and understand the space beyond where the asphalt begins and ends to understand the impact of the road. Also, we must understand these impacts in conjunction with the social circumstances (migration, etc.) that cause and perpetuate these issues. Additionally, it's noteworthy that biodiversity is a worthwhile thing to preserve in and of itself, but just as importantly, environmental effects of gold mining and deforestation impact the people who live in this region in a very real way. Gold mining uses mercury which pollutes the rivers. Deforestation cuts down trees and depletes fragile soil ecosystems.

Development and discourse: From exclusion to environmental governance

The IIRSA initiative that led to the construction of the Southern Interoceanic Highway is representative of a particular point of view on how to develop Latin America to make it more competitive, integrated, and prosperous. The process of constructing this highway relates to the development process in Latin America by shedding light on how development is playing out in the context of large infrastructure projects which are increasing throughout the region and are likely to keep doing so in the future, for example, the growing trend in connecting very rural spaces and extracting

resources from these regions. In fact, the three explicitly stated goals, as defined by IIRSA's technical coordination committee, are:

1. Support the integration of markets to improve intra-regional trade.
2. Promote new chains of production to become competitive in major global markets.
3. Reduce the "South American cost" by creating a solid logistical platform that is well-inserted into the global economy (Zibechi 2006).

To reach these goals, IIRSA proposes substantial expansion of South American transportation, energy and telecommunication networks through the implementation of over 500 discrete infrastructure projects (Pieck 2011). For South America this emphasis on infrastructure and integration represents a brand new discourse on development. Indeed, due to the size and scale of the IIRSA initiatives, it can be said that IIRSA represents a whole new approach to development that combines elements of non-traditional financing, circumventing the authority of democratic institutions, and a discourse that taps into Latin American ideals of "brick and mortar" development rather than merely an initiative within existing development discourse. However, in implementing the Southern Interoceanic Highway, which is the crowning achievement of the IIRSA initiative thus far, and in collusion with the Peruvian government without providing spaces for inclusion and participation from local peoples, the discourse on how these projects will lead to a better future is limited. Furthermore, many of the participating implementing agencies for these projects have experienced enough civil society backlash to engage in positive marketing around the project outcomes. For example, the main contractor for the Southern Interoceanic Highway project, Odebrecht, released a series of YouTube videos beginning in 2013 depicting locals along the route of the highway celebrating construction of the highway (See for example Stori 2013). Much

about how the highway is improving their lives and family businesses is discussed in this series of videos. It is noteworthy that while alpaca farmers, family ecotourism providers, and cacao farmers are all depicted in this film, not a single miner or logger is interviewed or even alluded to in this video. These videos, along with other published materials produced by Odebrecht, create a discourse that hides the realities of the lack of participation and acknowledgement of environmental issues by purposefully leaving out the negative concerns and impacts, and focusing on the positives. In this way, the company is able to cherry-pick its success story without acknowledging its need for improvement in designing and implementing this and future projects.

The Amazon has long been a space that has fostered competing land-use visions. Large expanses of land have attracted cattle farming, plentiful resources have garnered the attention of extractive industries, local tradition and international demand have expanded the agricultural sector, and biodiversity scientists and ecotourists often prefer to see the landscape untouched by human hands. All of these visions are necessarily unable to exist simultaneously. In this new era of infrastructure development and integration under IIRSA, visions for land use in the Amazon come to the forefront once again. Stakeholders grapple with who has legitimate control over the space and how can infrastructure projects be implemented in the future to avoid the kinds of problems experienced by communities in Madre de Dios as a result of IIRSA Sur. One often-cited possibility is the creation of an “environmental governance” mindset that will increase involvement among underrepresented stakeholders, while ensuring that environmental concerns remain in the forefront of all planning efforts. Spurred on especially by the lack of transparency and participation, local and international non-profits concerned with how the infrastructure project has played out have begun trying to fill in the gaps left by the construction project to better equip communities in Madre de Dios to deal with the negative repercussions of the highway project so that locals can enjoy the benefits of

being connected to the rest of the country (and thus the world) without experiencing such negative consequences along with the positives, especially when these negatives could be greatly minimized with better planning and implementation.

The lack of transparency in every stage of the planning and implementation process in the construction of the highway is apparent. For example, both regional and national actors have had very little opportunity to access information about how the highway project was initiated and how it was financed, and in some cases had no idea even when the construction of the project would begin. As noted in an earlier section of this paper, Sonja Pieck spoke with a local resident who did not know about the project “until the day the bulldozers pull[ed] up” (Pieck 2013a). Indeed, the information-sharing on the part of IIRSA’s implementation team is so poor that IIRSA’s website is the main method used to provide information about its projects, including IIRSA Sur (Pieck 2011). Of course, not everyone in Madre de Dios or other regions has access to the internet, and even those who do, do not have a way of soliciting feedback or asking direct questions through the website. This is a problem because Peru is a democratic country, and the citizens of Madre de Dios, as in all other regions of the country, should in theory have the ability to influence the projects that are occurring with their own public funds supplied by their tax dollars. The IIRSA Sur project was financed through a loan, which means that eventually the Peruvian government will have to pay the money back to CAF and IIRSA, ostensibly from tax revenue. Therefore, in a democratic system, and due to the fact that civil society has a very real stake in the project regarding their money likely contributing to payment of the project in the long term, the complete lack of information provided to citizens is an injustice. In order for an effective, fair, democratic process to occur for projects such as these, properly disseminated information is exceedingly important because being a citizen “implies a certain bundle of rights” (Pieck 2013a). Without knowledge of these rights, or knowing how these rights are being violated, the democracy

ceases to function effectively. Other scholars, too, have cited the need for the development of systems of greater transparency among stakeholders for infrastructure projects such as this one (Perz et al. 2008).

Civil society responds

As discussed above, the opportunities to participate and provide concerns and feedback about the project trajectory and local concerns were nearly nonexistent during construction and have not improved since the highway officially opened in 2011. For example, in November of 2008 an alliance of twenty local grassroots activist organizations and international NGOs, galvanized by the lack of participation and transparency they were witnessing in the case of the IIRSA Sur project, requested a meeting with IIRSA leadership to discuss how to increase participation and transparency for civil society actors so that together they could work toward creating a process where citizens with a right to a seat at the table could participate in current and future IIRSA initiatives. The request was denied by IIRSA (Pieck 2011). Though their request was denied, these activist groups have not given up their appeal for a more democratic process for future IIRSA projects. They have begun engaging citizens in rhetoric of increased citizenship by urging them to demand their right to information and participation. This process toward a more active participation is characterized as environmental citizenship by Sonja Pieck, who asserts that “properly disseminated information can transform the neoliberal citizen from a generally passive market-oriented subject into an environmental citizen” (Pieck 2013a). That is to say, a feature of environmental citizenship is the ability of civil society actors to be active in advocating for themselves, and would be equipped to do so through access to pertinent information. Environmental citizenship “encompasses the ability of people around the world to inhabit a shared imaginary community where global issues . . . are,

first of all, visible in their interconnectedness, and secondly, in part as a consequence of this experience of sharedness, amenable to common regulation” (Luque 2005 quoted in Pieck 2013a). Therefore, this process of environmental citizenship would begin to correct the inequitable distribution of benefits that come from development in Peru in favor of a more just allocation of development rewards.

One such initiative to increase civil society input was the creation of participatory workshops with 18 municipalities along the Interoceanic Highway in order to gather qualitative data about how different communities experienced this road-building project, what types of concerns the communities had about the new highway, and how these experiences differed in each of the three different countries along the highway’s route (Mendoza et al. 2007). They were conducted in Madre de Dios (Peru), Acre (Brazil), and Pando (Bolivia), all of which experienced road construction of IIRSA Sur during a similar time period, with the section through Madre de Dios being the last to be completed in 2011. Approximately 500 people took part in the stakeholder workshops, 25 to 30 of whom were from each of the 18 municipalities sampled. The participants are described as “key social actors” within their respective communities such as municipal government representatives, local NGO representatives, and community leaders of churches, youth groups, women’s groups, commercial organizations, and worker’s unions. Participants’ main concerns were split up into five themes: infrastructure, social, environmental, economic, and political (ibid). The conclusions drawn after the workshops were completed suggested that participants had perceptive insight into the issues facing their communities regarding the construction of the road, which involved both common problems and some important differences due to varied local circumstances. The workshops also demonstrated that it was possible, “and relatively straightforward, to involve a large number of people in the diagnosis of problems that have or likely are to arise from infrastructure upgrades, providing crucial information for defining local

planning priorities” (ibid). This shows that not only is it possible to get people involved in the planning process for the mitigation of issues related to road construction and other infrastructure development projects, but also that they are effective communicators in this capacity. It seems that this kind of participation is truly the kind of vision Pieck believes to be possible on a larger scale in enabling environmental governance for development.

Conclusion: Moving beyond Exclusion

“Can this kind of NGO activism facilitate a movement beyond asphalt development, to a new politics in Peru?” (Pieck 2013a)

Madre de Dios represents the “perfect storm” of circumstances leading to social tensions and environmental degradation in that road construction began when global gold prices were at peak levels for a sustained amount of time, and the government capacity to effectively protect conservation areas in the region was limited. The lack of mitigation planning for settlers to the region and the exclusion of civil society during the road construction planning certainly contributed to the tensions and environmental damage as well, due to the increase in mining and logging in Madre de Dios after road construction began. Furthermore, the IIRSA Sur project had inadequate safeguards in place for socio-environmental monitoring. In this way, road construction has come at the expense of social and environmental problems in the form of increased migration leading to illegal and harmful gold mining and deforestation as is evidenced by the GIS deforestation data presented in this paper. This paper has also shown that perhaps many of these issues could have been avoided had the construction process included involvement of and transparency for local dwellers and local governments. The CAF/INRENA program instituted by the Peruvian government and the IIRSA leadership for

this project was meant to address many of the issues seen in Madre de Dios with the construction of the road; however, it was an underfunded disarray that accomplished little. Furthermore, opportunities for participation and a means for residents to have their voices heard and questions answered were not available, and as a result, citizens were entirely left out of the process. The lack of space for community involvement in road construction planning and the lack of transparency of IIRSA funding and leadership structures illustrates a profound tendency toward exclusion of civil society which has contributed to social tensions and by extension environmental degradation through the increase of illegal mining and logging, including in protected areas.

This constitutes a dangerous precedent for development in Peru and throughout South America, as IIRSA has many other proposed infrastructure projects aimed at regional integration. The discourse IIRSA presents to the public regarding their projects advertises greater prosperity in rural regions and greater sustainable development, however, the lack of participation and concern for local social and environmental concerns in the case of IIRSA Sur suggest that this rhetoric is made up largely of hollow words. As Sonja Pieck asserts, “while paying lip service to ‘sustainable development’ [official IIRSA documents] clearly subordinate it to economic growth, defining sustainability in terms of maintaining the conditions for expanding capitalism” (Pieck 2013a). In this way, IIRSA road expansion into Madre de Dios without adequate planning for mitigation of issues in the name of “progress” and “sustainable development” is an avoidance of commitment and responsibility to the citizens living in these areas. The participatory stakeholder workshops discussed above suggest that citizens want to be involved in the planning and implementation of these projects. Furthermore, as citizens of a democracy that will ultimately use their tax dollars to pay back construction loans, the civil society of Madre de Dios certainly should have had the opportunity to participate in the road construction process. Since the Madre de Dios region is also an important

area for biodiversity, concerns over the effectiveness of protected areas preserving forest cover and thus habitat integrity cannot continue to go overlooked, or these intrinsically valuable landscapes could be forever altered or destroyed. The need for an environmental citizenship model as outlined by Sonja Pieck is therefore evident in order to ensure the government is doing its part to establish that initiatives such as IIRSA are working to effectively manage both the social and environmental concerns which have emerged from the construction of IIRSA Sur. Furthermore, civil society should have a way to access timely, comprehensive information in order to assess whether or not mitigation and implementation are occurring in a satisfactory manner, thus holding both government and project leadership accountable for their actions. In this way, the future of development in Peru and throughout the South American region can be anchored in a more just distribution of costs and benefits of development in order improve livelihoods and ensure true sustainable development in word and deed.

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