

Global Capital, Local Concessions:

A Data-Driven Examination of Land Tenure Risk and Industrial Concessions in Emerging Market Economies

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Using geospatial data from 12 emerging market economies (EMEs), this analysis attempts to guide investors in emerging markets by shedding light on a difficult problem: overlapping land claims that diminish the value and viability of industrial concessions. We refer to this as “land tenure risk”.

From these datasets and an examination of research and financial information, we conclude that land tenure risk is a statistically significant source of risk in EME concession investments. This risk extends across all land-dependent sectors, regardless of concession type and, to the extent they are even used, normal proxies for judging this risk are not likely to help. Furthermore, it is difficult to make a case for insurability against this risk.

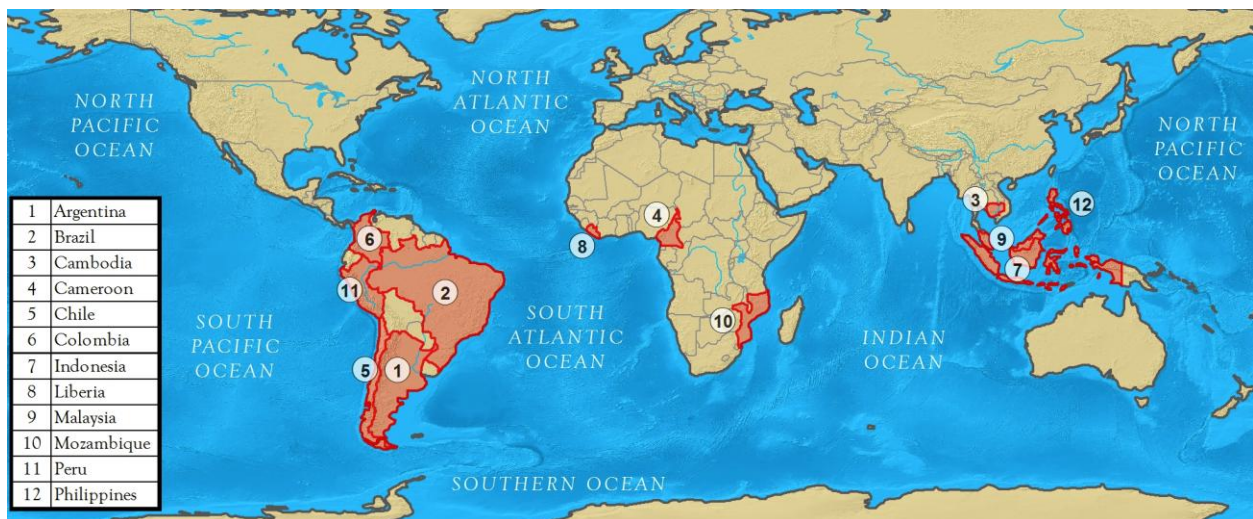
Consequently, a different approach for addressing the risk needs to be developed. The analysis concludes with specific thoughts on this topic, emphasizing the importance of field-level data collection and contextualization within macro-level assessments, all of which can be done economically and in a way that matches standard due diligence procedures.

Foreword

This is a paper about a specific threat to investment performance – land tenure risk – which imperils investments in mining, energy, agriculture and forestry projects across emerging market economies (EMEs).

It is our second examination of this problem. The first, *The Financial Risks of Insecure Land Tenure: An Investment View*, demonstrated that companies and their investors can face substantial risks when they overlook or underestimate the land tenure contestation in rural areas.

We found that companies ignoring pre-existing or customary local land rights in their acquisition process experienced financial damage ranging from operating costs increased by as much as 29 times to outright abandonment of operations.



This report uses a far more data-driven approach, examining geospatial data from concessions in 12 different EMEs (shown above) to determine how widespread land tenure risk might be. We also examine current approaches to evaluating and mitigating this risk, and arrive at the following five conclusions:

- Land tenure risk is a statistically significant source of risk in EME concession investments.
- This risk extends across all land-dependent sectors, regardless of concession type.
- To the extent they are even used, normal proxies for judging this risk are not likely to help.
- Due to a lack of data, it is difficult to make a case for insurability against this risk.
- Consequently, a different approach for addressing the risk needs to be developed.

Within the geospatial datasets we reviewed, industrial concessions on public lands representing 31% of the total hectares sampled had some overlap with a demarcated local territory (48.4 million

hectares of the roughly 153.5 million hectares examined). This implies that there is a three in ten chance that a given EME concession incurs tenure risk, and from an investment perspective, this level of prevalence is already enough to make the matter interesting.

But that number tells only part of the story, insofar as it is dependent upon governments' willingness to engage in the demarcation process.¹ In countries where there has been a more assiduous effort on the part of responsible officials to determine local land rights, concession overlap with a demarcated local territory is significantly higher: 95% in Peru, 83% in Cameroon, etc.

These numbers suggest that what we can learn about tenure risk through publicly available GIS data is but the tip of the proverbial iceberg. And such a conclusion would be supported by logic; after all, there has been little political or economic incentive for governments to map local populations' land and resource claims, whereas the incentive to map concessions is obvious.

All of this says that the available data is very likely to skew away, not towards, the discovery of overlapping claims. We expect the full dimensions of land tenure risk to become appreciably larger as these datasets are improved, and this matters more in EMEs, since the investment environment in those countries has shifted.

For the past five years, the investment case for concessions or concession-based businesses in EMEs has been simple: borrow capital at rock-bottom rates to put in place projects that service booming demand from countries where they can also service debt at high interest rates. Risk has not been much of a concern; the policy has often been to shoot first and ask questions later.

This is no longer true. The Federal Reserve has been making noise about ending the quantitative easing policies which supply so much of the cheap capital that has flowed into EMEs. July and August 2013 have seen many EME currencies decline dramatically against the dollar and euro, suggesting that investors have comprehended this situation. Additionally, commodities demand appears to be declining across the board.²

¹ Again, we stress that there are limitations in the data we could consider, and that our selection of these particular EMEs was primarily dictated by data constraints. We first sought out EMEs with reliable, and publicly available, datasets regarding their concessions. Secondly, we required EMEs that had actually undertaken some demarcation of customary land areas. These include community forests, indigenous territories and the like. Thirdly, given that existing GIS databases were not enough to provide sufficient sample size, we utilized geo-referenced maps, an exercise whose country-by-country sources and details are described in Appendix One. Needless to say, only a subset of all industrial concessions in the EMEs met the three criteria.

² Parenthetically, our view is that this is not about real demand: much of the increase in demand for commodities was created by its value as collateral for financial transactions. Accordingly, investors may face increased risks from regulatory controls on financial institutions' use of commodities as collateral. Recent signals from Beijing and Washington suggest that these are being actively considered, especially as commodities users have complained about the price impacts of banks' participation in these markets. We encourage interested readers to explore the reporting of the Financial Times' Alphaville team on this topic, as well as the theoretical work of International Monetary Fund economist Manmohan Singh.

At the same time, the fundamental investment case for commodities produced in EMEs is still there. The increase in populations plus rising standards of living in developing nations suggest that demand will grow. EMEs still have a huge amount of attractive territory to offer when compared to places like the United States or Western Europe. And they also have the added advantage of lower labor costs (made lower still in places like Indonesia and India, whose currencies have grown quite a bit weaker in recent months).

We also feel that the existence of overlapping claims is not a reason to avoid EME concessions; it is a reason to seek more data about them. Although this is not something one can demonstrate in a strictly quantitative fashion, we have reviewed literally hundreds of qualitative reports on land tenure conflict and we do feel safe saying that the vast majority of conflicts we reviewed were perfectly avoidable.

In fact, the information advantage offered by understanding land tenure risk may well provide a competitive edge in selecting EME investment targets. The key for investors is to ask questions and develop risk management processes.

One important issue to understand is how the concession's operational, resource and territorial needs compare to those of the people living nearby (and often within) the concession's boundaries. This can be done in a way which coheres with standard diligence timelines and incurs only marginal costs, and we offer some specific thoughts on how to do this in Section Four.

We should also note that several other pieces of work attempt to quantify the impacts of land tenure conflict upon corporate financial results.

These analyses show that evaluating land tenure risk should be a part of any company's diligence process, even when they operate in markets with clear, well-defined property rights systems. In particular, two are worth examining closely:

1. Rachel Davis and Daniel M. Franks' interview-based analysis of 25 mining cases around the world found that "a major, world-class mining project with capital expenditure of between US\$3-5 billion will suffer roughly US\$20 million per week of delayed production in Net Present Value (NPV) terms" due to land tenure issues.³ This not only included costs associated with lost productivity, but opportunity cost and the increased staff costs required to manage the conflicts.
2. A recent review by First Peoples of energy and mining companies listed on the Russell 1000 Index⁴ found that over 30% of the global production of oil and gas firms was sourced

³ http://shiftproject.org/sites/default/files/Davis%20&%20Franks_Costs%20of%20Conflict_SRM.pdf

⁴ <http://firstpeoples.org/wp/the-missing-risk-how-indigenous-peoples-can-make-or-break-your-portfolio/>

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either on or near indigenous peoples' lands. These lands also account for around 40% of the current production of mining companies. In terms of future reserves, indigenous peoples' lands are expected to account for 50% of oil and gas production and almost 80% for mining.

Applying these same analytical principles to EMEs involves a somewhat different approach, most immediately because of transparency problems in those countries. As discussed above, even getting concession data is a challenge, and the demarcation of indigenous territory in African or Asian countries is well behind what one sees in Latin America, Australia, Canada and the United States.

Also, the question of which companies and sectors to examine is different. Through their reliance on commodities from EMEs, large public companies are most certainly exposed to land tenure risk, but that exposure can only be seen by including analysis of smaller, non-public companies operating domestically and regionally. The same holds true for sectors. The importance of concessions in EMEs extends beyond energy and mining: agriculture, forestry, and infrastructure projects are quite important as well.⁵

We hope that the work shared here will contribute as much to others' knowledge as those works cited above did to ours.

⁵ The reader should not conclude that concessions are the only source of tenure risk. Transactions with large private landholders, although not considered in this particular analysis, may also be susceptible to similar problems.

Part One: Understanding Land Tenure Risk

Almost all commodities production in EMEs depends upon concessions. These are rights, generally granted by a national government, to exploit the natural resources of a given territory in a predefined way.

When a concession right is granted, it becomes an asset. Its value is determined by the cash flows from selling what is produced from the concession. The operator uses these cash flows to recoup the purchase price of the concession, meet financial commitments to investors who backed him, and turn a profit.

This resembles a bond, in that the quality of the repayment is not only judged by the bond issuer's financial profile, but also the legal structure of the country in which the bondholder's claims are governed. The importance of this has been highlighted by recent disputes over the legal strictures of bonds in Greece and Argentina.

A concession's reliability as an asset is strongly influenced by the way the country, region and locality in which the investment is made decide to govern how land is used. This arrangement – which we will refer to as the “land tenure” system – is defined as follows:

“[A]n institution, i.e., rules invented by societies to regulate behavior. Rules of tenure define how property rights to land are to be allocated within societies. They define how access is granted to rights to use, control, and transfer land, as well as associated responsibilities and restraints. In simple terms, land tenure systems determine who can use what resources for how long, and under what conditions.”⁶

Land tenure risk is the danger of a dispute between the concession holder and others who believe they have a legitimate claim to use the land for their own purposes, usually for reasons of traditional usage. To continue the bond analogy, it is akin to someone saying they have a more senior claim on the company's assets than the bondholder.

Many EMEs have very different systems of land management than those seen in places like the United States, Europe or Japan. These are often called “customary tenure” systems, which are arrangements that pre-date the formalized structures of the modern nation-state.

In a few cases, national cadastral systems – under which ownership is formalized through legal entitlement – have built themselves upon their inherited customary precedents. But, in most others, cadastral systems contain little or no reference to customary arrangements, which means that these arrangements are not factored into concession agreements. This is not always the result

⁶ <http://www.fao.org/docrep/005/y4307e/y4307e05.htm>

of corrupt practices; often governments simply do not have knowledge of the communities who live in far-flung rural areas.

At the same time, the incentives are clearly stacked against asking too many questions. After all, as far as the government is concerned, they are issuing licenses to encourage highly desirable foreign investment in their country that will create significant economic benefits. As explained in Section Four, investors must recognize that this risk is augmented in scenarios where concessions are granted through corrupt practices, since customary claims represent a direct threat to officials' personal income in those scenarios.

Whatever the particulars of the situation, the general pattern is for the concessionaire to assume full rights to use the land. Sometimes, they will assume the government has granted the concession with the agreement of local people who might be affected. Other times they will rely on a compensation plan (which is often poorly constructed) to shove these inhabitants off to the side.

Here, we must emphasize an important point: these rights may not be formalized on a piece of paper, but to the people who have them, they are almost viscerally real. Investors must remember that the vast majority of rural populations in EMEs live in very marginal conditions. They are generally quite skeptical – and with good reason – of their governments, legal systems and the like.

Accordingly, they will react very severely to any threat to their customary rights over land and resources. These rights have been handed down to them from prior generations and consecrated by cultural traditions that often predate the American and French revolutions.⁷

Investors should also remember the history behind this situation. In EMEs across Africa, Asia and Latin America, Western land tenure systems were imposed on the country by colonial powers.⁸ As colonies finally achieved independence in the wake of World War Two, many of their political and administrative institutions were either seized by dictatorial élites or simply crumbled.

At best, this led to an unsatisfactory compromise between the colonial and traditional ways of securing land rights, and at worst, a significant amount of legal expropriation without any

⁷ An anecdotal example from Burma may illustrate this point. Nobel Peace Prize winner Aung San Suu Kyi has not only received accolades from Westerners, but is also a genuine icon among her own people due to her long-running (and successful) battle against the former military dictatorship. This past March, she was dispatched to calm remote villagers protesting a Chinese copper mine's encroachment on their customary rights. Significantly, these villagers were also of her own ethnic group. But instead of receiving this respected national figure as a hero of the opposition, the villagers screamed insults at her repeatedly, forcing her to take refuge inside a vehicle.

⁸ <http://www.isid.ac.in/~tridip/Teaching/DevEco/Readings/06Institutions/04Banerjee&Iyer-AER2005.pdf>

It also bears noting that the same is true in North America and Australia, with the major difference being that in many of those places, indigenous populations were eradicated via violence and disease from the 15th to 19th centuries.

reference to customary rights.⁹ To cite one example among many, the fall-out following the end of post-colonial apartheid in South Africa created a seemingly endless series of national and local disputes over land rights that continues to hinder doing business in the country today and is unlikely to be resolved any time soon.¹⁰

Investors can be unwittingly caught up in the resulting structural tensions between customary and legal systems. In many cases, the arrival of external investment makes the situation worse by placing a price tag on customary rights, leading to conflict between local constituencies who feel that these (now objectively valuable) rights have been ignored or abrogated.¹¹

For all of these reasons, conflicts with local communities manifest themselves in various ways that harm operators. The most common are:

- Domestic legal challenges which can tie an operator up in court for months or years.
- Prosecution in international courts for human rights abuses.¹²
- Direct actions including the physical disruption of operations and seizing of necessary infrastructure such as roads and water sources by the dissenters.
- Public censure and potential press relations disasters that can damage the operator's image and harm their ability to do business elsewhere. Sometimes the impact extends to the investor's reputation as well.

In recent years, conflict over land (and natural resources) has attracted increased international attention, becoming widespread due to the changing nature of armed conflict and as a result of a variety of longer-term, global trends.¹³

The issue is regularly and vividly played out in the popular press, creating an impression that both the frequency and intensity of conflicts over resources are increasing.¹⁴ Research suggests this is more than just an impression.

⁹ http://www.habitat.org/lc/theforum/english/rights/tenure_problems.aspx

¹⁰ <http://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=1438&context=ealr>

¹¹ Stephanie Baez, The "Right" REDD Framework: National Laws that Best Protect Indigenous Rights in a Global REDD Regime, 80 Fordham L. Rev. 821 (2011), p.840. Available at: <http://ir.lawnet.fordham.edu/flr/vol80/iss2/14>.

¹² This is less common than domestic court cases that challenge the legality of the concession or activities of the company. Nevertheless they can have serious reputational consequences. Examples include the 2002 prosecution in Belgium of Total over its alleged complicity with the Myanmar junta (<http://business-humanrights.org/Categories/Lawlawsuits/Lawsuitsregulatoryaction/LawsuitsSelectedcases/TotallawsuitinBelgiumreBurma>) and the suit filed in US Federal court against Talisman Energy in 2001 over allegations of genocide in Sudan (<http://business-humanrights.org/Categories/Lawlawsuits/Lawsuitsregulatoryaction/LawsuitsSelectedcases/TalismanlawsuitreSudan>).

¹³ UN-HABITAT (2012). Land and Conflict. Toolkit and Guidance for Preventing and Managing Land and Natural Resources Conflict. UN Interagency Framework Team for Preventive Action. United Nations, New York. 92 pages.

In Indonesia, the Sajogyo Institute compiled a preliminary databank containing details of 545 cases of conflicts over industrial plantations from 1942 to 2010.¹⁵ One-third of the conflicts were reported from just 2010 alone.

In Cambodia, experts report that land conflict between logging concessions and local communities are becoming increasingly common.¹⁶ In 2003, every one of the 17 agricultural concession holders with signed contracts with the Ministry of Agriculture, Forestry and Fisheries who had taken action to demarcate their allocation had noted problems with local communities.

In Argentina, significant economic growth linked to agricultural exports (particularly soybean products) is reported to have caused a number of land conflicts with indigenous communities. Most of the conflicts are concerned with the violation of land rights starting in 2000, coinciding with “the expansion of the agro-export model in the Chaco region, driven by the international demand of soy.”¹⁷ These conflicts concern nearly eight million hectares and 950,000 people, mainly indigenous peoples and peasants.

In Malaysia, native communities in Sarawak have filed some 100 outstanding cases claiming unfair breach of their rights by logging and plantation companies.¹⁸ The most commonly cited cause for dispute between the groups is overlapping claim of the lands.^{19 20 21}

¹⁴ Yasmi Y, Kelly L, and Enters T. 2012. Conflict over forests and land in Asia Impacts, causes, and management. Issues Paper. The Center for People and Forests. 25 pages.

¹⁵ Overbeek W, Kröger M, Gerber J-F. 2012. An overview of industrial tree plantation conflicts in the global South. Conflicts, trends, and resistance struggles. EJOLT Report No. 3, 100 pages.

¹⁶ Barney K. (2005). Customs, Concessionaires and Conflict: Tracking Cambodia's Forest Commodity Chains and Export Links with China. China and Forest Trade in the Asia Pacific Region: Implications for Forests and Livelihoods. Washington, DC: Forest Trends.

¹⁷ Argentina, Red Agroforestal Chaco. "CONFLICTOS sobre TENENCIA DE TIERRA y AMBIENTALES en la REGIÓN del CHACO ARGENTINO." <http://redaf.org.ar/wp-content/uploads/2009/04/Conflictos-de-Tierra-y-Ambientales-datos-relevados-hasta-Agosto-2010.pdf>

¹⁸ Colchester, M. & Fay, Chip. (2007) Land, Forest and People- Facing the Challenges in South-East Asia. Final Report Rights and Resources Initiative: Listening, Learning and Sharing Asia. 55 pages.

¹⁹ Faeh, D. (2011) Development of Global Timber Tycoons in Sarawak, East Malaysia: History and Company Profiles. A report for Bruno Manser Fund, Switzerland

²⁰ Vaz, J. (2012). An Analysis of International Law, National Legislation, Judgments, and Institution as they interrelated with Territories and Areas Conserved by Indigenous People and Local Communities. Malaysia. Report No. 15. India: Natural Justice in Bangalore and Kalpavriksh in Pune and Delhi. 102 pages.

²¹ Fox, J, Suryanata K, & Hershock, P. (2005). Mapping Communities: Ethics Values, Practice. Honolulu, Hawaii: East-West Center. 118 pages.

And so on, and so forth. The main point is that the impact of these conflicts is anecdotally sizeable. But how much land is actually subject to these risks?

Getting a clear answer is extremely difficult, due to a widespread lack of available data. In an attempt to put some kind of frame on this problem, we have researched publicly available concession information from 12 EMEs²², all of which display significant areas of overlap between commercial concessions and community territory. We analyzed a total of 153.5 million hectares of commercial concessions.

The financial impact of these has to be interpreted differently, insofar as different sectors use land in different ways. For example, forestry and agriculture concessions tend towards using a greater percentage of their surface area, and this makes it possible to form a rough estimate of the financial impact of these overlaps. As shown below, the median figure we see amounts to 14%²³ of a typical concession's value:²⁴

Table 1: Summary of agriculture and forestry concession overlaps in 12 EMEs

Country	Crop	Affected concessions (Ha)		Indigenous land overlap		Impairment
		Area (Ha)	Value	Area (Ha)	Value	
Mozambique	Biofuels	3,058,506	\$68,816,374	1,233,627	\$27,756,597	40.3%
Philippines	Timber	505,282	\$127,583,661	169,067	\$42,689,391	33.5%
Argentina	Soybeans	23,256,371	\$17,807,312,964	5,968,980	\$4,570,424,897	25.7%
Liberia	Timber	310,258	\$187,468,576	78,720	\$47,565,430	25.4%
Malaysia	Palm oil	79,461	\$270,165,848	14,564	\$49,516,630	18.3%
Brazil	Soybeans	42,097	\$39,904,631	7,640	\$7,242,306	18.1%
Cambodia	Palm oil	5,643	\$17,515,872	848	\$2,630,666	15.0%
Indonesia	Palm oil	383,046	\$1,302,357,267	56,102	\$190,747,351	14.6%
Cambodia	Rubber	62,339	\$193,961,565	8,267	\$25,720,401	13.3%
Peru	Timber	8,174,151	\$3,012,743	932,736	\$343,778	11.4%
Cameroon	Timber	4,567,617	\$963,355,603	460,552	\$97,135,060	10.1%
Malaysia	Timber	931,730	\$1,196,493,199	81,415	\$104,550,320	8.7%
Cambodia	Cassava/sugar	51,534	\$61,574,561	2,770	\$3,309,932	5.4%
Chile	Timber	1,570,632	\$613,134,341	56,161	\$21,923,910	3.6%

²² The 12 countries are Argentina, Brazil, Cambodia, Cameroon, Chile, Colombia, Indonesia, Liberia, Malaysia, Mozambique, Peru and Philippines. An assessment of land tenure risk to each country is provided in Appendix One.

²³ See Table 1 in Appendix One.

²⁴ It is worth noting that the Putative Values in the table are annual, and simply intended to offer a sense of scale. They are rooted in the assumption that agriculture, forestry and biofuel concessions will tend to exploit all available land in roughly equal measure. The effect of overlap is therefore proportional. Additionally, our price assumptions are conservative, using raw log values rather than sawn wood for timber, and inefficient yield (taking the base case of real FAO production statistics).

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Liberia	Cassava	2,578,381	\$201,113,753	18,321	\$1,429,022	0.7%
Cambodia	Timber	327,758	\$524,412,800	1,202	\$1,922,784	0.4%
Total		45,904,806	\$23,578,183,757	9,090,971	\$5,194,908,476	

As for mineral exploitation, we have identified individual mining projects in Chile, Colombia and the Philippines that are under real threat from community-led disputes. These all show significant overlaps between the concessions and lands claimed by local inhabitants (specifically, indigenous communities), as well as evidence of mining projects under serious threat from disputes over land tenure and resources, particularly water.²⁵

Table 2: Summary of mining concession overlaps in three EMEs

	Mining licenses with overlap (ha)	Indigenous territory overlap (ha)	Impediment
Chile	25,552.20	24,219.83	31.0%
Philippines	1,486,763.97	406,267.15	27.3%
Colombia	997,433.20	336,173.86	6.3%
Total	2,509,749.37	766,660.84	30.5%

What is clear from all of our case studies is that, whether viewed at national, regional or local level, the pattern is the same: concessions for the commercial exploitation of natural resources – be they land, forest or rock – are granted without sufficient consideration of the claims of local inhabitants.

Again, bear in mind that this represents an examination of places with relatively high levels of transparency. Our research is limited to publicly available data and thus barely scratches the surface of the problem, insofar as much concession data is tightly held (especially in EMEs) and efforts to map customary claims rely on thinly funded campaigns by not-for-profit groups.

In other words, this is not a risk management problem in the classic mold where existing data must be interpreted differently. Instead, the data itself must be sourced in a different and more effective way. Otherwise, investors are forced to rely on traditional risk management tools such as those described in Section Two.

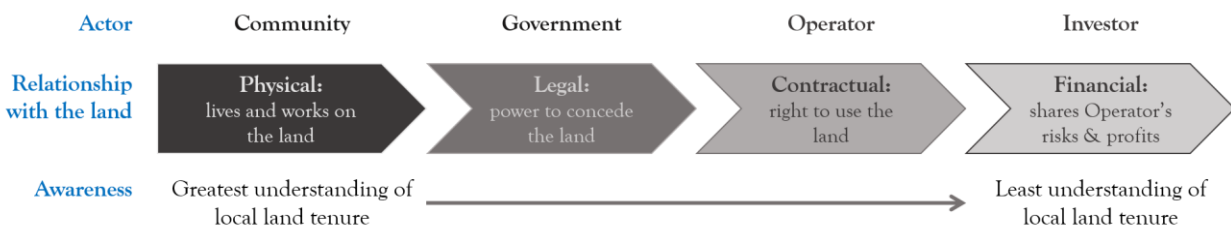
As we will demonstrate, these tools are inadequate.

²⁵ Anecdotal evidence suggests that water rights are a major problem. To understand it better, we have compared our datasets against hydrological maps from Chile, Colombia and the Philippines, in addition to looking at research and press reports. We are still forming an opinion on the nexus of land tenure and water rights, but our initial impressions of the topic are shared in Appendix Two.

Part Two: Why Proxies Do Not Work

Land tenure risk strikes at the convergence of four different parties: the local inhabitants who live in the area, the government of the country/region that oversees them, the operator who is being granted the concession, and the investor who has committed capital to establishment and execution of the operation.

As shown below, each party has its own point of perspective and interest in the land, and each can be expected to have a different level of awareness of the land tenure problem:



Indigenous populations living and working on concessionary land understand best how it is used and by whom; governments *should* know about it, but often do not. Operators assume that their legal contract negotiated with the government discounts the risk of not knowing, since they realize that the typical investor's diligence process will only check for a legal concession.²⁶

In this scenario, investors – particularly foreign ones – are playing at a real disadvantage. Due diligence is carried out primarily at a financial and legal level, including assessments of the financial credibility of the project, its operator and the government granting the concession.

Tenure may be raised as an issue, but primarily to ask about the security of the contract and the strength of the government's covenant. A physical visit by investors to the site of the project (if it does occur) will come at the latter stages of the process, by which point significant sums of money have already been spent by both operator and investor. The operator will thus take great pains to ensure that the visit is a success and the investor is reassured over any concerns they might raise; likewise the investor's primary aim will be to ensure that the project physically exists in the state of development asserted by the operator and that the people managing the project are skilled and credible.

In many cases, there is an assumption that credit ratings (or the prevailing interest rate environment they create) provide an appropriate measure of the risk that the government will not

²⁶ Some investors also take comfort in an operator's vague plan to help the community, which is usually provided with a picture of smiling children near a school, water pump, soccer field or animal. This is often an exercise in marketing with little operational integrity.

fulfill its obligations. The investor will therefore calculate the risk premium in its valuation and its expected returns on that basis.

If worse comes to worst and the investor is still not satisfied, they may decide to hedge against the non-performance of their government counterparty by purchasing political risk insurance (PRI), a credit default swap or a similar instrument that supposedly insures their investment.

Unfortunately, none of these measures is appropriate or sufficient to capture the risk of a land tenure related event. To understand why, it is worth going into these measures' methodologies in some detail.

From a general perspective, the risks posed by tenure find a logical fit with existing credit ratings processes. Project finance supplies the most important example, since credit rating agencies (CRAs) consider risks imposed by non-performance of the counterparty (which is normally the host government in the case of concessions).

Standard and Poor's (S&P) argues that "contract counterparty risk is one of the key factors considered when analyzing and assigning ratings."²⁷ If the counterparty is defined as 'irreplaceable' "by virtue of their market or contract position,"²⁸ then the risk in the deal is substantially higher.²⁹ The counterparty is defined as replaceable if an alternative contract is available at a similar price and quality; with similar skills; assignable; transferrable; and with effective project management.³⁰

But this is not the case for licensed, land-based projects, where governments are classified as *irreplaceable* counterparties and do receive prominent mention. This raises the importance of any government policy, including dispossession of land, which could lead to marked economic, political and social volatility.³¹ Accordingly, S&P applies the sovereign credit rating³² of the country in question to its rating of the project.

²⁷ Standard and Poor's, *Project Finance Construction and Operations Counterparty Methodology* (December 20, 2011), p3: paragraph 1.

²⁸ 'These counterparties typically are contracted for the entire term of a project, as without their support there is no market', Standard and Poor's, *Project Finance Construction and Operations Counterparty Methodology* (December 20, 2011), p9: paragraph 33.

²⁹ 'Standard & Poor's assessment of the risk a counterparty poses to a project financing takes into account: the credit quality of the counterparty; any credit enhancement; factors that may increase or decrease risk in the context of the credit of the project, *such as the ability to replace the party*; the type of commercial role being performed by the counterparty; any differences between the default risk on the counterparty's financial debt; and the counterparty's obligations to the project' Standard and Poor's, *Project Finance Construction and Operations Counterparty Methodology* (December 20, 2011) emphasis added, p14: glossary.

³⁰ Standard and Poor's, *Project Finance Construction and Operations Counterparty Methodology* (December 20, 2011), p7: paragraph 20.

³¹ "Country risk is a critical consideration. Issues can include restrictions of currency transfer and convertibility, limitations on foreign-owned profit repatriation, and onerous taxation. In extreme cases, nationalization, expropriation, or forced sale of assets can result in material losses. Country risk is normally highest in countries that have a history of, or clear potential for, marked economic, political, social, and economic volatility." Standard and Poor's, *Key Credit Rating Factors: Methodology and Assumptions On Risks in the Metals Industry* (June 22, 2009), p4: paragraph 1.

To be clear, S&P's attachment of a sovereign credit rating proxy is not unique. For example, HSBC's Project Finance team, in their *Introduction to Project Finance*³³ also describe the concession granting government as an irreplaceable counterparty, and CRA Fitch has a similar approach:

*"As with risk for financial counterparties, Fitch's rating of the [concession granting] counterparty is the starting point."*³⁴

And herein lies the problem: it might make sense if the government were taking some financial risk, say by underwriting or investing in the project, but this is a poor proxy for tenure risk.

The sovereign rating is a fiscal measure determined by the ability of governments to pay their debts. It is certainly not a measure of the concession-granting process at a national level, let alone a metric that should be used to judge concession risk for a specific project.

Even without resorting to case studies, the shortcomings can be illustrated with a couple of quick examples. As discussed in Appendix Two, Mexico has a very functional tenure system in many locations, but only has a sovereign rating of BBB from S&P,³⁵ whereas Malaysia, which experiences widespread low-level land tenure disputes, is rated A-. Portugal, which has very well established land laws and no obvious problems over land tenure, has a lower S&P rating (BB) than Indonesia (BB+), which is rife with tenure conflicts (Appendix Two).

The point here is that the correlation between sovereign credit ratings and land tenure security is not strong enough to support their use as a proxy for judging this risk. For interested readers, the examples in Appendix Three illustrate this point in greater detail.

³² Sovereign credit ratings give investors insight into the level of risk associated with investing in a particular country and also include political risks. At the request of the country, a credit rating agency will evaluate the country's economic and political environment to determine a representative credit rating. Obtaining a good sovereign credit rating is usually essential for developing countries in order to access funding in international bond markets. <http://www.investopedia.com/terms/s/sovereign-credit-rating.asp>.

³³ <http://www.hsbcnet.com/gbm/attachments/products-services/financing/project-finance.pdf>.

³⁴ <http://www.finance-quebec.com/Fitch%20Rating%20Criteria%20project%20finance.pdf>.

³⁵ <http://www.standardandpoors.com/ratings/sovereigns/ratings-list/en/>.

Part Three: The Difficulties of Insurance

If current proxies are unreliable, the easiest and most elegant response to tenure risk would be for investors to demand that operators purchase insurance to protect them against losses related to tenure risk.

Such a demand would assume one of two things: either private insurers have a reasonable basis upon which to assess this risk, set premiums and write policies in a profitable manner, or public insurers offer a product that is designed to compensate for the absence of private insurance. In either case, the assumption is that these policies provide a reliable level of protection for claims related to land tenure risk.

We believe that none of these assumptions is likely, mostly because the basic information required to extend this kind of coverage is difficult to get. In either case,³⁶ the insurer would be constrained by some capital limitation.

In simple terms, the insurer needs to know if the money it has on hand plus the money coming in the door is going to be enough to meet the promises it has made (plus a profit margin, in the case of private insurers).

This means using historical evidence and data to determine the probability that an event is going to happen and, if it does, the amount of losses likely to be insured. Accordingly, the insurance option for tenure risk requires three fundamental pieces in order to function:

1. A clearly definable “tenure event” that will trigger an insurance payment;
2. Some reasonable method of projecting the likelihood of that “tenure event” occurring; and
3. A similarly reasonable method of predicting the likely size of payments that “tenure events” would force the insurer to make.

We have examined specific evidence from two countries – Brazil and Indonesia – which leads us to believe that tenure risk fails all three tests in some important ways.³⁷ In particular, predicting the likelihood and timing of a “tenure event” seems quite difficult and projecting the insurable losses is even more daunting. These two countries serve as examples to illustrate this point.

³⁶ Note that this same set of considerations would also cover any reliable approach to offering public insurance, since solvency is an important consideration to governments, particularly given the current emphasis on budgetary austerity and belt-tightening in the West.

³⁷ The results of this research will be released in a separate paper on insurance in October 2013.

The difficulties in defining a “tenure event” can be seen in a Brazilian case involving Aracruz Celulose S.A. Once an independent company, Aracruz is now a part of Fibria Celulose S.A.

Because of its strategic position next to a port, Aracruz’s Barro do Riacho operation accounted for over 70% of the group’s production.³⁸ Long before their acquisition by Fibria, Aracruz bought land for plantations in Barro do Riacho in 1967, at the height of Brazil’s military dictatorship.

Though the company can produce a deed proving that they were sold the land by its previous owners, the Tupiniquim and Guarani peoples living in some districts claim that this deed is invalid because they were living on that land previous to the date it was sold, which means the land automatically belongs to them. According to Brazilian law, land that is recognized as being traditionally used by indigenous peoples, in accordance to their customs and traditions, is unalienable and the rights to it cannot be invalidated.

Throughout the 45-year investment, Aracruz has sustained continuous financial losses related to social unrest over disputed territorial boundaries. Aracruz’s Annual and Sustainability reports indicate that the costs incurred as a result of damage to property, invasions and occupations of land, illegal logging and burning of plantations, and the destruction of seedlings by activists were extensive and continual. They also record a great number of legal challenges, filed both by and against Aracruz each year.

Based on this information, can we define a “tenure event”? The default answer would be to define it as successful assertion of an unalienable legal claim by the community. Unfortunately, the wheels of Brazilian justice turn quite slowly. As a result, the “trigger” is never pulled, leaving Aracruz to shoulder continual losses.

And even where tenure events are possible to define, the losses from them are mystifyingly complex. An Indonesian palm oil company PT Tebora provides an example of this.

Starting in 1994, the company began operating a palm oil concession in the Jambi province of Sumatra. As is the case just about everywhere in the world, the concession’s land was not empty: local inhabitants who had lived on it for several generations asserted some traditional claims to certain portions of the land as well.

This was not necessarily an obstacle to proceeding with the concession. Indonesian law appears to have required PT Tebora to handle traditional land claims from these local farmers by

³⁸ Though such a concentration of output is operationally cost-effective, ratings agencies consider this lack of diversity a risk to operations and marketing. One operational difficulty in this sector is ‘site vulnerability’. Since the investment – trees – are easy to damage and difficult to protect, they are vulnerable to either accidental or deliberate damage. This consideration is not extended to land tenure, likely because of the obscurity of the issue.

compensating them and allowing them to cultivate within the concession (if they sold to PT Tebora). The company did this and production began.

Unfortunately, the process quickly went awry when the Indonesian government changed the rules governing the transaction. Angered by the switch in regulations (which apparently had nothing to do with PT Tebora) and a subsequent lowball offer from the company (something far more reasonably in PT Tebora's control), the farmers refused to stop cultivating 86% of the concession.

After some demonstrations and various scuffles involving police, the result was a 1999 occupation of PT Tebora's operation in which both the company's base camp and its oil palm tree nursery were destroyed. PT Tebora abandoned operations in the area.

Although land tenure is very clearly at the root of this conflict, the insurable losses are a bit murkier. From the insurer's perspective, the most logical attitude to take would be to regard the problem as a labor dispute in which PT Tebora failed to reach agreement with its employees, thereby making coverage from any putative "tenure insurance" inapplicable. Of course, this would leave the company (and its investors) without any protection.

On the other hand, if the company could indeed assert a valid claim, then how could the insurer possibly judge the likely size and probability of similar claims being asserted by other insured parties? Understanding the likelihood of a set of farmers setting fire to concession land and destroying company property is not like judging national-level problems caused by election disputes or similar "mass market" triggers. It requires some very specific local knowledge that is hard to gain at a reasonable cost.

And what about the moral hazard? If covered against all forms of loss, this might actually encourage the company in question to behave with even scantier regard to the tenure claims of local people, thus precipitating the insured event.

For these reasons, we find it unlikely that a private insurer could write policies which would cover tenure risk while maintaining profit margins. This is not to say that political risk insurance (PRI) from private providers might not cover certain events (i.e. violence) which have their roots in tenure disputes, but as an overall statement, it is hard to see how tenure risk can specifically be addressed via private insurance.

This leads us to the public side. One might conclude that the way for investors to offset land tenure risk is by purchasing PRI offered by public institutions used to dealing with EMEs. Indeed, public PRI (which we will refer to as PRI hereafter) is an important, often enabling guarantee for investments in developing countries of all kinds.³⁹

³⁹ <http://www.miga.org/investmentguarantees/index.cfm?stid=1796>; <http://www.opic.gov/insurance>

The use of PRI as credit enhancement on emerging market bonds and securitizations of these bonds is a relatively new development⁴⁰ that seems to be sparking market interest. Rating agencies have recognized this value and noted that corporate issues enhanced with PRI, in principle, may qualify for improved ratings under some circumstances. Indeed, CRAs have dedicated ratings methodologies that show exactly how risk is mitigated through PRI and how this impacts a rating.⁴¹

PRI from public insurers also covers a number of themes that at first glance one might associate with tenure risk:⁴²

- Confiscation, Expropriation and Nationalization: Government acts that cause the interruption of scheduled loan payments or deprive lenders of fundamental creditor rights following a missed payment.
- Currency Inconvertibility or Non-Transfer: Government controls that prevent the purchase or transfer of hard currency for loan repayment.
- Political Violence: Politically motivated acts of violence, including terrorism, war and civil war, which result in the interruption of scheduled payments.

However, none of them accurately reflects the specific risks of disruption that occur when land tenure is in dispute. It would be possible to argue that losses resulting from land tenure dispute are the fault of the government not performing on its concession contracts, and thus a form of expropriation, but there are many examples of policy holders being unable to claim on the PRI in much clearer cases of expropriation since the definition of “expropriation” is so mutable.

This is explained in Federal Reserve Bank of New York’s 2005 paper on PRI:

“Ambiguity as to whether a covered event has occurred is illustrated in the context of “creeping” expropriation, where it is often not clear when a series of sovereign actions triggers expropriation coverage. Another example is the case of Argentina, where it was not always clear whether or not the “pesofication” of dollar-denominated debts amounted to de facto expropriation. In general, claims

⁴⁰ Kausar Hamdani, Elise Liebers, and George Zanjani: *An Overview of Political Risk Insurance*. Federal Reserve Bank of New York (May 2005)
<http://www.bis.org/publ/cgfs22fedny3.pdf>

⁴¹ Moody’s, *Moody’s Approach to Rating Securities that Benefit from Political Risk Insurance, Rolling Reinstatable Guarantees and B Loan Participations*, Special Report (20 June 2002)

⁴² This is taken from AIG’s *Political Risk Insurance for Financial Institutions*
http://www.aig.com/aigweb/internet/en/files/mkt_WS_PoliticalRisk_tcm20-14776.pdf

resolution can be a complex exercise in insurance contracts that require a subjective determination of cause and effect.”⁴³

Here we are talking about ambiguity in a government’s direct actions, so to make the expropriation argument in the context of poorly captured tenure issues with respect to actions of the *local population* would presumably be more difficult.

And so, we see a situation somewhat similar to that we imagine on the private insurance side: the holes in what is covered by PRI reduce its usefulness as a risk management tool.

The separation of expropriation, currency and violence risks means that it can be hard to get to the bottom of the cause of losses, since the three are often entwined in a single event. Political and economic upheavals tend to occur together and both can cause a borrower default or devaluation of local currency payments. PRI offers no protection from such events and much of the risk of loss, including that related to land tenure, may fall outside the domain of political risk coverage, even though the loss is tied in some way to “political” risk.

In addition, PRI can be rendered void by certain actions, which its providers have an incentive to identify as a countermeasure against large claims. Most PRI contracts are rendered invalid by coercive practices on the part of the client, or associates acting on its behalf. This is particularly relevant to land tenure disputes because of the way that providers define “coercive practices”. As an example, we provide MIGA’s interpretation (our emphasis added):

“A “Coercive Practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of a person to influence improperly the actions of a person... Coercive Practices are threatened or actual illegal actions such as personal injury or abduction, damage to property, or injury to legally recognizable interests, in order to obtain an undue advantage or to avoid an obligation.”⁴⁴

According to the World Bank, many recent land investments have targeted areas with weak local land rights,⁴⁵ raising questions about how this land was acquired and whether the process paid attention to legitimate local claims. In some instances businesses, or more commonly their counterparties (host governments and local intermediaries), seize land and deny customary users access to resources.

⁴³ Kausar Hamdani, Elise Liebers, and George Zanjani: *An Overview of Political Risk Insurance*. Federal Reserve Bank of New York (May 2005) <http://www.bis.org/publ/cgfs22fedny3.pdf>

⁴⁴ MIGA, Contract of Guarantee for Non-shareholder loans (2011): p39.

⁴⁵ Deininger & Byerlee (2011) *Rising Global Interest in Farmland*, World Bank.

Often firms and investors are unaware of the importance of such access to the livelihoods and very survival of the local population. But intent aside, such actions avoid an obligation for inclusive consultation, fair compensation or legitimate grievance settlement and as a consequence, they injure the interests of locals through an undue advantage.

Given the importance of PRI coverage, not least to ratings agencies, cutting costs by avoiding due process through coercion is very risky for the company involved. Not only would it lose its insurance, but it may also see its rating affected as a result.

Since the impact of land tenure conflict is often felt at the governmental level, investors should also consider the source of PRI coverage, which is inherently subject to political influence. Most OECD countries have national agencies that provide domestic companies with export credit and political risk insurance. The largest among these agencies are:

- OPIC (U.S.)
- NEXI (Japan)
- SINOSURE (China)
- ONDD (Belgium)
- EDC (Canada)
- ECGD (Britain)
- COFACE (France)
- EFIC (Australia)

In addition, the World Bank established MIGA (Multilateral Investment Guarantee Agency) in 1987 to encourage both north-south and south-south financing and investment activities by providing political risk guaranties.

These public providers often have a mandate that includes specific trade and development goals aligned with those of their sponsoring entity. This affects the types of investment that are eligible for coverage and can include certain conditions related to the sponsor's objectives, such as environmental issues or the kinds of investors that may be insured (although we can find no evidence of mandates with a specific angle on land tenure).

Some providers are able to influence foreign governments in favor of their policyholders, either to prevent events from occurring or to obtain preferential treatment for their clients. This results in a “halo effect”, effectively shielding the policyholders from loss.⁴⁶ Certain PRI insurers have considerable influence with foreign governments and are successful in preventing adverse events from occurring or in securing preferential treatment for investors when adverse events do play out. This advantage is especially true for public insurers, whose ability to shield investors from loss is referred to by market participants as the “halo effect” associated with their policies.

⁴⁶ <http://www.bis.org/publ/cgfs22fedny3.pdf>

Take, for example, this statement by leading PRI underwriter Sovereign Risk Insurance on its achievements during the Argentine crisis:

“In addition to making prompt payment on valid claims arising from the severe economic meltdown in Argentina, Sovereign also made it possible for a number of its clients to effect conversion and transfer of regularly scheduled principal and interest repayments out of Argentina, thereby avoiding losses and enabling its bank clients to keep these Sovereign-insured loans performing and current. This loss mitigation was achieved via Sovereign’s status as a member of the Berne Union.

“At the height of the crisis in Argentina, the Argentine Central Bank decreed that borrowers who owe debts to lenders insured by a member of the Berne Union did not require prior approval of the Central Bank to convert and transfer funds to make payments of principal or interest on the insured loans. Notwithstanding the exchange controls in place in Argentina in 2002 – 2003, lenders were successful in converting and transferring almost \$100 million in scheduled payments because they were insured by Sovereign.”⁴⁷

This is all very well if the project to be insured is of the right size, in the right country and the investor is of the right type. But the limitation of the market, the lack of clarity on what is or is not an insurable political event, and the high cost of PRI means that it is not an option available to most investors in emerging markets projects. As Federal Reserve Bank of New York put it,

“PRI is not a substitute for fundamental economic, political and legal reforms that are needed to attract foreign direct investment to emerging markets.”⁴⁸

All of this suggests a very different approach to diligence – one rooted in an understanding of customary rights. We see the possibility of constructing a diligence approach which can be used to realistically assess, understand, price and manage the risk, as we will explain in the next section.

⁴⁷ http://www.sovereignbermuda.com/claims_history/8.html

⁴⁸ <http://www.bis.org/publ/cgfs22fedny3.pdf>

Part Four: Guidelines for Diligence of Land Tenure Risk

If land tenure risk is real, and there are neither proxies by which to judge it nor insurance that will cover losses it causes, then what can an investor ask a company to do about it? We suggest three concrete things:

1. Ask for a local, data-driven risk assessment.
2. Put their risk assessment into a national context.
3. Require the company to adopt operational policies that engage local inhabitants.

Although the particulars of these steps will change dramatically based on the type of company involved and the location of its operations (i.e. mines in Chile are different than palm oil in Indonesia), we nevertheless believe that they are feasible to implement across the board – and implement in an efficient way.

A. Local assessments

The best and most informative approach to gauging project-level tenure risk would come from a combination of local outreach and local-level mapping. For a specific concession, this would mean deploying experts working with local organizations – typically a local NGO, cooperative or other socially oriented group – to assess and map the territory using GPS-enabled devices.

This process (often referred to by NGOs as “community mapping”) would result in GIS shapefiles⁴⁹ showing the territory and resources which people living near the concession claim they require. This is the objective basis upon which tenure risk can begin to be understood.

It is important to take a practical view of the concession’s dependencies in doing this. This means mapping transport routes,⁵⁰ which are often limited in remote locations and their disruption can

⁴⁹ A shapefile is a digital vector storage format for storing geometric location and associated attribute information.

⁵⁰ A case involving Kappes, Cassiday & Associates (KCA) in San Jose del Golfo, Guatemala is informative in this regard. Since March 2011, the local community has maintained a human roadblock to the mine, preventing machinery and mining employees from entering the site. In May 2012, the blockade peacefully held off a force of 300 riot police in 50 trucks accompanied mining vehicles and heavy machinery. Subsequent intimidation and attempts to remove the blockade have similarly failed.

What is really interesting about this example is the distribution of investment risk: KCA bought the license from the original concession holders, Canadian company Radius Gold, in 2000, but only a portion of the sale price was paid up front. Radius will not receive the rest until the mine is operational, and thus retains significant risk to its original investment. Meanwhile, KCA’s risk is reduced, meaning that it has a much freer rein (financially speaking) to behave badly towards the local community.

If Radius Gold had performed a proper community mapping exercise and gained the consent of the local community at the time when the concession was granted, the risk of failure and therefore not being paid in full would be significantly reduced.

cause the project significant delay and damage profitability. As such, it is important to conduct the same exercise with local inhabitants living near those roads and in reasonable proximity to the concession.

Whether from local inhabitants near the concession or its major infrastructure dependencies, the resulting shapefiles would be valuable, objective data. This data could be used to analyze the overlap of the concession with these claims using a quantitative method adjusted to reflect the specific concession type.⁵¹

Whatever the specific technique applied, the result would be an objective number showing the basis for conflict between the concession and local inhabitants. If the local inhabitants claim the lion's share of the concession territory, it would be prudent for the investor to ask very pointed, tough questions about how well those local inhabitants have been compensated for their claims.

Additionally, this would raise the importance of realistic environmental impact assessments. The rural poor are much like anyone else in that they tend to react poorly to major fouling of their land, water and air.

Water is a critical resource in agribusiness and perhaps even more so for mining operations.⁵² Perhaps the best examples of this occur in Peru, a country that is already experiencing water stress and yet one of the most prospective countries in terms of mineral wealth.⁵³ A recent report showed that community disputes in Peru were causing delays to US\$7 billion of projects scheduled for 2014, including Corani, Rio Tinto La Granja, Galeno and the US\$3 billion Quellaveco project.⁵⁴

For example, in October 2008, community members concerned about the potential pollution of local water sources protested until the company was forced to suspend construction at Rio Tinto's massive La Granja copper project in Lamabayeque Province.⁵⁵ Also in Peru, Hochschild Mining, Xstrata and Goldfields La Cima are dealing with disputes over water sources.⁵⁶

In all of these cases, community mapping and negotiation prior to the initiation of the project could have prevented these delays to the operations and thus harm to profitability.

⁵¹ So, for example, a mining concession might weight the overlaps more strongly if they are in proximity to the pit, whereas an agriculture concession might weight all overlaps more equally.

⁵² <http://www.mineweb.com/mineweb/content/en/mineweb-sustainable-mining?oid=192381&sn=Detail>

⁵³ <http://www.bioone.org/doi/pdf/10.1659/mrd.1039>

⁵⁴ http://www.latinomineria.com/noticias/index_neo_en.php?id=2471

⁵⁵ <http://www.oxfamamerica.org/articles/files/mining-conflicts-in-peru-condition-critical.pdf>

⁵⁶ <http://bit.ly/162UBb1>

B. National context

Although tenure risk may seem like a local-level problem, our judgment is that national context is important. Consequently, it is best to take a view at the macro level by forming a view based on five factors:

1. *Corruption*

The first thing an investor needs to grasp is the general level of political corruption in the country and its government. Corrupt concession processes mean that the granting of a concession is a revenue stream for the very officials upon whom one might rely to provide information about land claims.

Even a clean concession grant can suffer from an overall environment of corruption. This is because it would limit access to data; in a country with higher than normal corruption, government officials would tend to regard the accurate demarcation of local land or resource claims as an impediment to the bribes that come with concession investments.

2. *Land laws*

Although we have examined many different countries, one single fact emerges from all of them: there is no nation in which significant local land claims do not exist. Therefore, tenure risk is likely to be lower in systems which recognize and adjudicate those claims, rather than pretending they do not exist.

Investors must take into account how far the legal rights of longstanding local inhabitants and indigenous peoples are acknowledged and protected in law, both constitutional and common. Additionally, it is important to account for how those rights can be asserted. If a local group with longstanding claims has constitutional recognition but no way to translate that onto a map, the existence of the law is not particularly useful in reducing tenure risk.

3. *Frequency of legal disputes*

In examining that land law, a search of judicial decisions over land dispute to determine their frequency is also important. However, this does not follow the typical assessment of legal risk.

EME land tenure is one of the few areas where the existence of disputes in court is a *good* sign for investors. This is because each court case is another indication of the level of trust the country's citizens are likely to have in recourse to the law as an alternative to direct action. The more they

trust in courts, the less likely they are to engage in extra-legal actions (equipment destruction, road blockage, etc.).⁵⁷

4. *Frequency of violent disputes*

The frequency of disputes is also important to understand. An algorithmic search of news archives for reports on legal and civil conflicts over commercial land-based projects will give a sense both of the frequency with which they occur and any trends in the level of activity.

If the size of the transaction being evaluated justifies qualitative assessments, this research will also provide details on things like the stage of project development at which most disputes occur and what form they take, and thus facilitate the investor's judgment on how to measure and handle the risk.

5. *Frequency of overlapping claims*

The investor can also generate information about the known overlaps between commercial concessions and territory claimed by indigenous communities – both the frequency of overlaps and the extent of potential impairment where they do occur. This can then inform the likelihood of an overlap affecting the project.

As we have alluded to repeatedly in this paper, this will by no means provide a full picture of where all overlaps occur. Community mapping data usually only captures areas that have been successfully identified as belonging to a group of people, rather than all areas that may be subject to a claim, but it can give a sense of whether the target country stands in comparison to others.

These five factors are offered with the specific idea that they can be reduced to a quantitative benchmark. These factors cannot be allowed to remain vague, but instead, should be translatable into normalized metrics that would pool into a country-level score.

The specific approach to doing this would obviously change dramatically from investor to investor, but as an overall indicator, one might imagine a method like that shown in the table below (note that a higher number indicates lower tenure risk):

⁵⁷ Of course, there is a limit to this principle. If local land claims are so completely enshrined and enabled as to incentivize excessive litigation, then the system becomes dysfunctional. But we believe this is a theoretical point to date: none of the EMEs we have reviewed are anywhere close to this stage.

Factor	Assessment Method	Normalized Metric
Corruption	Ranking on Transparency International's Corruption Perceptions Index, weighted by levels in Aon's Political Risk Map. ⁵⁸	% of best possible score (i.e. first in Corruption Perceptions Index and best in Aon rankings).
Land laws	Existence of specific law enshrining the rights of local inhabitants to assert land claims, <i>along with</i> a clear bureaucratic process for asserting and demarcating those claims.	Boolean metric: if rights are recognized, then score of 100%.
Legal disputes	Canned keyword search of news reports indicating a legal dispute over territory between local inhabitants and concession operators.	Number of results generated, expressed as a percentage of all news reports of legal disputes.
Violent disputes	Canned keyword search of news reports indicating a violent dispute over territory between local inhabitants and concession operators.	Number of results generated, expressed as a percentage of all news reports of legal disputes.
Frequency of overlapping claims	Geospatial examination of mapped concessions overlaid on mapped claims of local inhabitants.	One minus the percentage of concessions with overlapping claims.

Through approaches like this, we think it is quite possible to take a qualitative assessment of these macro tenure factors and systematize them usefully. The results of such a process would provide the broad context, something that could be used inside a diligence process to weight and compare project level risks.

This would be conducted in parallel with other diligence processes, and it is important to note that this is very much in line with existing due diligence practices in three ways:

1. The information generated is useful anyway, as it provides a better understanding of the concession and its features. For example, the assessment of local infrastructure (transport, power, water sources etc.) and how they are used and managed can help cash flow modeling.
2. The mapping process is easily incorporated into usual due diligence. Timeframes from first approach to investors to disbursement of funds and actual operational activity are variously stated as anything from four to 18 months,⁵⁹ whereas the community mapping process takes between three and 10 weeks.

⁵⁸ <http://www.aon.com/2013politicalriskmap/2013-Political-Risk-Map-03-14-13.pdf>.

⁵⁹ <http://www.hsbcnet.com/gbm/attachments/products-services/financing/project-finance.pdf>
<http://www.slideshare.net/Kfuelster/international-finance-corporation-ifc-investing-in-the-mining-sector-in-emerging-markets> (slide 43).

3. The cost of community mapping is good value relative to the information gathered: our conversations with the Rights and Resources Group indicate a cost of between \$0.15 and \$0.30 per hectare. Such a sum would have little impact on the cost of the project, but could contribute significantly to the accuracy of the risk modelling and forecasting of cash flows and contingencies.

C. Operational policies

It is insufficient for a company to convey reliable ground-level data and for the investor to contextualize the data within a national assessment.

Land tenure conflict is sufficiently complex – and the tenure systems of EMEs sufficiently unpredictable – to assume that some level of conflict will arise. This is a major reason why investors should insist on operational policies that manage these risks.

One company that is learning to take a proactive approach to community engagement is the pulp and paper firm Stora Enso. Stora Enso had foreseen potential conflicts over land tenure rights on its 90,000 Hectare concession in Guangxi, China; the company has been at pains to ensure that the contracts for the leasing of social lands – those claimed by the local community as opposed to the state – were legally clear, and initiated a legal screening process aiming to correct or revoke unclear contracts.

Stora Enso also asserted that it had taken steps to ensure environmental and social sustainability in its operation:

To ensure responsible tree plantation operations, Stora Enso set up a new sustainability agenda in 2010, covering forest certification, a legal and ethical forest land acquisition system, continuous local stakeholder dialogue, a conflict resolution system, and a programme of social monitoring run together with the local university. In connection with the newly announced investment, Stora Enso will also take new actions related to responsibility, since the company's impacts locally will be significantly increased.⁶⁰

However, this diligence did not satisfy the local community and the company became the subject of international censure: a Finnish documentary film 'The Red Forest Hotel'⁶¹ alleged that Stora Enso was complicit in forced evictions of local people living and working on the concession. A press release from the company makes the point on security of concessions in strong terms:

What we have learned in China is that ensuring the legality of the land lease contracts, following Chinese laws and regulations, and putting in place high-standard sustainability practices, is not

⁶⁰ http://www.storaenso.com/Documents/Guangxi_bulletin.pdf

⁶¹ <http://www.redforesthotelthemovie.com/en/index.html>

enough. We are making a pioneer investment in Guangxi, and solving the land lease contract issues must mean going beyond the legislation to ensure that the way we operate takes into account both the legal and ethical perspective.

We will first make a thorough analysis of our current sustainability agenda, revise it, and seek to incorporate recommendations from the UNDP into it. Those land agreements that have not yet been corrected will be corrected as rapidly as possible, at the latest by the time the industrial operation in Guangxi starts. In cases where disputes prove to be irreconcilable, Stora Enso will forgo the land. Stora Enso has so far refused to lease about 7,000 hectares of land that did not fulfill the company's legal and social criteria. Some villagers have been dissatisfied with this solution, as they have lost potential income.

In the medium term, Stora Enso will start buying out most of the intermediaries in order to shorten the chains of subleases. This is the only way to ensure clear and fair contracts, transparent pricing, and direct dialogue between the villages and Stora Enso. The idea of making direct agreements without intermediaries is also the wish of many of the local villagers who find the current land contracts unfair.

For Stora Enso, engaging with the local communities is not only about fair land agreements and efficient communications. We are investing in Guangxi for the long term, and will build the project together with the local communities. This requires constant dialogues with villagers, especially on issues that touch upon their lives Stora Enso will, for instance, plan new infrastructure such as roads and electricity grids together with villagers, so that they will also benefit whole communities.⁶²

In 2011 the Group revised its stakeholder engagement and community development plans and said that it will co-operate with local authorities, universities, organizations and villagers to find long-term sustainable solutions for development.

Another example of an operating policy that is attempting to address community engagement is that of New Britain Palm Oil (NBPL). NBPL is headquartered in Papua New Guinea, and maintains a plantation of over 78,000 hectares of planted palm, 10,000 hectares of under preparation for palm, as well as twelve oil mills and two refineries.⁶³ The firm is a member of the RSPO and has policies on free, prior and informed consent, promotion of good practices among small holders, as well as a window for continuous stakeholder engagement and resolving grievances.

Importantly, NBPL engages with Incorporated Landowner Groups (ILGs) to secure the majority of its land in Papua New Guinea. The ILG is a mechanism through which “customary groups can be incorporated so that they can use their land in the formal economy while protecting their

⁶² http://www.storaenso.com/Documents/Guangxi_bulletin.pdf

⁶³ http://www.nbppl.com.pg/?page_id=577

customary interests.”⁶⁴ A case study from AusAid in which NBPL partnered with and helped incorporate a number of customary groups, found that

*“when exposed to genuine business opportunities and assisted by capable business and legal advice ... ,
... landowners respond constructively and resolve their differences for a common economic benefit.”⁶⁵*

The mining giant Rio Tinto, at its Eagle Mine in Michigan, USA, is also attempting to engage communities through its Community Environmental Monitoring Program (CEMP).⁶⁶

This initiative is run by local community organizations and reports on Eagle's environmental performance. Through online and printed materials and community forums, the public is given access to detailed monitoring data, including a Community Scorecard that helps the operation to share its performance in an easily digested fashion. The Scorecard reports on a range of subjects from environmental issues to local job creation and includes information specifically requested by the community. It also includes the community's ranking of performance versus their expectation, which creates an evolving conversation between the operator and local stakeholders. Recent reports show that this system has room for improvement.

These three examples – reactive to the damage caused by insufficient attention and proactive to prevent it – show different but complementary approaches to community engagement. What is clear is that merely holding a contract bestowing legal rights over a piece of land is insufficient to ensure that things will run smoothly. Action has to be taken to engage economically and socially to obtain local community buy-in for a project and thus reduce the risk of conflicts that can ruin a company's profits and reputation.

⁶⁴ http://www.ausaid.gov.au/Publications/Documents/MLW_VolumeTwo_CaseStudy_1.pdf

⁶⁵ Ibid.

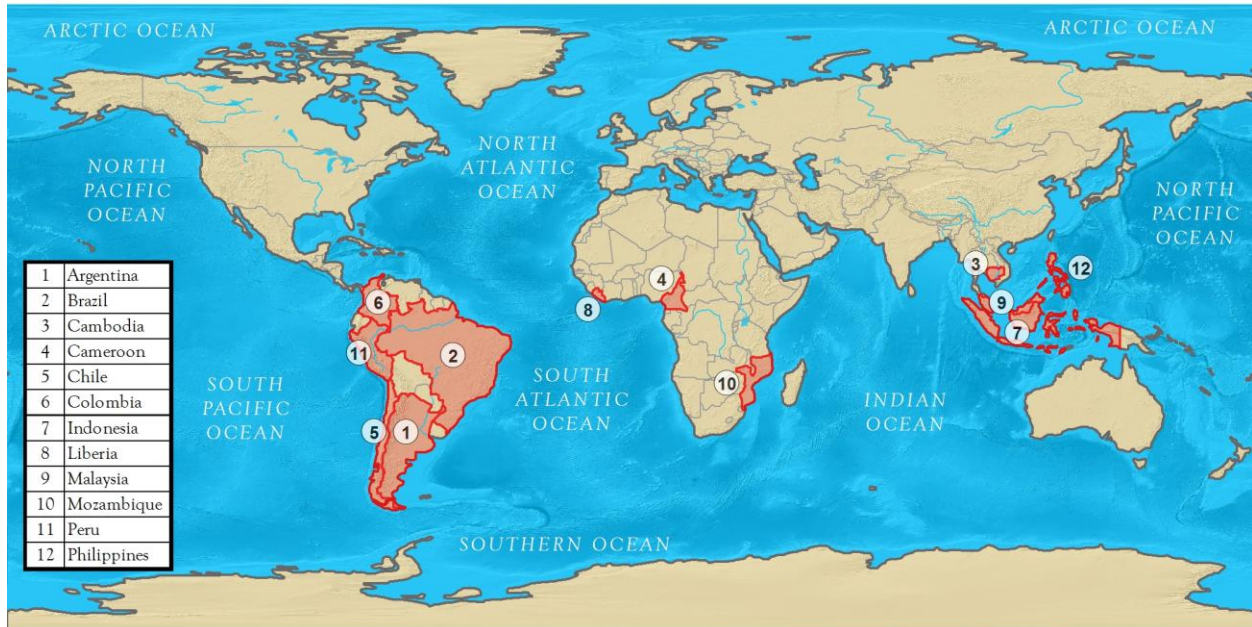
⁶⁶ <http://www.riotinto.com/ourbusiness/eagle4677.aspx>

APPENDIX ONE

Risk assessment of 12 country case studies

What follows are assessments of overlaps between community and commercial lands in 12 countries, including examples of timber, agriculture and commodities concessions. For each we have provided a summary of the overlapping areas and, where possible, a valuation based on the potential production impairment of the concession.

Fig. 1 – Case studies



METHODOLOGY

Our assessments are based on data from multiple sources: government and research institute websites, data portals, technical assessments, and reports publicly available. To analyze the overlap of concessions with areas of community land tenure, we overlay GIS¹ shapefiles of economic concessions with community forest and indigenous territories. We have estimated the potential cost of these impediments as defined by the overlaps, using production costs and sales values of the commodities produced in each concession. In all of our tables and summaries, figures are provided for affected concessions (i.e. those that are overlapped by community lands), rather than all concessions in the region or country. This is because the scarcity of community land mapping does not allow for a holistic view of every concession in a region or country – these are just the overlaps we know about.

For some concession areas data was not available in GIS format, so we have validated their physical existence and boundary based on the metadata we collected by cross-checking in Google Earth. A Google Earth place-mark was then added to mark a location. We followed a similar process for forest communities without GIS data but with maps available in other formats. During the process, KML files were generated and GIS software was employed to process all the resulting data for analysis.

¹ GIS Mapping (Geographical Information System Mapping): The analysis and visual display of data via color-coded geographical maps.

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To better understand the characteristics of an area and its association with the local communities, particularly on their resource use patterns, we also included data on biophysical attributes and infrastructures such as forest cover, waterways, reservoirs, and roads whenever available.

As there is currently no harmonized gateway of publicly available information, we have assembled maps and information to the best of our knowledge using data from different sources.

In each case study, we have highlighted a particular area of the country on a large scale, to show in detail how individual concessions and community areas overlap. In some cases where countries have granted many different types of concession, we have also limited our mapping to one or two types of production in order to make it easier to appreciate where overlaps lie. Hence, the data that follows is a fairly narrow, indicative subset of a much wider and more complex system of interconnecting territories and economic concerns.

RESULTS

Table 1: Agriculture & Forestry total overlaps

Country	Crop	Affected concessions (Ha)		Indigenous land overlap		Impairment
		Area (Ha)	Value (US\$)	Area (Ha)	Value (US\$)	
Mozambique	Jatropha	3,058,506	\$68,816,374	1,233,627	\$27,756,597	40.3%
Philippines	Timber	505,282	\$127,583,661	169,067	\$42,689,391	33.5%
Argentina	Soy beans	23,256,371	\$17,807,312,964	5,968,980	\$4,570,424,897	25.7%
Liberia	Timber	310,258	\$187,468,576	78,720	\$47,565,430	25.4%
Malaysia	Palm oil	79,461	\$270,165,848	14,564	\$49,516,630	18.3%
Brazil	Soy beans	42,097	\$39,904,631	7,640	\$7,242,306	18.1%
Cambodia	Palm oil	5,643	\$17,515,872	848	\$2,630,666	15.0%
Indonesia	Palm oil	383,046	\$1,302,357,267	56,102	\$190,747,351	14.6%
Cambodia	Rubber	62,339	\$193,961,565	8,267	\$25,720,401	13.3%
Peru	Timber	8,174,151	\$3,012,743	932,736	\$343,778	11.4%
Cameroon	Timber	4,567,617	\$963,355,603	460,552	\$97,135,060	10.1%
Malaysia	Timber	931,730	\$1,196,493,199	81,415	\$104,550,320	8.7%
Cambodia	Cassava & sugar	51,534	\$61,574,561	2,770	\$3,309,932	5.4%
Chile	Timber	1,570,632	\$613,134,341	56,161	\$21,923,910	3.6%
Liberia	Cassava	2,578,381	\$201,113,753	18,321	\$1,429,022	0.7%
Cambodia	Timber	327,758	\$524,412,800	1,202	\$1,922,784	0.4%
Total		45,904,806	\$23,578,183,757	9,090,971	\$5,194,908,476	22.0%

Table 2: Mining total overlaps

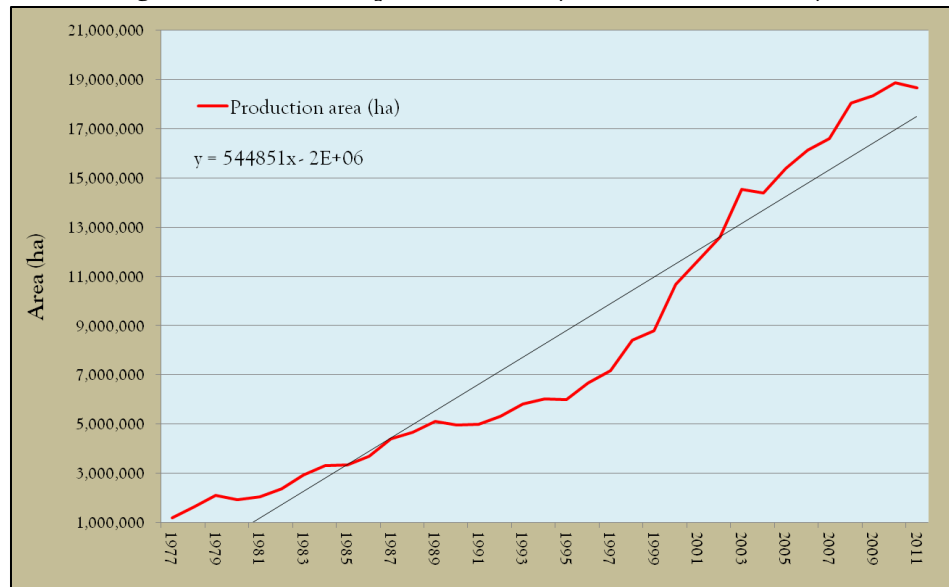
	Mining licenses with overlap (ha)	Indigenous land overlap (ha)	Impairment
Chile	25,552.20	24,219.83	31.0%
Colombia	997,433.20	336,173.86	6.3%
Philippines	1,486,763.97	406,267.15	27.3%
Total	2,509,749.37	766,660.84	30.5%

ARGENTINA

Argentina is the second largest country in South America (8th in the world) covering 2.8 million km². Agriculture is its primary economic sector, providing 14% of GDP. From 2003-2011 the sector grew at an average annual rate of 2.6%.²

Soybeans are Argentina's main agricultural export. From 2005 to 2011, 44.5 million tons of soybeans were harvested on average per year (making Argentina the world's third largest soybean producer). In a few decades 48% of all agricultural land in the country has been dedicated to soybean crops³ (hence the massive relative size of the impairment figures we provide compared to other countries). This has caused environmental and social concerns around biodiversity loss, deforestation and in some instances eviction of indigenous and rural communities.⁴⁵⁶

Fig. 2. Trend of areas planted with soybean. (Source: MAGyP)



Argentina has an estimated population of 42.6 million. Of this, 600,329 (1.7%) belong to indigenous population (Table 1).⁷

² Ministry of Foreign Affairs and Worship (2012). *Doing Business in Argentina - An Investor's Guide*. Secretariat of International Economic Relations. Under secretariat for Investment Development and Trade Promotion. 160 pages. Available at - http://www.inversiones.gov.ar/userfiles/guia_2012_ingles_2.pdf.

³ William EF (2007). *Seeds of Destruction. The Hidden Agenda of Genetic Manipulation*. Global Research p 187.

⁴ Kruglianskas I. *Soy production in South America: Key issues and challenges*. Accessed August 14, 2013 <http://www.proforest.net/objects/news-objects/soy-production-in-south-america-key-issues-and-challenges>.

⁵ UN calls on Argentina to stop eviction of indigenous peoples from their lands. Accessed August 14, 2013. <http://en.mercopress.com/2012/09/19/un-calls-on-argentina-to-stop-eviction-of-indigenous-peoples-from-their-lands>.

⁶ Indigenous peoples forcibly evicted from their ancestral lands. Accessed August 14, 2013. <http://www.forestpeoples.org/topics/rights-land-natural-resources/news/2010/11/argentina-indigenous-peoples-forcibly-evicted-thei>.

⁷ El Instituto Nacional de Estadísticas y Censos (2004). *Additional Survey on Indigenous Populations* Available at http://www.indec.gov.ar/webcenso/ECPI/index_ecpi.asp.

Table 3. Total indigenous population surveyed in 2004-2005⁸

Indigenous group	Population
Atacama	3,044
Ava guaraní	21,807
Aymara	4,104
Chané	4,376
Charrúa	4,511
Chorote	2,613
Chulupí	553
Comechingón	10,863
Diaguita/diaguita calchaquí	31,753
Guaraní	22,059
Huarpe	14,633
Kolla	70,505
Lule	854
Mapuche	113,680
Mbyá guaraní	8,223
Mocoví	15,837
Omaguaca	1,553
Ona	696
Pampa	1,585
Pilagá	4,465
Quechua	6,739
Querandí	736
Rankulche	10,149
Sanavirón	563
Tapiete	524
Tehuelche	10,590
Toba	69,452
Tonocoté	4,779
Tupí guaraní	16,365
Wichí	40,036
Otros pueblos declarados (1)	3,864
Pueblo no especificado (2)	92,876
Sin respuesta	9,371

The significant economic growth in Argentina linked to agricultural exports, particularly soybean products, is reported to have caused a number of land conflicts with indigenous communities.⁹

⁸ Source: INDEC. Encuesta Complementaria de Pueblos Indígenas (ECPI) 2004-2005.

⁹ According to a report (see <http://climate-connections.org/2011/06/17/15-years-of-gm-soybeans-in-argentina-the-true-cost-of-monocultur/>), there are no official statistics for land conflicts in rural areas. The Argentine Chaco Agroforestry Network (Redaf), a multidisciplinary platform consisting of social movements, environmental NGOs and experts, presented a report in October 2010 that describes 164 land and environmental conflicts. These conflicts concern nearly eight million ha (equivalent to almost 400 times the city of Buenos Aires) and 950,000 people, mainly indigenous peoples and peasants. This report only takes into account six provinces in northern Argentina: Salta, Formosa, Chaco, Santiago del Estero and the north of Santa Fe and Córdoba. Most of the conflicts are concerned with the violation of land rights starting in 2000, coinciding with “the expansion of the agro-export model in the Chaco region, driven by the international demand of soy.”

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We examined how the historical expansion of soybean production could overlap and further infringe the Argentinean indigenous territories. We used historical data of soybean production area (ha), actual location of production areas in 2005, and location of indigenous people territories. We collected GIS and secondary data from various sources including websites and reports. Some of the maps we used here were digitized from published data available. In our analysis, some adjustments were done on the acquired maps and GIS data. This explains why our reported hectareage might not exactly match the official statistics.

Figure 3. Map showing overlaps of soybean production areas with indigenous territories in 2005

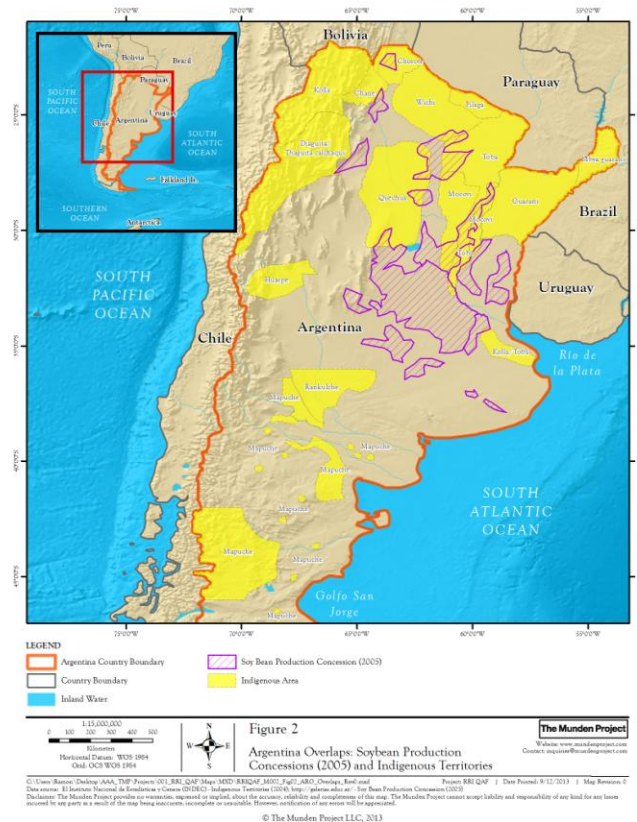


Table 4: summary of soybean overlaps in Argentina

Type	Total area planted 2005 (ha) ¹	Estimated production value (US\$) ²	Indigenous land overlap (Ha)	Potential impairment (US\$)
Soybean	23,256,370.67	26,107,043,560.53	5,968,980.03	6,700,633,729.67

¹ Note that due to adjustment made during the digitizing of maps, values on total area actually planted with soybeans in 2005 do not match with official statistics.

² Values based on FAO Statistics.

Table 5. Provinces with soybean plantation and its contribution to country total production

Provinces with soybean plantations	Area of province (Ha)	Area planted (Ha) ¹	Contribution to total production areas (%)
Buenos Aires	30,757,100	5,969,357	32.02%
Catamarca	10,260,200	37,000	0.20%
Chaco	9,963,300	689,550	3.70%
Córdoba	16,532,100	5,014,250	26.89%
Corrientes	8,819,900	25,000	0.13%
Entre Ríos	7,878,100	1,331,700	7.14%
Formosa	7,206,600	12,000	0.06%
Jujuy	5,321,900	12,150	0.07%
La Pampa	14,344,000	396,875	2.13%
Misiones	2,980,100	867	0.00%
Salta	15,548,800	600,015	3.22%
San Luis	7,674,800	170,700	0.92%
Santa Fe	13,300,700	3,107,800	16.67%
Santiago del Estero	13,635,100	1,047,000	5.62%
Tucumán	2,252,400	230,580	1.24%
TOTAL		18,644,844	

¹ MAGyP

²In red are areas analyzed to have overlaps with indigenous territories based on 2005 soybean production areas.

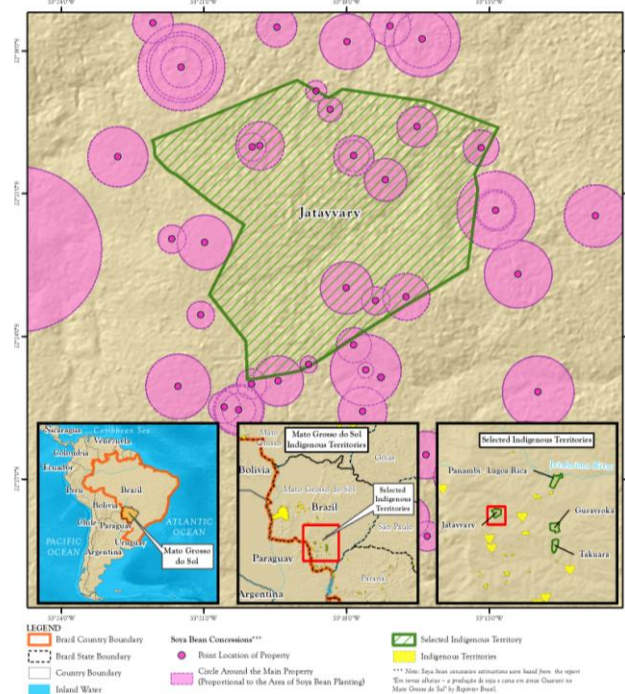
Although we could not find recent maps showing the exact delineation of soybean production areas, we are confident that the overlaps with indigenous territories have increased since 2005. The historical data of soybean production areas revealed an average of almost 500 million ha increase per year (see Figure 2).

BRAZIL

Brazil is the third largest agricultural exporter in the world, and ranks number one in world production and exports of sugar and number two in soybeans.¹⁰ In recent years the expansion of commercial soy and sugar plantations has resulted in displacement of rural producers and conflicts with indigenous communities. The threat of mass suicide by native Guarani-Kaiowá people and the demand of rural producers for economic compensation for leaving indigenous lands in southwest Brazil in 2012;¹¹ the displacement of Guarani Indians due to the sugar cane grown in their lands by an agrofuel company,¹² and the conflict between local farmers and the Xavante tribe are just three well-known examples.¹³

The study “Em terras alheias – a produção de soja e cana em áreas Guarani no Mato Grosso do Sul” by Repórter Brasil¹⁴ maps the cultivation of sugar cane and soy beans in six indigenous areas (Jatayvary, Guyraroka, Panambi-Lagoa Rica, Takuara, Laranjeira Nhanduru, and Guaiviry). For the four (out of 53) indigenous territories in Mato Grosso do Sul with records of overlapping cultivation (Fig. 4a-d), the estimated production impairment value is US\$ 8,576,705.16 - 0.2% of the agricultural production in the state. If this figure seems small, bear in mind that it represents less than one in 13 of the indigenous territories in the area, since data on the rest is not available.

Fig. 4a: Overlap between soy plantation and indigenous territory in Jatayvary¹⁵



¹⁰ <http://www.fas.usda.gov/country/Brazil/Brazil.asp>.

¹¹ <http://www.ipsnews.net/2012/11/soy-and-sugar-cane-fuel-native-land-conflicts-in-brazil/>.

¹² <http://www.rainforest-rescue.org/achievements/4432/biofuel-shell-backs-out-of-indigenous-territory>.

¹³ <http://www.culturalsurvival.org/publications/cultural-survival-quarterly/brazil/saving-cerrado>.

¹⁴ <http://reporterbrasil.org.br/documentos/emterrasalheias.pdf>.

¹⁵ <http://reporterbrasil.org.br/documentos/emterrasalheias.pdf>.

Fig. 4b: Overlap between soya bean farms and indigenous territory in Gurayroka¹⁶

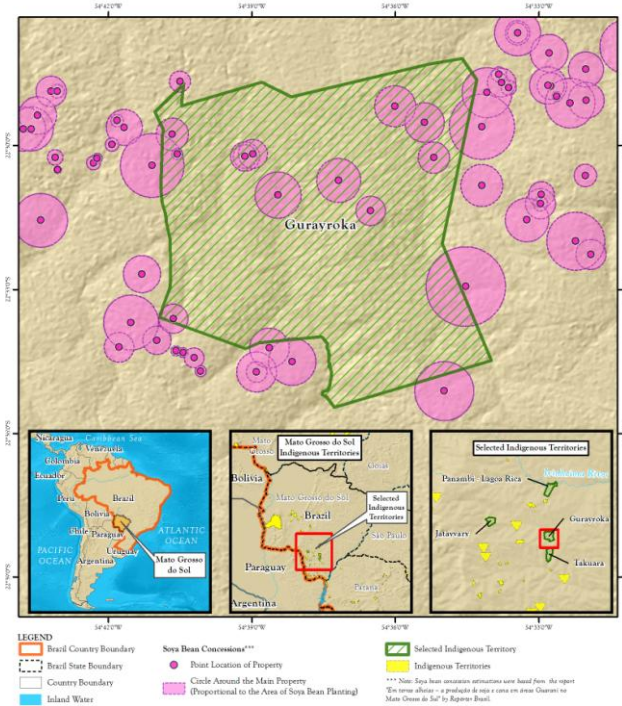
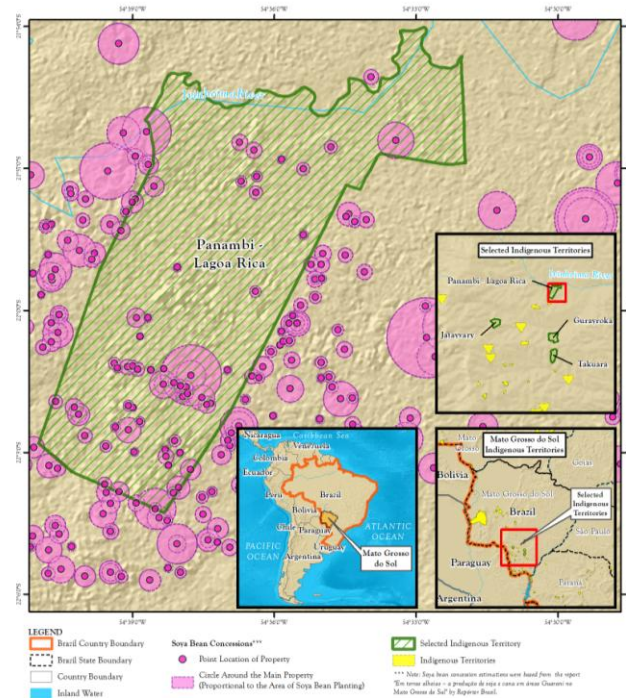


Fig. 4c: Overlap between soya bean farms and indigenous territory in Panambi Lagoa Rica¹⁷



¹⁶ <http://reporterbrasil.org.br/documentos/emterrasalheias.pdf> .

¹⁷ <http://reporterbrasil.org.br/documentos/emterrasalheias.pdf>.

Fig. 4d: Overlap between soya bean farms and indigenous territory in Takuara¹⁸

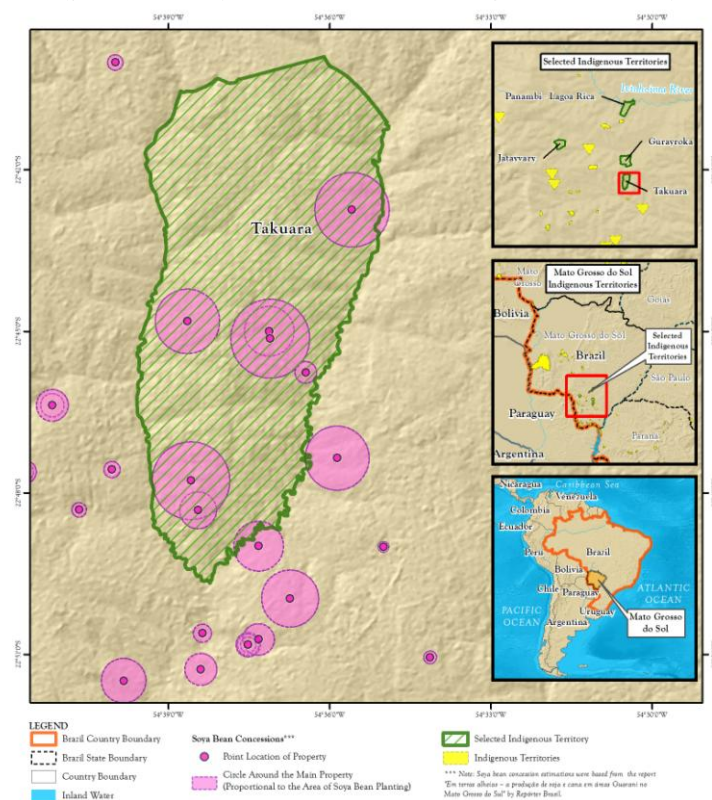


Table 6: Summary of overlaps in Brazil

Indigenous territory	Area of indigenous territory (ha)	Area overlapping soybean farms (ha)	Impairment
Jatayvary	8,800.00	2,207.00	25%
TI Guyraroká	11,401.00	1,454.00	13%
Panambi - Lagoa Rica	12,196.00	1,571.20	13%
Takuara	9,700.00	2,408.00	25%
Total	42,097.00	7,640.20	
Production value (US\$)	\$39,904,630.50	\$7,242,306.05	18%

¹⁸ <http://reporterbrasil.org.br/documentos/emterrasalheias.pdf>.

CAMBODIA

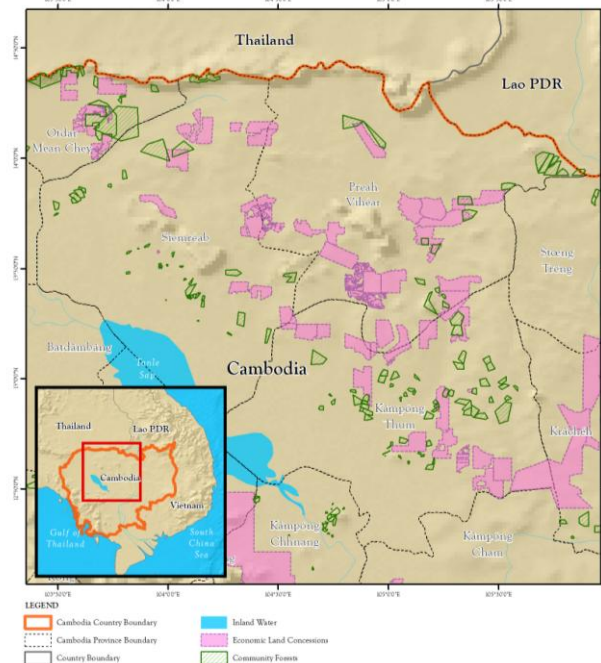
According to the World Bank (2013), Cambodia's economy grew at almost 10% per year between 1998 and 2008. This growth momentum is expected to continue with projected growth rates of 6.7% in 2013 and 7.0% in 2014. It is driven by strong exports, private investment, agriculture, diversification, and a solid macroeconomic position. However, Cambodia still faces a number of development challenges. In particular, these are: the effective management of natural resources, land management, environmental sustainability and the pursuit of good governance.

Under the rule of the Khmer Rouge in the 1970s, private land ownership rights were abolished and most land tenure and cadastral records destroyed. While people had a right to work the land, all land belonged to the State. Although Cambodia has since been liberalized and adopted a free market economy, the lack of land records means that local communities have no evidence on which to base their tenure. Consequently, when the government grants Economic Land Concessions (ELCs) to commercial interests for the development of plantations, they usually take no account of the people living on the land in question.

Land issues have been on the increase since the country adopted a free market economy in the early 1990s.¹⁹ In 2007, UNHCHR reported that about 0.94 million of 18.1 million ha of the total land in the country were approved for ELCs to foreign and national companies in 2007, with majority said to have been granted on local communities' land. This led to heightened pressure on the availability and accessibility of resources and land for poor local people, resulting in the high incidence of disputes between investors, governments, and local communities.

To demonstrate a possible source of conflict in land tenure between concessionaires and communities, we overlaid the map of various ELC areas (sugar, cassava, rubber, and timber) with maps of community forest.²⁰

Fig. 5. Overlap between economic land concessions and community forests in Cambodia



¹⁹ Prachvuthy, M. (2011) 'Land acquisitions by non-local actors and its consequences for local development: The Impacts of Economic Land Concessions on Livelihoods of Indigenous Communities – The Case in Northeastern Provinces, Cambodia', Phnom Penh: Royal University of Phnom Penh.

²⁰ Data downloaded from <http://www.opendevdevelopmentcambodia.net/briefings/census-data/>.

Table 7: Summary of overlaps in Cambodia

Type	Total area planted 2005 (ha)	Estimated production value (US\$)**	Indigenous land overlap (Ha)	Potential impairment (US\$)**	Impairment (%)
Agriculture	51,534	61,574,561	2,770	3,309,932	5.4%
Oil Palms	5,643	17,515,872	848	2,630,666	15.0%
Rubber	62,339	193,961,565	8,267	25,720,401	13.3%
Timber & pulp	327,758	524,412,800	1,202	1,922,784	0.4%
TOTAL	447,273.99	797,464,797.20	13,085.96	23,331,535.22	2.9%

CAMEROON

Established under the Forestry Law of 1994, community forests in Cameroon are areas within the non-permanent forest estate zoned for exclusive use by village communities. Presently, approximately 1 million ha or 2% of the National Forest State are allocated for community forests. Forestry is a very important part of Cameroon's economy, contributing 6% of GDP²¹ and 10% of the country's total exports by value.²²

However, as seen in the map below, many community forests are completely overlapping with logging concessions. This is a challenge for local communities, not only to their livelihood but also to their cultural beliefs, since many indigenous communities regard forests as sacred. In the 2012 edition of the *Forest Atlas of Cameroon*²³, World Resources Institute (WRI) reported 5.5 million ha allocated for logging as forest concessions, a significant increase from approximately 1.5 million in 2004. Using the *Forest Atlas* as our source, we investigated the overlap between logging concessions and community forests (Fig. 6) in Cameroon.

²¹ Richard Eba'a Atyi, *Trade of timber and timber products in Cameroon and Gabon* Observatory for the Forests of Central Africa (OFAC).

²² <http://www.gfmag.com/gdp-data-country-reports/305-cameroon-gdp-country-report.html#axzz2c3Qv81l8>.

²³ <http://www.wri.org/project/interactive-forest-atlas-cameroon>.

Fig. 6: Overlap between logging concessions and community forests in Cameroon

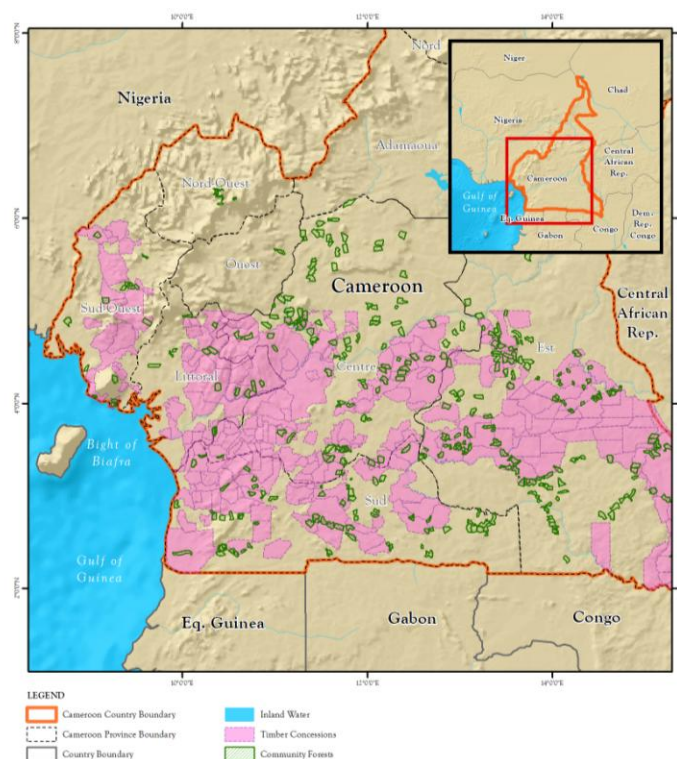


Table 8: Summary of overlaps in Cameroon

Type	Affected concessions		Indigenous land overlap		Impairment %
	Area (Ha)	Value (\$million)	Area (Ha)	Value (\$million)	
Forestry (timber)	4,567,617.00	\$963,355,603.18	460,552.41	\$97,135,059.52	10.1%

CHILE

Tensions between indigenous people of Chile and commercial interests in logging and mining are frequent and well-established.²⁴ Copper mining²⁵ and timber are crucial to the country's economy, contributing 71% of exports²⁶, but they are also a great drain on resources needed by local communities, particularly water. In the case of mining, almost 98% of operations are carried out in desert or semi-desert conditions, leading to watershed depletion that requires heavy investments from operators and adding billions of dollars to the costs of extraction²⁷ – this without any established water rights for indigenous communities living on the land.

²⁴ http://www.eurac.edu/staff/ATomaselli/Documents/A.Tomaselli_IJMGR_No.19_02-2012_scanned.pdf.

²⁵ The Economist. *Mining in Chile. Copper solution*. April 27, 2013. Accessed August 12, 2013 from <http://www.economist.com/news/business/21576714-mining-industry-has-enriched-chile-its-future-precarious-copper-solution>.

²⁶ *Ibid.*

²⁷ <http://www.miningweekly.com/article/rio-tinto-bhp-to-invest-3bn-in-escondida-seawater-desalination-plant-2013-07-26>.

The Mapuche group, the largest ethnic community in Chile, has a strong track record of opposing mining operations on its lands. As cited by Espinoza,²⁸

"The number of violent events in the context of the indigenous conflict has grown steadily in the last two decades. The main reason for the claims from the Mapuche is similar to that of other indigenous peoples from other countries, namely the existence of traditional rights on land."

Mining is the largest contributor to the Chilean economy.²⁹ Copper mining alone provides 19% of government revenue, 60% of Chilean exports and a third of the world's copper³⁰. The most recent data on mining concessions shows that 13.7 million ha – 18% of the total land area of Chile – is licensed for mining exploitation³¹, with a further 17.9 million ha (24%) granted for exploration concessions.

Meanwhile, forestland in Chile covers 22% of the national territory, with Chilean native forests accounting for about 16.7 million ha and forest plantations for about 3.01 million ha.³² Forestry, the country's second most important economic sector, represents 3.5% of the Internal Gross Product. Forest exports amount to \$3.4 billion US, representing 11% of Chile's total exports.

In 1995, the Indigenous Law (No 19.253) in Chile regularized indigenous properties with the identification of their limits and resources. The Law identified indigenous development areas (*Áreas de Desarrollo Indígenas* or ADIs) on which to focus state-economic development programs. The government set aside 8.15 million ha as ADIs,³³ but indigenous communities do not have preferential rights among any other stakeholders to the establishment of water rights, mining, and management of forest or adjacent water resources, which added to the complexity of the situation.³⁴

For the current study, we used spatial mapping to analyze the main source of conflict between indigenous groups and economic concessions. Specifically, we analyzed the overlaps between forest plantations, mining concession areas and ADIs. We focused our investigation in Biobío and Araucanía regions. Although there are reported overlaps between indigenous territories and protected areas in Chile,³⁵ it is beyond the scope of this paper.

²⁸ Page 16. Espinoza J (2012). *Towards improved governance of indigenous land in Chile: Challenges and opportunities regarding indigenous land rights from a systemic perspective*. Paper presented at the 8th Regional FIG Conference. November 26-29, 2012. Accessed August 10, 2013
http://www.fig.net/pub/uruguay/papers/rs04c/TS04C_espinoza_6296.pdf.

²⁹ Central Information Agency (CIA). The World Fact Book. Chile Economy. Accessed August 12, 2013.
<https://www.cia.gov/library/publications/the-world-factbook/geos/ci.html>.

³⁰ The Economist. Mining in Chile. Copper solution. April 27, 2013. Accessed August 12, 2013 from
<http://www.economist.com/news/business/21576714-mining-industry-has-enriched-chile-its-future-precious-copper-solution>.

³¹ Servicio Nacional de Geología y Minería (SERNAGEOMIN). Statistics of Mining Concessions. Accessed August 12, 2013
<http://www.sernageomin.cl/sminera-estadisticasconc.php>.

³² National Forestry Corporation (CONAF). Catastro Vegetacional. Accessed August 12, 2013. <http://www.conaf.cl/nuestros-bosques/bosques-en-chile/catastro-vegetacional/>.

³³ Corporación Nacional de Desarrollo Indígena National Indigenous Development Corporation <http://www.conadi.gob.cl/index.php/nuestra-institucion/areas-de-desarrollo-indigena>.

³⁴ Perez de Arce MG (2011). *Protected Areas and Indigenous Peoples in Chile*. Master's Thesis Geography, Urban and Environmental Studies. Concordia University Montréal, Québec, Canada.

³⁵ Page 56, *Ibid*.

Fig. 7: Overlapping mining and forestry concessions with community ADIs in Chile

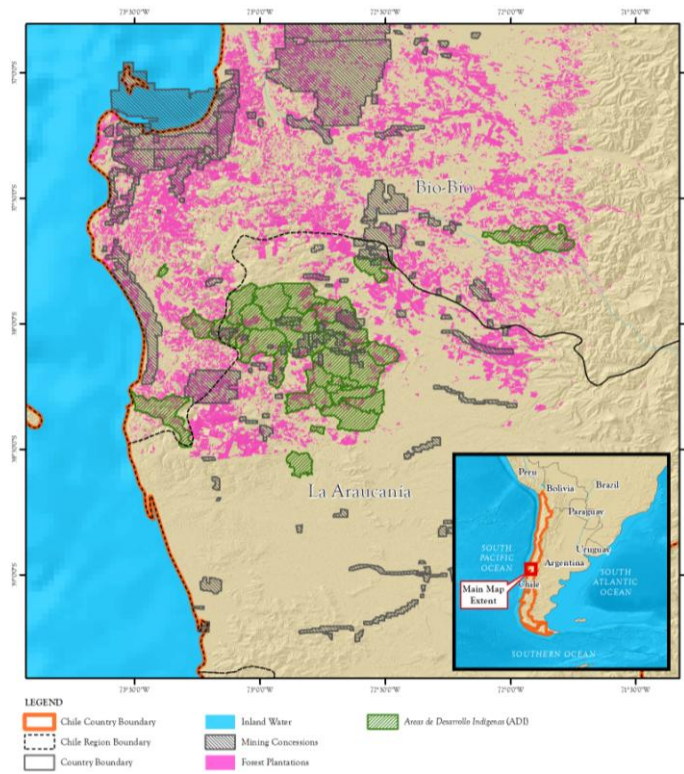


Table 9a: Summary of forestry overlaps in Chile

Crop	Affected concessions (Ha)		Indigenous land overlap		Impairment
	Area (Ha)*	Value (US\$)	Area (Ha)	Value (US\$)	
Timber	1,570,631.53	613,134,341.28	56,161.24	21,923,910.48	4%

*CONAF Forestry Statistics 2012

Table 9b: Summary of mining overlaps in Chile

	Mining licenses with overlap (ha)	Indigenous land overlap (ha)	Impairment
Chile	25,552.20	24,219.83	31.0%

As noted in the cases above, putting a value on the potential impairment of mining cannot be done on a hectareage basis, so we have again taken an example of a mining operation that is under threat as a result of community disputes over the use of land. The example is the Pascua-Lama gold mine, a project backed by Canadian mining firm Barrick Gold, which serves as a fine example of how not securing the agreement of indigenous communities prior to investment can risk billions of dollars of investment and threaten the operations of one of the world's best established

The Munden Project

When (and if) Pascua-Lama comes online, it is expected to produce an average of 800,000 to 850,000 ounces of gold and 35 million ounces of silver in its first full five years of operation at a low cost – using the most bearish price forecasts, this is equal to about \$4 billion of gold³⁶ and a further \$875 million of silver.³⁷ However the project has been subject to severe delays and is not expected to start operations for at least another 18 months,³⁸ as the indigenous Diaguita community has dragged Barrick through the courts in efforts to revoke the project's environmental license. The Toronto listed gold mining company has already taken an impairment charge of \$5.5 billion³⁹ related to Pascua-Lama, which is at serious risk of failure. One commentator recently called for the project to be shelved entirely, citing environmental and technical obstacles:

“Given the grade of the deposit, given the technical challenges of the project, given the various landmines between here and first pour, and comparing these characteristics to Barrick’s existing ops, all with proven operational characteristics in friendlier jurisdictions, it becomes clear that, in relation to the sweet part of its operational portfolio, Pascua at current prices is simply not an attractive project”⁴⁰

Write-downs on the project have already slashed the net worth of Barrick by about 40%,⁴¹ meaning that the company's ability to raised finance for its many other projects worldwide is in danger of being impaired.

³⁶ Pricing at \$1,000/oz <http://www.theguardian.com/business/economics-blog/2013/jun/03/gold-bubble-bursts-nouriel-roubini>.

³⁷ Pricing at \$25/oz <http://www.commodityonline.com/news/ubs-trims-silver-price-forecast-for-2013-2014-55068-3-55069.html>.

³⁸ <http://www.mining.com/more-bad-news-for-barrick-pascua-lama-production-delayed-deep-into-2015-40007/>.

³⁹ <http://www.forbes.com/sites/kitconews/2013/08/01/barrick-backs-pascua-lama-after-huge-second-quarter-bath/>.

⁴⁰ http://www.kitco.com/news/2013-07-04/KitcoNews20130704AL_Barricks-Pascua-Lama-Should-Be-Shelved-Pollitt-Co.html.

⁴¹ <http://www.tradepreciousmetals.com/2013/07/10/barrick-5-5bn-writedown-to-cut-net-worth-40/>.

COLOMBIA

Colombia has a land area of 114.17 million ha of which 36 million ha (31.5%) are titled as indigenous territories⁴². Indigenous communities own 22.1 million ha of forest, mostly in the Amazon, and Afro-Colombians about 5.4 million ha, mainly in the Pacific region.⁴³ Colombia has a rich and largely unexploited forest resource in the Amazon Basin, however, like many other countries, it faces several issues around natural resources management including mining.

Large-scale mining is officially considered one of five engines of the Colombian economy.⁴⁴ In the country, more than 8.4 million ha have been licensed for mineral deposit exploration and more than 37 million ha are licensed for crude oil exploration. Between 1990 and 2001, 1,889 mining licenses were awarded (157 per year), but by 2010 there were already 8,928 concessions (4.8 million ha) and 20,000 applications pending.⁴⁵

Concurrent with this mining boom in Colombia is the increase in the number of concerns ranging from environmental problems to community consent facing the mining sector. There are notable conflicts between commercial operators and indigenous communities due to failure in consulting them before commencing mining operations⁴⁶ and encroachment of their land reserves.⁴⁷

According to a report, "*Analysis of mining in indigenous territories in Colombia*,"⁴⁸ some of the mining licenses in 2010 affected approximately 18% of the 641 *resguardos* or indigenous land reserves. The 233 mining licenses covered an estimate of 267,263 ha of the *resguardos*.

For the current paper, we did the same analysis. We identified overlaps between *resguardos* and active mining license titles in 2012. Based on the data we obtained from SIG-OT,⁴⁹ there are 9,464 active mining titles in 2012 which covered 5.32 million ha. More than 300 of these mining licenses overlapped with an estimate of 336,173 ha of the *resguardos*. This is 6% of the total mining licenses areas and 25% more of the overlapping areas in 2010. With 8.4 million ha allocated for mining in Colombia, the overlapping areas could increase upon approval of all the mining license applications.

We also estimated the overlap of oil production and exploration with indigenous land reserves.⁵⁰ Based on our analysis, we found approximate 595,360 ha (2% of the total area) of overlap. With the current proportion of overlap, this could increase to almost 900,000 ha considering the 37 million ha licensed for crude oil exploration. This could

⁴² Territorio Indígena y Gobernanza. General Information Page. Accessed 10 August 2013
<http://www.territorioindigenaygobernanza.com/colombia.html>.

⁴³ ITTO 2005. Colombia Country Profile. http://www.itto.int/sfm_detail/id=12490000.

⁴⁴ Cited on page 4. U.S. Office on Colombia. 2013. *Large-scale mining in Colombia: Human rights violations past, present and future*. 44 pages.

⁴⁵ For more information, please see report. *Large-scale mining in Colombia: Human rights violations past, present and future*. 44 pages.

⁴⁶ See Colombia halts mining multinationals in indigenous territory - <http://www.lifemosaic.net/eng/news/colombia-halts-mining-multinationals-in-indigenous-territory/#srhash.ui1Pn0v9.dpuf>.

⁴⁷ See Colombian indigenous people protest road through ancestral territory. <http://intercontinentalcry.org/colombian-indigenous-people-protest-road-through-ancestral-territory/>.

⁴⁸ Peace Brigades International: "Mining in Colombia: At What Cost? 2012. http://www.fta-eu-latinamerica.org/wp-content/uploads/2011/08/Analysis-of-mining_TP2-1.pdf.

⁴⁹ Sistema de Informacion Geografica Para La Planeacion Y El Ordenamiento Territorial (SIG-OT) <http://sigotn.igac.gov.co/sigotn/>.

⁵⁰ Data downloaded from Sistema de Informacion Geografica Para La Planeacion Y El Ordenamiento Territorial (SIG-OT). <http://sigotn.igac.gov.co/sigotn/>.

also lead to an increase in environmental and social conflicts which could potentially create huge social and commercial costs.

Fig. 8: Overlaps between economic concessions, indigenous communities & land reserves in Colombia

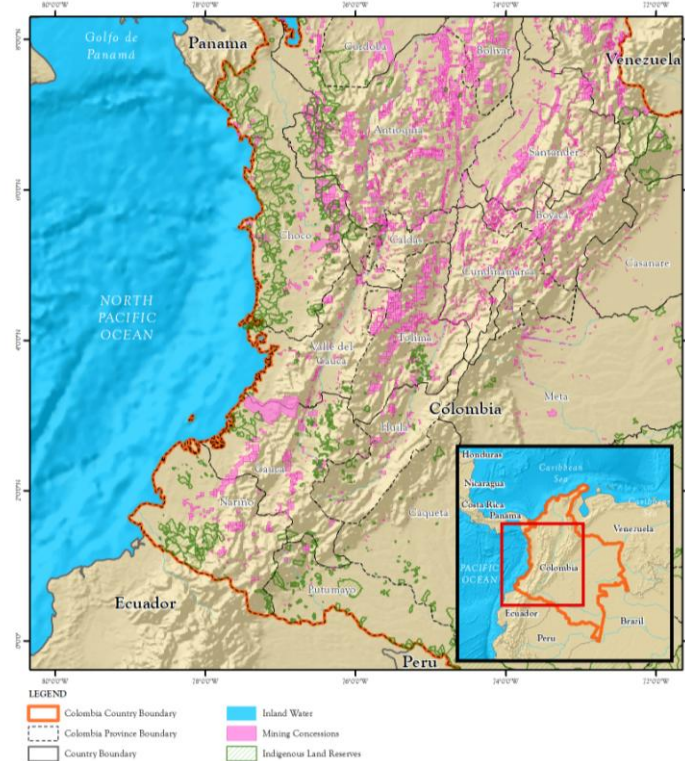


Table 10: Summary of mining overlaps in Colombia

	Mining licenses with overlap (ha)	Indigenous land overlap (ha)	Impairment
Colombia	997,433.20	336,173.86	6.3%

As with the other mining-related examples in this paper, we have been unable to quantify potential impairments based on overlapping acreage, and so provide an example of a large project that has gone awry as a result of non-consultation with local communities.

In 2009 Muriel Mining Corporation (MMC) was taken to the Colombian Courts by Indigenous and Afro-Colombian communities in Jiguamiandó, Chocó, for failing to properly consult with the communities regarding its Mandé Norte copper-gold-molybdenum exploration project. This project has so far received about \$24 million of investment from backer Rio Tinto, little of which has been spent on exploration or other mining related activities, but much on costs associated with the legal challenge⁵¹.

The presence of the project had led to the militarization of the area and human rights abuses. The case reached the Constitutional Court who ruled in October 2009 that the Free Prior and Informed Consultation process had not

⁵¹ <http://finance.yahoo.com/news/santa-fe-enters-letter-intent-131500112.html>.

been adequately carried out. The Court's decision added that in the case of large-scale development or investment with a major impact on Afro-descendent and Indigenous territories, their free, informed and prior consent must be obtained, in accordance with their customs and traditions. It seems unlikely that this will be achievable and the project has progressed no further.

INDONESIA

Indonesia experiences similar conflicts, usually arising between the government and indigenous communities. These tend to occur because state-created property rights overlap with customary (*adat*) rights. State forestry laws and maps are used to define and claim commercial exploitation rights, while indigenous communities claim that *adat* rights give them title over the land that their ancestors have long lived on.

Our assessment focuses on palm oil concessions, since Indonesia is the world's largest producer of the commodity and there have been frequent, often long-term disputes over the use of land for plantations. The source for the concessions maps we have is Global Forest Watch version 2,⁵² with ancestral domain maps retrieved from Badan Registrasi Wilayah Adat (BRWA)⁵³, the Ancestral Domain Registration Agency of Indonesia. Unfortunately, only 25% of the 146 records in the registry have been mapped. We overlaid these two data-sets and came up with results shown below. Because we only used the 37 mapped ancestral domains in our analysis, we expect that the value of the impediment could be much higher; in Kalimantan alone, 15 of the 16 ancestral domains have overlaps with oil palm concessions (Fig. 9).

Fig. 9: Overlap between oil palm concessions and ancestral domain claims in Kalimantan, Indonesia



⁵² <http://www.gfw-beta.org/sources>: This dataset, produced by the Indonesia Ministry of Forestry, provides the boundaries of current or planned oil palm plantations in Indonesia. This dataset is known to be incomplete, but is currently the best available.

⁵³ <http://www.brwa.or.id/>.

Table 11: Summary of overlaps in Kalimantan

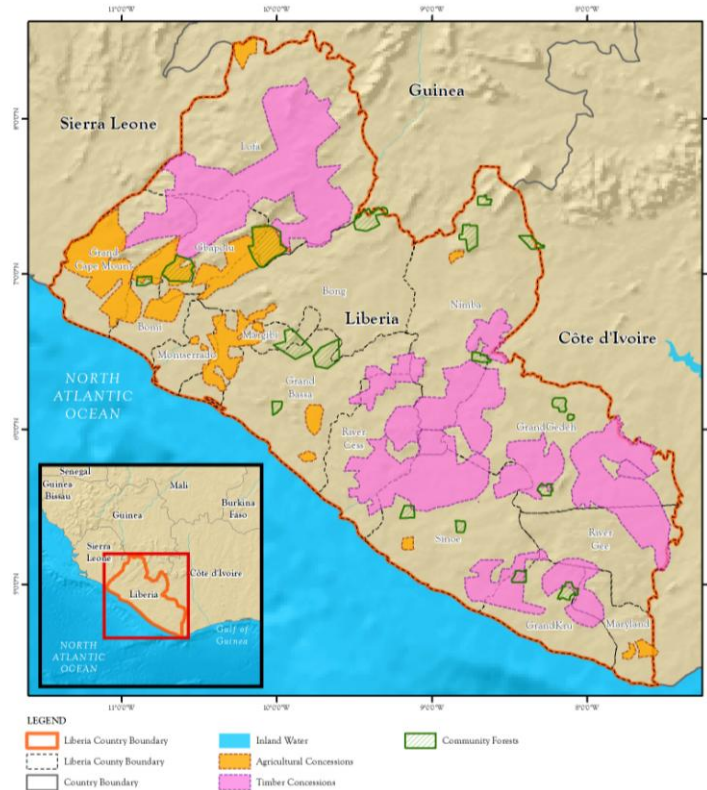
Crop	Affected concessions (Ha)		Indigenous land overlap		Impairment
	Area (Ha)*	Value (US\$)	Area (Ha)	Value (US\$)	
Palm oil	383,046	\$1,302,357,267	56,102	\$190,747,351	14.6%

LIBERIA

Instances of conflict between communities and large-scale agricultural concessions have recently brought the issues of land and rights into focus in Liberia. About 75% of the total land mass of Liberia is now thought to have been allocated to mining, rubber, oil palm and forest concessions⁵⁴.

To estimate the overlaps of these concession with community forests, we geo-referenced the image maps of agriculture and forest concessions, and community forest from the report *Forest resource assessments in Liberia* submitted by Metria AB in Sweden and GeoVille GmbH in Austria to the World Bank (Fig. 10). We cannot guarantee the accuracy of the estimates, however we are confident that this reflects the real trend. Based on our analysis of the spatial maps generated, we estimated a potential loss of 5% from the production of the concession due to these overlaps.

Fig. 10: Overlap between agricultural and forest concessions and community forests



⁵⁴ <http://www.rightsandresources.org/blog.php?id=1723>.

Table 12: Summary of overlaps in Liberia

Crop	Affected concessions (Ha)		Indigenous land overlap		Impairment
	Area (Ha)*	Value (US\$)	Area (Ha)	Value (US\$)	
Timber	310,258	\$187,468,576	78,720	\$47,565,430	25.4%
Cassava	2,578,381	\$201,113,753	18,321	\$1,429,022	0.7%
Total	2,888,640	388,582,329	97,041	48,994,452	12.6%

MALAYSIA

The State of Sarawak lies in the north-west sector of Borneo Island, with a land area of about 12 million hectares or 38% of the total land mass in Malaysia.⁵⁵ Sarawak is one of the few remaining growth areas for the crop in Malaysia as most of the available lands in the peninsular have already been planted with oil palms. Plantations are at about 920,000 Ha and growing at 10% per annum,⁵⁶ with government targeting 2 million Ha by 2020.⁵⁷ About half of this expansion is taking place on lowland peat soils and the rest in the once-forested interior where most land is the ancestral lands of the indigenous Dayak communities.⁵⁸

As profitable opportunities for developing State Land have been fulfilled over the past 20–30 years, attention has increasingly turned to the development of areas officially recognized as Native Customary Land.⁵⁹ The imposition of logging and oil palm plantations in Native Customary Lands have fuelled long term disputes between native communities companies leading to road blockades, arrests, settlements, and criminalization of community members. Native communities in Sarawak have filed some 100 outstanding cases claiming unfair breach of their rights by logging and plantation companies.⁶⁰ The most commonly cited cause for dispute between the groups is overlapping claim of the lands.^{61 62 63}

A case study Sarawak: IOI-Pelita and the community of Long Teran Kanan looks in some detail at oil palm concessions granted in 1996 to a local joint venture company Rinwood-Pelita on the middle Tinjar river in northern Sarawak which overlaps the customary lands of communities of the Berawan, Kayan and Kenyah peoples. The local enterprise

⁵⁵ Malaysian Timber Council. (2011) *Malaysia: Forestry and Environment* (Facts Figures). <http://www.mtc.com.my/info/images/stories/pdf/factsheets.pdf>.

⁵⁶ Cramb, R.A. (2013) *Palmed Off: Incentive Problems with Joint-Venture Schemes for Oil Palm Development on Customary Land*. *Journal of World Development*, (43) pages 84-89.

⁵⁷ http://news.mongabay.com/2010/1130-ncr_sarawak_palm_oil.html#yjrzkswtyhmvjuc.99.

⁵⁸ <http://www.forestpeoples.org/topics/palm-oil-rspo/publication/2012/free-prior-and-informed-consent-palm-oil-sector-sarawak-ioi-pe>.

⁵⁹ Cramb, R. A. (2011) *Reinventing dualism: Policy narratives and modes of oil palm expansion in Sarawak, Malaysia*. *Journal of Development Studies*, 47 (2), pp. 274–293 cited in Cramb, R.A. (2013) *Palmed Off: Incentive Problems with Joint-Venture Schemes for Oil Palm Development on Customary Land*. *Journal of World Development*, (43) pages 84-89.

⁶⁰ Colchester, M. & Fay, Chip. (2007) *Land, Forest and People- Facing the Challenges in South-East Asia. Final Report Rights and Resources Initiative Listening, Learning and Sharing Asia*.

⁶¹ Faeh, D. (2011) *Development of Global Timber Tycoons in Sarawak, East Malaysia: History and Company Profiles*. A report for Bruno Manser Fund, Switzerland.

⁶² Vaz, J. (2012). *An Analysis of International Law, National Legislation, Judgements, and Institution as they interrelated with Territories and Areas Conserved by Indigenous People and Local Communities. Malaysia*. Report No. 15. India: Natural Justice in Bangalore and Kalpavriksh in Pune and Delhi.

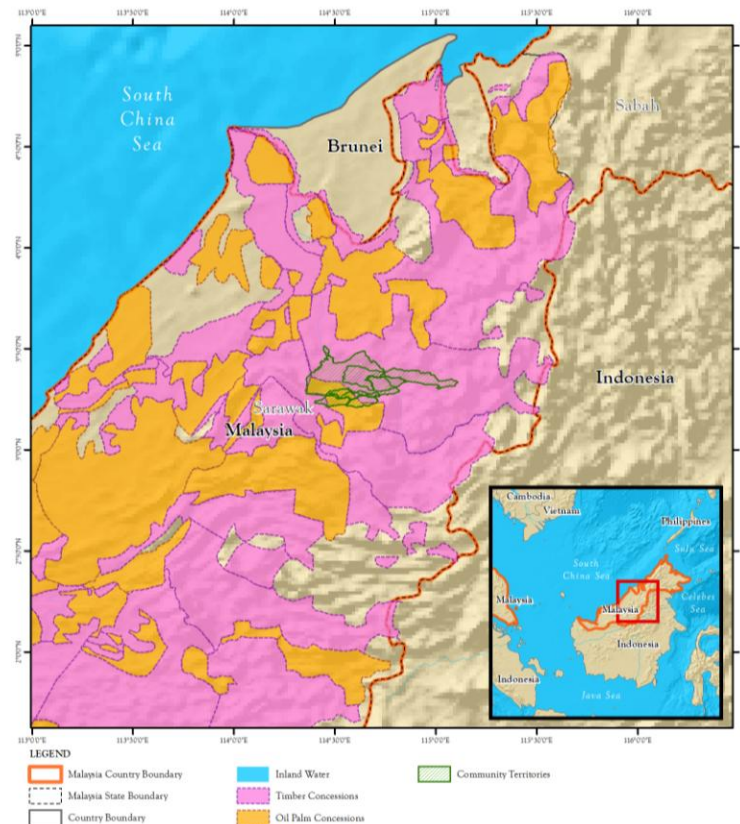
⁶³ Fox, J, Suryanata K, & Hershock, P. (2005). *Mapping Communities: Ethics Values, Practice*. Honolulu, Hawaii: East-West Center.

was acquired by the Malaysian transnational palm oil company, IOI, a prominent member of the RSPO, in 2006. The case is especially important as it not only reveals the complexities of law relating to customary rights recognition in Sarawak but also exposes the problems with four parallel systems of dispute resolution that are at play, including: the company's procedures; the national courts; the RSPO's grievance procedure and; the RSPO's Dispute Settlement Facility. Despite all these efforts, the dispute remains unresolved 16 years later.

To demonstrate the overlaps and estimate the potential cost of disruption to logging and plantation companies, we collected various maps of logging and oil palm plantations and community maps from different sources. While a number of community mapping efforts have been made in the State of Sarawak, access to the maps is limited. Hence, we have relied heavily on maps in image formats available in reports and on the internet.

We digitized these maps in ArcGIS 10 and analyzed the extent of overlaps. We focused our analysis in district of Bahagian Miri (Long Lama) as this is the area where available community maps are most comprehensive.

Fig. 11: Overlap between logging and oil palm plantations and community lands in Bahagian Miri⁶⁴



⁶⁴ Map digitized from various sources:
http://www.bmf.ch/files/news/Map_Samling_Road_Blockade.pdf
<http://www.forestsmonitor.org/uploads/fe2c2acf991103d520af678f9c75ff96/m1.gif>
<http://aliran.com/wp-content/uploads/2011/04/Brimas-Map-of-Forest-Use-in.jpg>
http://www.bmf.ch/files/news/Karte_Penan_Landrechtsklagen_mittlerer_Baram.pdf

Table 13: Summary of overlaps in Bahagaria Miri

Crop	Affected concessions (Ha)		Indigenous land overlap		Impairment
	Area (Ha)*	Value (US\$)	Area (Ha)	Value (US\$)	
Forestry (timber)	931,730.39	\$1,196,493,199	81,415.18	\$104,550,320	8.7%

MOZAMBIQUE

In the past decades there has been a huge increase in demand for agricultural and commercial lands driven by overall increases in key commodities demand attributable to population and income growth, and biofuel mandates.^{65 66} Because of these, greater trade led to shifts of production to developing countries, particularly in Africa, with high productive potential.⁶⁷ This interest in shift of production together with investor interest in African countries have been influenced also by weak land governance and poor recognition of local land rights⁶⁸.

Mozambique has total land area of 79.9 million ha. Of this land area, 4.9 million ha (6.12%) is devoted for agricultural and permanent crops production,⁶⁹ more than 90% of which is used by smallholder farmers.⁷⁰ Another 5.2 million (6.51%) ha is considered as arable land.⁷¹ At the beginning of the last decade, Mozambique became one of the prime targets of large-scale investments in agriculture, mainly because of biofuel production. From 2004–2009 over 400 projects of large-scale land acquisition were registered which accounted for a total of 2.6 million ha of arable land leased⁷². According to some reports, government officials mentioned that biofuel investors had applied for the rights to use some 4.8 - 6.0 million ha of land.⁷³

Similar to other countries, this land use allocation competes with pre-existing local claims on arable land and water resources.⁷⁴ It also offers great potential for future conflicts because land previously demarcated for or informally

⁶⁵ Friends of the Earth Africa and Europe (2010). Africa up for land grabs. The scale of impact of land grabbing and agro fuels. http://www.foeeurope.org/agrofuels/FoEE_Africa_up_for_grabs_2010.pdf

⁶⁶ Crabtree-Condor I & Casey L. (2012) Lay of the land. Improving land governance to stop land grabs. Action Aid International. <http://www.actionaid.org/publications/lay-land-improving-land-governance-stop-land-grabs>

⁶⁷ Deininger K et al. (2011) Rising global interest in farm land. Can It Yield Sustainable and Equitable Benefits? The World Bank

⁶⁸ Ibid.

⁶⁹ FAO Country Stat (2013). <http://faostat3.fao.org/home/index.html> Accessed August 19, 2013

⁷⁰ Land governance in Mozambique Advancing land-use rights and natural resource benefits http://www.deza.admin.ch/en/Home/Projects/Selected_projects/Land_governance_in_Mozambique Accessed August 19, 2013.

⁷¹ Central Information Agency, The World Fact Book. <https://www.cia.gov/library/publications/the-world-factbook/geos/mz.html> Accessed August 19, 2013.

⁷² Land governance in Mozambique Advancing land-use rights and natural resource benefits. http://www.deza.admin.ch/en/Home/Projects/Selected_projects/Land_governance_in_Mozambique. Accessed August 19, 2013.

⁷³ Mozambique offers Brazilian farmers 6 million hectares to develop agriculture. August 6, 2011. <http://en.mercopress.com/2011/08/16/mozambique-offers-brazilian-farmers-6-million-hectares-to-develop-agriculture>. Accessed August 19, 2013.

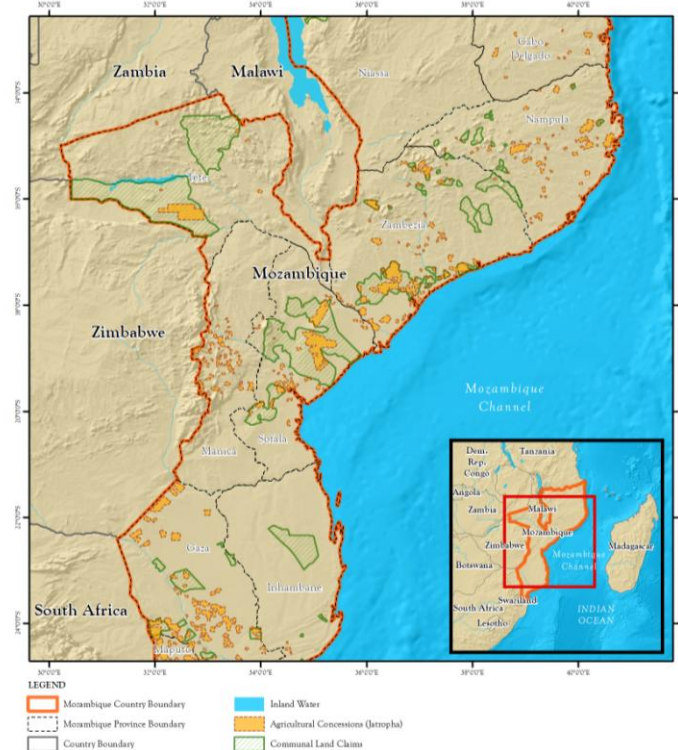
⁷⁴ McDougal T & Caruso R (2013). *Wartime Violence and Post-Conflict Development Policy: The Case of Agricultural Concessions in Mozambique*. Catholic University of the Sacred Heart, NEPS working paper series. Working paper 1/2013. http://www.europeanpeacescientists.org/1_2013.pdf Accessed August 19, 2013.

allocated to communities has been formally allocated to investors.^{75 76} This inability to determine the uniqueness of land rights is therefore likely to also reduce investors' ability to use the land as collateral for credit, more so leads to potentially large risks.⁷⁷

The report *Rising Global Interest in Farm Land: Can It Yield Sustainable and Equitable Benefits?* by the World Bank mentioned that only 12% of communities in Mozambique have their land demarcated. However, the total area over which land use titles given to investors overlapped areas previously delimited in the name of communities amounted to 1.4 million ha.

In our current assessment, we quantified and valued these overlaps. We digitized the map in the World Bank report (p 188) using ArcGIS and re-analyzed the overlaps. However, in the digitizing process some adjustments were done which explains why our reported hectareage is different, in this case lower and conservative. Using the country production value of Mozambique as reported in FAOSTat, we came up a total production value of US\$68.8 million, assuming that all land concessions are planted with jatropha (oil seed) as biofuel source. The overlapped areas have an estimated production value of US\$27.76 million which could bring a potential loss of 40%. It should be noted that these figures are based only on 12% of the communities that have been demarcated.

Fig. 12: Overlaps between areas of agricultural concessions and community lands in Mozambique



⁷⁵ Crabtree-Condor I & Casey L (2012). *Lay of the land. Improving land governance to stop land grabs*. Action Aid International. <http://www.actionaid.org/publications/lay-land-improving-land-governance-stop-land-grabs>

⁷⁶ Unruh JD (2001). *Land Dispute Resolution in Mozambique: Institutions and Evidence of Agroforestry Technology Adoption*. CAPRI Working Paper No. 12. International Food Policy Research Institute, Washington, D.C. http://www.capri.cgiar.org/pdf/Resources_Rights_Cooperation_B-07.pdf. Accessed August 19, 2013.

⁷⁷ Deininger K et al. (2011). *Rising global interest in farm land. Can It Yield Sustainable and Equitable Benefits?* The World Bank. http://siteresources.worldbank.org/INTARD/Resources/ESW_Sepr7_final_final.pdf

Table 14: Summary of overlaps in Mozambique

Crop	Affected concessions (Ha)		Indigenous land overlap		Impairment
	Area (Ha)*	Value (US\$)	Area (Ha)	Value (US\$)	
Agriculture	3,058,505.50	68,816,373.75	1,233,626.55	27,756,597.38	40%

PERU

The Peruvian Amazon covers approximately 78 million ha, or about 61% of Peru's territory. It is one of the most biologically diverse regions on Earth. Peru has several types of land designations including protected natural areas (ANP), permanent production forests (BPPs), indigenous territories, and mixed areas of State control or coastal communities. This covers approximately 15.5 million ha or equivalent to 19.8% of the Peruvian Amazon.⁷⁸

The new Forestry and Wildlife Law (N° 27308) issued in 2000 established the creation of BPPs intended exclusively for forest management. Each area was divided into smaller units, each approximately 5000 ha in size, which are auctioned off to private bidders in the form of forest concessions (FCs). These areas remain under State ownership with usufruct rights given to the concessionaires for up to 40 years. Individual concessionaires are allowed to accumulate a maximum area of 50,000 ha (10 FCs). In August 2009 there were 17.7 million ha of permanent production forests,⁷⁹ and as of December 2009, just over 7.5 million ha of forest were being managed in 588 concessions.⁸⁰ By far the largest areas under concession are located in the administrative regions of Loreto and Ucayali, which are located in the northeastern Amazonian region of the country. Together, the two regions contain more than two-thirds of the forest area under concession.

According to several reports, there are considerable overlaps reported between forest concessions, local customary rights, and indigenous peoples' claims to forest lands⁸¹. The Instituto del Bien Comun has documented the overlaps between industrial forest concessions, other extractive industries, and areas of recognized community and/or indigenous peoples' forest tenure, namely indigenous territories and reserves. Of the 581 concessions (as of August 2009) allocated in seven Amazonian administrative departments, there are 51 overlaps between these concessions: 47 with areas of titled or recognized native communities; 1 with ANP; 3 with indigenous people's territorial reserves. Due to the lack of GIS-based data of these concessions and indigenous territories, we geo-referenced the image maps available from <http://www.ibcperu.org/> (Fig. 13) and then overlaid these two maps to quantify their overlaps. As we had to generate the shapefiles of these data on our own based from information available, we cannot assure the high accuracy of the values used.

⁷⁸ Page 16, Molnar, A., K. Barney, M. De Vito, A. Karsenty, D. Elson, M. Benavides, P. Tipula, C. Soria, P. Sherman, and M. France (2011) *Large acquisition of rights on forest lands for tropical timber concessions and commercial wood plantations*, Rights and Resources Initiative contribution to ILC Collaborative Research Project on Commercial Pressures on Land, Rome.

⁷⁹ RAISG, 2012. *Amazonia under Pressure*. www.raisg.socioambiental.org.

⁸⁰ Forest Legality Alliance. Peru Production Status. Accessed on 15 July 2013 from <http://risk.forestlegality.org/countries/258/status>.

⁸¹ page 31 Molnar, A., K. Barney, M. De Vito, A. Karsenty, D. Elson, M. Benavides, P. Tipula, C. Soria, P. Sherman, and M. France (2011) *Large acquisition of rights on forest lands for tropical timber concessions and commercial wood plantations*, Rights and Resources Initiative contribution to ILC Collaborative Research Project on Commercial Pressures on Land, Rome.

Fig. 13: Overlap between forest concessions and community forests in Peru

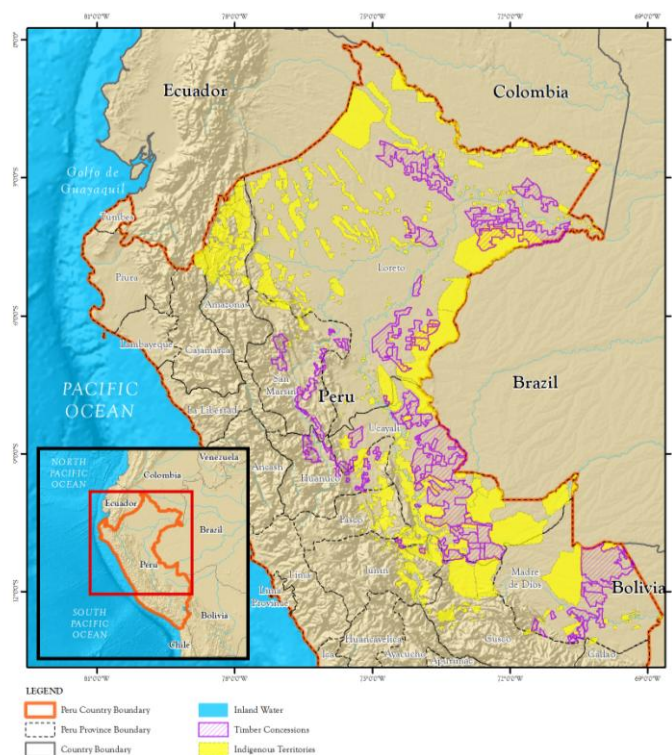


Table 15: Summary of overlaps in Peru

Category of indigenous land ownership	Timber concession area (ha)	Indigenous land overlap (ha)	Impairment
Demarcated and titled native communities	4,953,391.52	226,174.35	5%
Proposed reserves	1,080,803.66	666,079.59	62%
Territorial reserves	2,139,956.04	40,481.64	2%
TOTAL	8,174,151.23	932,735.57	
Value	\$3,012,742.97	\$343,777.90	11%

PHILIPPINES

The Philippine's total land area of about 30 million ha is divided into three categories:⁸²

- 14.19 million ha classified as Alienable & Disposable
- 15.05 million ha classified as Forest Land
- 0.76 million ha of unclassified forestland

The most recent data on land cover of the Philippines revealed that there are only 23.9% (7.17 million ha) remaining forest cover in the country⁸³; the primary drivers of deforestation are demand for timber and mining.⁸⁴

A number of forest management instruments have been set-up by the government to monitor timber production, including Timber Licensing Agreements (TLAs) established during the administration of Pres. Ferdinand Marcos. However, a “phase-out” policy of TLAs was adopted during Aquino administration because of its allegedly further contribution to deforestation. However, at least five TLAs were reinstated between 2005 and 2008, including those of Surigao Development Corp.⁸⁵ As of December 2011, there were three remaining TLAs with an aggregate area of 177,085 ha⁸⁶.

Community-based Forest Management (CBFM) is the Philippines’ main strategy for the sustainable development of its forest resources. The primary instrument of the program is the Community-based Forest Management Agreement (CBFMA) which has 1,790 agreements in 2011 with tenured area of 1.634 million ha. A total of 1,790 People’s Organization (POs) was involved in these projects, participated in by 322,248 households.

Despite efforts to manage dwindling natural resources, there are still various issues and complaints particularly from indigenous communities who lay claim to some forest land areas^{87 88 89 90} under the Indigenous Peoples' Rights Act (IPRA), which allows indigenous peoples to claim ancestral domains – these include not only the land but its resources as well.

To verify the claim of indigenous communities, we mapped out historical and current timber concessions, mining areas, approved claim of ancestral domain, and CBFM areas and analyzed the overlaps between these groups. Due to

⁸² Forest Economics Division 2011. Philippine Forestry Statistics. Forest Management Bureau, Department of Environment and Natural Resources, Quezon City, Philippines.

⁸³ FMB (FOREST MANAGEMENT BUREAU). 2007. *Philippine forestry statistics: forest cover within forest lands: 2003*. Forest Management Bureau, Department of Environment and Natural Resources, Quezon City.

⁸⁴ LASCO, R.D., VERIDIANO, R.A, HABITO, M., AND PULHIN, F.B. 2012. *Reducing emissions from deforestation and forest degradation plus (REDD+) in the Philippines: will it make a difference in financing forest development?* Mitig Adapt Strateg Glob Change. doi: 10.1007/s11027-012-9411-5.

⁸⁵ For more information see Pamintuan M. *Protect Philippine forests*. Philippine Daily Inquirer. June 5, 2011. <http://opinion.inquirer.net/5809/protect-philippine-forests>. Accessed 10 August 2013.

⁸⁶ See 1.

⁸⁷ *Respecting Indigenous Peoples' Sacred Sites*. <http://www.tebtebba.org/index.php/content/246-respecting-indigenous-peoples-sacred-sites>. Accessed August 10, 2013.

⁸⁸ *Philippines: Oil Palm Expansion Is Tearing Apart Indigenous Peoples Lives*: <http://intercontinentalcry.org/philippines-oil-palm-expansion-is-tearing-apart-indigenous-peoples-lives/>. Accessed August 10, 2013.

⁸⁹ *Oil palm company grabs Higaonon indigenous people's lands in the Philippines*. <http://www.engagemedia.org/Members/emnews/news/oil-palm-company-grabs-higaonon-indigenous-people2019s-lands-in-the-philippines>. Accessed August 10, 2013.

⁹⁰ *Mining applications ‘frozen’ after protest in Philippines*. <http://www.survivalinternational.org/news/6130>. Accessed August 10, 2013.

limited availability of data, we focus our analysis on timber agreements and mining areas in the Mindanao Island⁹¹. As the data we used were all digitized from static maps available from National Commission on Indigenous People (NCIP) and downloaded from Philippine Geoportal (<http://www.geoportal.gov.ph/>), we cannot guarantee accuracy of the estimates mainly due to error in digitizing.

Fig. 14: Overlaps between commercial concessions and indigenous communities in Philippines

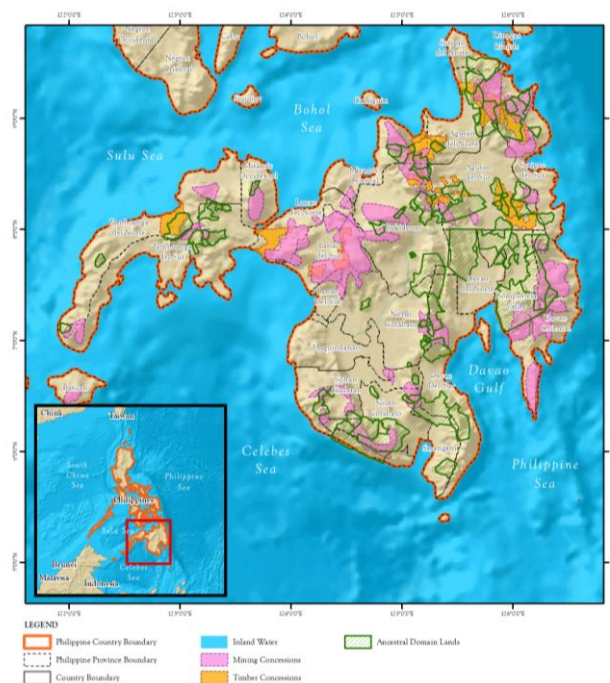


Table 16a: Summary of forestry overlaps in Philippines

Type	Affected concessions (Ha)		Indigenous land overlap		Impairment
	Area (Ha)	Value	Area (Ha)	Value (\$million)	
Timber License	505,281.83	127,583,660.97	169,066.89	42,689,390.88	33%

* As we digitized maps from static images, it is difficult to show individual value and information of each agreement/concession.

**Most of the CBFM areas coincide with claim of ancestral domain, hence were not included in the estimation to avoid double counting.

Table 16b: Summary of mining overlaps in Philippines

	Mining licenses with overlap (ha)	Indigenous land overlap (ha)	Impairment
Philippines	1,486,763.97	406,267.15	0.27%

⁹¹ There are also reports of claims on existing oil palm plantations overlapping with ancestral domain territories in the provinces of Bukidnon, Sultan Kudarat, Augusan, Cotabato and Palawan.

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Mining operations use the land conceded for their activities differently from agricultural or timber production. For a start, they do not tend to physically operate on the whole concession area, but focus on a smaller part that has the greatest potential to yield minerals. Thus, their interaction with both the land and the communities that occupy it is rather different. As noted in the examples above, impairments are more likely to come in the form of either physical blockading of infrastructure or legal challenges to the operator's license. A quantitative calculation of the possible impairment to production based on overlapping acreage would therefore not provide a representative assessment of the value at risk.

However, there is a strong example on our map above (fig. 14) of an individual project whose economic impairment could have fairly catastrophic consequences at both regional and national level. The Tampakan project, if approved, would substantially increase the size of the Philippine mining sector. Sagittarius Mines, which is the government's contractor for the development and operation of Tampakan, projects investment of US\$5.9 billion to develop the mine. If developed, the mine could begin commercial production in 2016 and would become one of the top 10 copper mines in the world. The gross production from the mine could be US\$2 billion per year, which would add an additional 1% of GDP per year to the size of the mining sector.

The mining project overlaps in four ancestral domains, and the minimum of direct impact upon the indigenous community living on the site is an enforced relocation of around 3,000 people.⁹² Further concerns have been expressed around the destruction of livelihoods of up to 150,000 local farmers and water rights.⁹³

An in-depth report on the human rights impacts of the project by Institute for Development and Peace (INEF) describes a "volatile situation" in which

"The prospect of the project and the company's presence have triggered dynamics of militarization in the region and the escalation of violence [...] This brings about a situation in which a responsible open-pit mine of this magnitude does not seem feasible."

In INEF's view, the risks of violent conflict⁹⁴ and human rights abuses are so severe that it calls for intervention from the home governments of the project sponsors, Xstrata and Indophil.

In short, a project with the potential to bring \$5.9 billion of foreign investment into the country and add 1% to the Philippines' GDP runs the real risk of failure because the government and the companies involved have not secured the agreement of the local people.

⁹² <http://unsr.jamesanaya.info/study-extractives/map/index.php/reports/view/69>

⁹³ <http://www.slideshare.net/no2miningph/to-mine-or-not-to-mine-the-case-of-the-tampakan-coppergold-project-mindanao-philippines>

⁹⁴ <http://davaotoday.com/main/2013/01/31/massacre-kin-killed-in-tampakan-mine-site/>

APPENDIX TWO

Mining and Water

Mining and water issues are very closely linked and critical for long-term sustainability.⁹⁵ In Chile, in which copper mining plays an integral role in its economy, water is becoming a major source of contention between the communities and the needs to meet export demands of copper.⁹⁶

For instance, a demonstration of more than 100 environmental, social and indigenous organisations protested in the Chilean capital, Santiago, demand that the state regain control of the management of water, which was privatised by the then dictatorship in 1981. The latest setback for the organisations was a Supreme Court verdict that ruled it was not illegal for a mining company to not pay for extracting groundwater on land it had been granted under concession because it was merely "exploring" for minerals in the water, rather than "exploiting" the water.

According to the Water Code of 1981 which created the development of water markets and tradable water permits⁹⁷, if ground- or surface water is available within a basin, it may be appropriated freely and perpetually by an applicant⁹⁸. Due to greater demand of water-depleting industries like mining, the market transactions have been dominated by the wealthier buyers thus creating monopolization and overuse of the resource.⁹⁹ This eventually, could create environmental conflicts and a sharp decrease in the availability of water in the communities near mining areas¹⁰⁰.

Various phases of mining operations require different volumes of water, hence affecting the groundwater reservoir in different ways¹⁰¹. Because of the huge water requirement, mining areas are located strategically nearby water sources. For instance, mining areas in the regions of Biobio and La Araucania (Fig. 15) are situated very near major rivers (Rio Allipen, Biobio, Cautin, Lajao Tolten in dark blue lines) as opposed to the location of indigenous development areas (ADIs). In fact, indigenous communities located in ADIs do not have preferential rights among any other stakeholders to the establishment of water rights, mining, the management of forest and adjacent water resources¹⁰².

⁹⁵ Mudd G (2008). Mining, Water Resources and Sustainability: Some Ongoing Research Ideas #2 PECC Noumea Water Resources Seminar. May 26, 2008. Accessed on September 5, 2013, http://www.pecc.org/resources/doc_view/1119-mining-water-resources-and-sustainability-some-ongoing-research-ideas-2. 26 May 2008.

⁹⁶ The Guardian. Mining and logging companies 'leaving all of Chile without water'. April 24 2013. Accessed September 4, 2013, <http://www.theguardian.com/global-development/2013/apr/24/mining-logging-chile-without-water>.

⁹⁷ Wikipedia. Water resources management in Chile. Accessed September 4, 2013, http://en.wikipedia.org/wiki/Water_resources_management_in_Chile#cite_note-14.

⁹⁸ Leon A, Vergara J, Yanez N, Barros A, Fuster R, dela Fuente A, Gentes I, Leon P, Castillo Y, Lillo G, and Maldonado D. Water Rights and Irrigation for Indigenous Communities in the Chilean Altiplano. Mountain Research Initiative Newsletter no. 3 October 2009.

⁹⁹ *Ibid.*

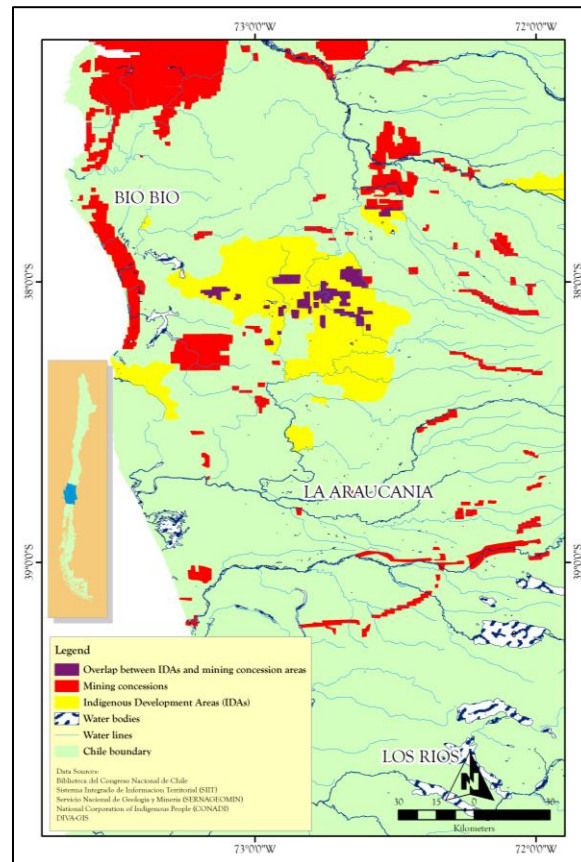
¹⁰⁰ A case study in Altiplano, Chile revealed that communities report excessive pumping from the aquifers, beyond the amounts granted to the mining companies by the DGA. These communities abandoned their land because of the lack of water due to excessive water extraction by the mine. This situation has also affected animal husbandry since the bofedales, extensive pastures in the Altiplano, have gone dry because of over pumping from the aquifers for the mine. See Yándz, N. and Molina, R. _008. La Gran Minería y Derechos Indígenas en el Norte de Chile. Editorial LOM. Santiago de Chile.

¹⁰¹ Slagle S, Lewis B, & Lee R. Ground-Water Resources and Potential Hydrologic Effects of Surface Coal Mining in the Northern Powder River Basin, Southeastern Montana. United States Geological Survey Water-Supply Paper 2239.

¹⁰² Perez de Arce MG (2011). Protected Areas and Indigenous Peoples in Chile. Master's Thesis. Geography, Urban and Environmental Studies. Concordia University Montréal, Québec, Canada.

Based on our own spatial analysis, we found out that mining areas cover approximately 3,268.89 ha (3% of the total water source) of water sources in the regions while IDAs has about 1,075.54 ha (1% of the total water source). Furthermore, we also found out that about 1% (21 ha) of the water source of mining areas overlaps with water source of IDAs. While the amount of overlap between water source of mining areas and IDAs seems to be 'small' - partly due to data availability, it should be noted that huge water withdrawal for mining operations in other major rivers and water sources could significantly affect the flow, availability and quantity of water source in indigenous territories.

Fig. 15: Mining concession areas, indigenous communities and water bodies in Biobio and La Araucania



In Philippines, water issues related to mining including contamination of water bodies and reduction of ground water depth and supply¹⁰³ are not uncommon.

The case of Rapu-rapu Island under Lafayette Mining is an example. The company started commercially operating in May 2005 and has incurred at least four fish kills in the surrounding waters, reaching as far as Albay Gulf. In April 2008, Lafayette declared bankruptcy and sold the project to Korea Resources Corporation, LG International, and Malaysian Smelting Corporation. By 2009, the new foreign owners resumed mining operations.¹⁰⁴

¹⁰³ Use geohazard maps to prevent mining disasters, environmental alliance urges. January 23, 2010. http://services.inquirer.net/mobile/10/01/23/html_output/xmlhtml/20100123-249021-xml.html

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Many mining concessions in the country are located in the forest. Through the Mining Act of 1995, mining companies are given timber and water rights, which allow them to cut trees and extract water inside their concessions.¹⁰⁵ ¹⁰⁶ As much of the indigenous peoples' land claims are in areas of forest that are rich in natural resources, conflicts often arise with companies.

In Mindanao island in the Philippines, we found out that mining areas cover around 2,596.15 ha (4% of the total) of water bodies including lakes and major rivers. On the other hand, the indigenous land claims have about 2,596.15 ha (2% of the total). With regards to waterlines (streams, small rivers, creeks) mining areas encompass approximately 1,341.29 km while indigenous land claims have 2,012.53 km. Although there is no physical overlap between mining areas and indigenous land claims in water bodies; there is approximately 26% of waterlines under mining areas that are located in indigenous land claims¹⁰⁷.

In Colombia, large-scale mining is officially considered one of five engines of its economy¹⁰⁸. Concurrent with mining boom in Colombia is the increase in the number of controversial concerns ranging from environmental problems to community consent facing the mining sector.¹⁰⁹ In late 2012,

... "Colombia Solidarity Campaign, London Mining Network and War on Want issued an urgent action request asking people to write to the mining companies involved at the Cerrejon coal mine in La Guajira, and to the Colombian government, objecting to the mining company's planned diversion of the River Rancheria, the only river of any size in La Guajira, so that the massive opencast operations can expand even further and gain access to 500 million extra tonnes of coal¹¹⁰".

The main reasons for the protests are the poor air quality, water contamination, losses of both soils and forests, and large water footprint.¹¹¹

In Colombia, our analysis showed that active mining titles cover around 38,681.75 ha (14% of the total) of water bodies including lakes and major rivers. On the other hand, the indigenous land claims have about 267,421.44 ha (18% of the total). The waterlines (streams, small rivers, creeks) in mining areas encompass approximately 4,875.36 km while indigenous land claims have 16,824.81 km. Furthermore, about 1% of water bodies and 4.44% of water lines in mining areas are also located in indigenous land reserves.

¹⁰⁴ Center for Environmental Concern Philippines. *Arroyo's Legacy, Aquino's Burden: The State of Philippine Environment*. Accessed September 5, 2013. <http://www.cccphils.org/node/101>.

¹⁰⁵ *Ibid.*

¹⁰⁶ Pamintuan M. *Protect Philippine forests*. Philippine Daily Inquirer. June 5, 2011. <http://opinion.inquirer.net/5809/protect-philippine-forests>. Accessed 10 August 2013.

¹⁰⁷ Spatial data on water bodies and water lines are download from DIVA-GIS. <http://diva-gis.org/gdata>.

¹⁰⁸ Cited on page 4. U.S. Office on Colombia. 2013. *Large-scale mining in Colombia: Human rights violations past, present and future*.

¹⁰⁹ *Colombia halts mining multinationals in indigenous territory* - <http://www.lifemosaic.net/eng/news/colombia-halts-mining-multinationals-in-indigenous-territory/#sthash.ui1Pn0v9.dpuf>.

¹¹¹ *Environmental Justice Organizations, Liabilities, and Trade. The Colombian mining locomotive has halted*. February 14, 2013 <http://www.ejolt.org/2013/02/the-colombian-mining-locomotive-has-halted/>. Accessed September 5, 2013.

APPENDIX THREE

Contrasting systems of land tenure: Mexico and Indonesia

Mexico's *ejido* system

The *ejido* system of land tenure is unique to Mexico and goes back to the pre-conquistador administration of the Aztec. It was first reinstated in the 1917 Mexican constitution and significantly broadened in the 1970s by Echeverria, who believed that it would meet Mexico's growing demand for food.

In essence, an *ejido* is a set of village lands, communally held but with individual use. The *ejido* consists of cultivated land, pastureland, other uncultivated lands, and the *fundo legal* (townsite). In most cases the cultivated land is divided into separate family holdings, which cannot be sold although they can be handed down to heirs. In order to maintain the usufruct licenses, the land must be worked regularly.

Although land holdings have been diluted through inheritance by multiple siblings, the practical success of the *ejido* is down to the cooperatives through which they are managed. There are structural advantages granted to cooperative *ejidos*, including access to cheap credit from the National Bank of Rural Credit which has allowed cooperatives to invest in improved tools and practices. Some of the most successful *ejidos* are in forest areas, where much time and resource has been spent in capacity and skill building,¹¹² with positive outcomes for both practice profitability and sustainable forest use.

Examples of the system working in practice include the recent resolution of a dispute between the Ejido La Sierrita de Galeana and Excellon Resources.¹¹³ The community had granted a mining license to the Canadian firm but has withdrawn it after the company failed to abide by the land rental contract and to repair damages that have been caused by its activities. This is a legal dispute over contractual obligations, rather than a fight for the recognition of the community's tenure rights. The case is still in court, but the robustness of the *ejido* system, the well-organized nature of the community and the fact that the rental agreement is brokered with them rather than the government means that this dispute is much clearer cut than many others we cite in this paper.

There are many successful community forest enterprises (CFEs) in Mexico and the state is making moves to further the potential for profitably run community cooperatives. The government has created a Forest Investment Plan that will extend cut-rate credit lines from foreign lenders to support Community Forestry Enterprises¹¹⁴.

A fine instance of the positive environmental and economic outcomes of the well-organized *ejido* is the San Bernandino de Milpillas Chico (SBMC), a community-owned and managed forest company.¹¹⁵ With technical assistance from Rainforest Alliance and funds raised from the community itself and external investors, SBMC has taken control of its forest, reduced deforestation impact of tree harvesting and added value to the wood it produces. The result is an enterprise that generates significant financial profit alongside positive social and sustainable outcomes.

¹¹² <http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/1028.pdf>

¹¹³ <http://www.newswire.ca/en/story/1204289/communal-landowners-reject-excellon-resources-offer-to-purchase-land-for-la-platosa-mine-in-mexico>

¹¹⁴ <http://www.trust.org/item/20130724165258-ytiyx/>

¹¹⁵ <http://www.rainforest-alliance.org/publications/san-bernadino-impacts>

Indonesia

Following the end of colonial rule by the Dutch, the government of Indonesia made an attempt to merge and harmonize the two sets of land law in place – a European version that applied to the Dutch colonists and *adat*, the customary Indonesian law that applied to indigenous communities. The Basic Agrarian Law (BAL, 1960) set about to unify this system with respect to land and agrarian issues, but decreed that the formal European law would take precedence if there were a conflict.¹¹⁶ So far, so bad. The *adat* law, however, offers protection for indigenous land rights where the colonial law does not.

Moreover, the constitution gives the state powers over the disposition and use of land, as made evident in widespread compulsory land acquisitions, both for State and private development projects.¹¹⁷ The government formalized this with its Land Acquisition Act, signed off by presidential decree in 2012, which allows for compulsory land purchases sanctioned by the state, mostly to allow foreign direct investment in infrastructure projects.¹¹⁸

Disputes over conflicting land claims are rife in Indonesia.¹¹⁹ In 2011, the National Land Agency reported 2791 disputes, while the National Commission on Human Rights noted that 738 land disputes generated 4502 formal complaints of rights abuses.¹²⁰ Anecdotally, the land disputes frequently involve extreme protest and violence. Take, for example, this protest in Jakarta against deforestation:

In December 2011, 28 protesters sewed their mouths shut in front of the parliament building in Jakarta and later threatened to blow themselves up if forcibly removed¹²¹

The tenure system in Indonesia has been variously described as “fuzzy,”¹²² and indigenous communities have few legal tools to assert their land rights. Aside from being a serious social problem, it makes foreign investment in infrastructure, extractive and agricultural projects in Indonesia difficult. There is a real but unquantified risk that a project could be severely delayed or even collapse because land tenure is simply not taken into account by the government when issuing concessions.

¹¹⁶ <http://www.landcoalition.org/sites/default/files/legacy/legacypdf/angoc/ch2/ch2p06.pdf?q=pdf/angoc/ch2/ch2p06.pdf>.

¹¹⁷ <http://www.eastasiaforum.org/2012/07/17/energy-food-and-climate-crises-are-they-driving-an-indonesian-land-grab/>.

¹¹⁸ http://www.gbgindonesia.com/en/property/article/2012/an_update_on_indonesia_s_land_acquisition_law.php.

¹¹⁹ https://openaccess.leidenuniv.nl/bitstream/handle/1887/19013/McCarthy,%20J.F.,%20J.A.C.%20Velper%20Q&%20S.%20Aiff,%202012,%20Trajectories%20of%20land%20acquisition%20and%20enclosure%205B1%205D_Redacted.pdf?sequence=8.

¹²⁰ <http://www.eastasiaforum.org/2012/07/17/energy-food-and-climate-crises-are-they-driving-an-indonesian-land-grab/>.

¹²¹ <http://www.time.com/time/world/article/0,8599,2106967,00.html#ixzz2b5PhLDe2>.

¹²² https://openaccess.leidenuniv.nl/bitstream/handle/1887/19013/McCarthy,%20J.F.,%20J.A.C.%20Velper%20Q&%20S.%20Aiff,%202012,%20Trajectories%20of%20land%20acquisition%20and%20enclosure%205B1%205D_Redacted.pdf?sequence=8.

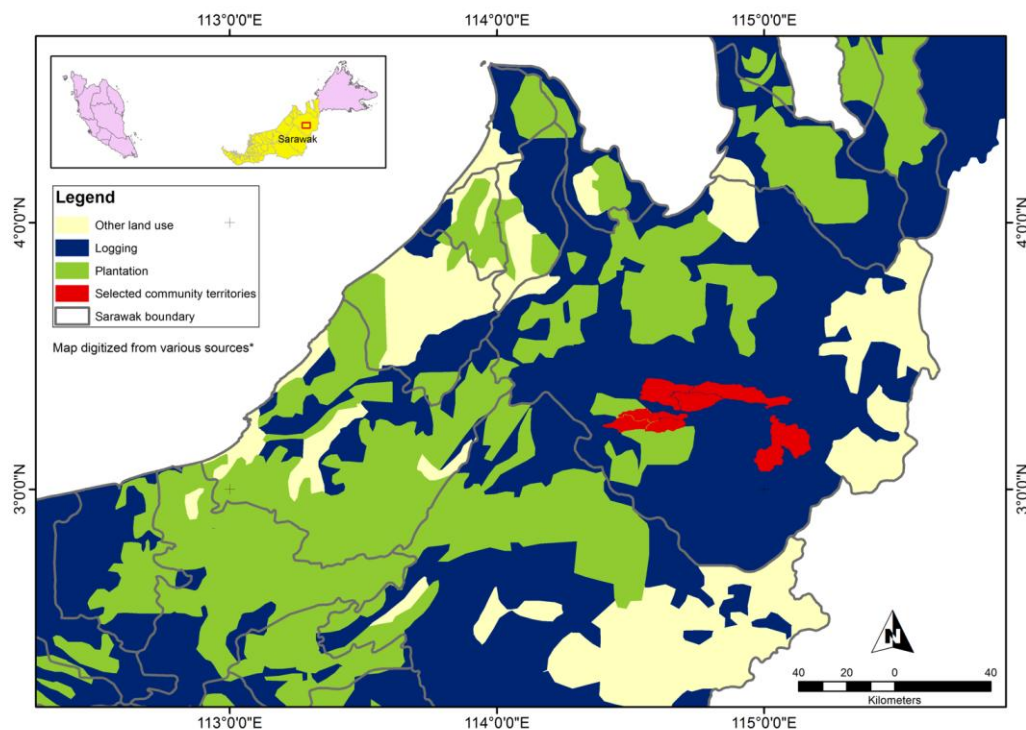
APPENDIX FOUR

Examples of the failure of existing tools for assessing land tenure risk

Palm Oil Plantation, Malaysia

IOI, based in Malaysia, is one of the world's largest palm oil producers and a member of the Roundtable for Sustainable Palm Oil (RSPO). Its IOI Pelita operation in Borneo, Malaysia, has been the subject of legal challenge by the local Kayan native community for the past 15 years, with courts judgments swinging back and forth between the Operator and the Community.¹²³

Fig. 16: Sarawak Province concessions and community map



Here is an extract from a report on the March 2010 High Court ruling, in favor of the Kayan:

In a judgment delivered earlier this week, the Miri High Court declared the land leases used by IOI "null and void" as they had been issued by the Sarawak state government in an illegal and unconstitutional way. According to the Borneo Resources Institute Malaysia (BRIMAS), the court granted Long Teran Kanan headman Lah Anyie and his community compensation for the damage done by IOI to their land.¹²⁴

¹²³ A detailed history of the dispute can be found here: <http://www.forestpeoples.org/sites/fpp/files/publication/2012/10/sarawak-ioi-pelita-and-long-teran-kanan-september-2012-2.pdf>.

¹²⁴ http://www.bmf.ch/files/news/BRIMAS_release_2010_03_31.pdf.

And this is from the most recent appeal, in July 2013, overturning the previous judgment:

*The Federal Court here yesterday dismissed an application by a group of Kayans from Long Teran Kanan in Tinjar for leave (or permission) to appeal against the decision of the Court of Appeal (CA) which held that they (Kayans) had no native customary rights (NCR) over two Provisional Leases issued to IOI Pelita Plantation Sdn Bhd for the development of an oil palm plantation.*¹²⁵

Clearly, there is sufficient uncertainty over whether or not IOI's use of the land is legal to make the risk of its project failing higher than usual. Whichever way the dispute is finally (if ever) resolved, there is a large risk to investors in IOI that it will see a loss of profit through cessation of its activities and possible further financial harm through having to pay compensation. Moreover, if it is found to be in breach of RSPO rules, certification could be withdrawn and its customer base damaged by the reputational fall-out.

Here's the rub, though: IOI is rated Baa2¹²⁶ by Moody's and the Malaysian government that grants the concession has a rating of A3,¹²⁷ both investment grade ratings suggesting a low risk of non-performance. Clearly, neither rating is a suitable proxy for land tenure risk.

Oil Concession, Peru

Block 64 is an oil concession of 760,000 hectares in the Loreto Province of Peru, which overlaps the ancestral lands of the Achuar community. Since the concession was granted to United States oil firm Arco in 1995, the license has passed through the hands of five oil companies, the last being Calgary-based Talisman Energy.

Block 64 is a highly prospective opportunity in terms of oil reserves. In its 2011 report, Talisman Energy ranked its Peruvian licenses third behind UK and Norway in terms of probable unexploited reserves;¹²⁸ one newspaper report values the reserves in Block 64 at \$4 billion.¹²⁹

In 2004 Talisman began drilling exploratory wells in a remote watershed in important community hunting and fishing grounds, despite strong opposition from the majority of Achuar people who live in Oil Block 64.

¹²⁵ <http://www.theborneopost.com/2013/07/04/federal-court-dismisses-kayans-ncr-land-appeal/#ixzz2aeywddoc>.

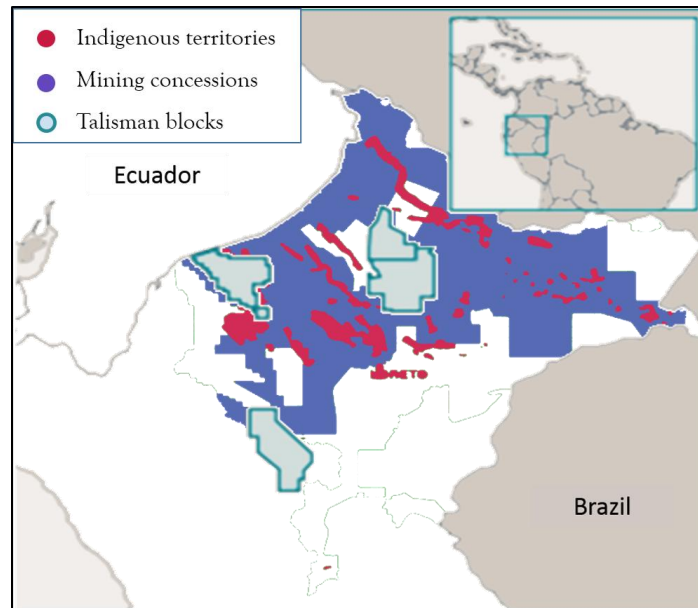
¹²⁶ http://www.moodys.com/research/Moodys-downgrades-IOI-Corporation-to-Baa2-outlook-stable-PR_273150.

¹²⁷ <http://www.moodys.com/credit-ratings/Malaysia-Government-of-credit-rating-460522>.

¹²⁸ http://www.talisman-energy.com/upload/ir_briefcase/147/03/annual-information-form.pdf.

¹²⁹ <http://www.theglobeandmail.com/news/national/the-age-of-extreme-oil-this-used-to-be-a-forest/article4186854/?page=all>.

Fig. 17: Community overlaps with oil & gas concessions in Loreto Province, Peru



The following quote from Achuar leader, Peas Ayui, makes clear the community's commitment to preventing oil and gas exploration on the land:

"We are the owners and the original people of this land. No outside person or company may enter our territory by force, without consultation and without asking us. We have been fighting against oil development on our land for 17 years and we maintain the same vision to protect our territory and resources for future generations. Let this be a clear message to all oil, mining and logging companies: we will never offer up our natural wealth so that they can extract our resources and contaminate our land."¹³⁰

The Achuar opposition to drilling was well organized, gained significant shareholder support and important backing from the highly influential First Nations lobby in Talisman's native Canada.

To cut a long story short, global oil & gas company Talisman Energy (Moody's rating Baa2, market cap CA\$12 billion) walked away from \$4 billion worth of oil because it was unable to come to terms with the local community. Aside from the opportunity cost of withdrawal, Talisman certainly spent many millions of dollars in exploration costs to prove the 42 MMbl of oil in the concession.¹³¹ If the land tenure risk had been properly factored in, Talisman would surely have done things differently.

¹³⁰ <http://amazonwatch.org/news/2012/0913-talisman-energy-withdraws-from-peruvian-amazon>.

¹³¹ http://www.worldoil.com/Petroperu_plans_to_take_over_former_Talisman_concession_in_Peru.html.

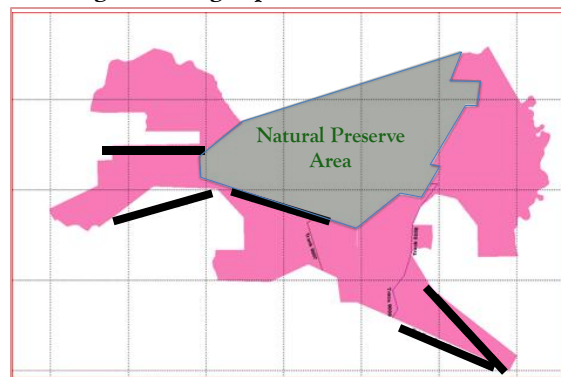
Sugar Plantation¹³²

Consider a concession with a long-term right to exploit approximately 21,000 hectares of land, granted by a national government for cultivation of a globally traded commodity. The country in question has a preferential export scheme with the European Union, which applies to the commodity being produced.

The investment would be an attractive opportunity under many scenarios: depending on variables like price and yield, our modeling estimates an annual revenue stream of US \$18-22 million, with operating expenditures of roughly \$15-16 million.

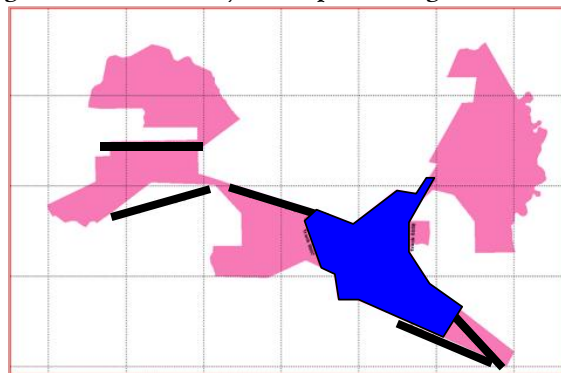
The concession area granted is displayed in pink below. The green area bordered by the concession to east, south and west is a natural preserve. Since the national government made specific efforts to wrap the concession around this area, one might presume that similar considerations were made for land rights (the black bars were inserted to obscure the concession name).

Fig. 18a: Sugar plantation concession



But this concession has a significant problem: there is group of villages bordering the concession. Their territorial claims equal 4,302 hectares, which amount to around 20.7% of the concession acreage. The total area of overlap is shown in blue and it cuts the concession in half:

Fig. 18b: Community overlap with sugar concession



¹³² This example was provided by a non-profit group concerned about divulging their activities and data sources because of the potential for violent repercussions. We have therefore anonymized the source. From a certain perspective, this illustrates the challenge investors face: in a country where even non-profit groups have a hard time analyzing data for research purposes, one can imagine the difficulties faced by outside actors considering revenue-generating activities.

The Munden Project

The immediate risks to the overlap area are obvious. Should a situation arise in which the communities disrupt production, we estimate \$4 to 5 million of lost revenue without a corresponding decline in operational expenditure, all of which serves to evaporate net margins.

There is also the issue of transport. Inside the concession, some of these communities also have effective control of the roads that connect the east and west sections of the concession. Outside the concession, they have effective control of the road that connections the entire concession to export terminals.

If a situation arose in which the communities made it impossible for the operator of the concession to use the roads, the only other alternative for transporting equipment, materials and personnel within the concession would be by river. Since river passage is dependent upon a government-backed monopoly, and one with the highest freight charges in the region and a reputation for non-performance, this is a very poor option.

In other words, the land tenure conflict risk is far bigger than an issue of territorial overlap. It is true that 20.7% of the concession area may not be exploitable, which would effectively eliminate profitability in whichever year (or years) the conflict happened.

But what would steer anyone away from this investment is the fact that 100% of the concession's production is exposed to conflict risk, insofar as a conflict would require the concession to shift away from road transport and towards an unreliable, expensive monopoly transit system.

Based on Rights and Resources Group's estimates, community mapping effort for a concession like the one shown above would cost no more than \$65,000 and take less than two months to complete, all of which could be done alongside other diligence processes. This is a price well worth paying if it can help prevent a conflict with such substantial impacts.