

# International Financial Flows and the Environment

*Best Practices for  
Transnational Investment in Extractive and Land Use Sectors*



**School of International Service  
American University**

# Foreword

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With the wave of globalization and the empowerment of civil societies around the world, foreign investment has become an increasingly important issue due to the inherent social and environmental impacts that foreign companies inflict upon the local communities in which they operate. The results of foreign investment are complicated: some investment improves local economic, environmental, and social conditions, while other investment leads to tensions between transnational companies and local communities. There are currently few broadly agreed-upon standards that guide how foreign companies should invest and behave in host countries in order to achieve not only business benefits, but also social responsibility and environmental sustainability.

This portfolio of best and worst practices of foreign investment exhibits both positive and negative cases of foreign investment. This document is the cooperative product of the World Resources Institute (WRI) and the American University (AU) practicum team. IFFE's Senior Associate, Mr. Hu Tao, and Research Analyst, Denise Leung, worked closely with the practicum team to develop the project. The AU practicum team consisted of professors Dr. Ken Conca and Dr. Judy Shapiro and eleven graduate students: Stephanie DaCosta, Kristin DeValue, Hilary Kirwan, Lauren Lane, John Noel, Sebastian O'Connor, Schuyler Olsson, Jen Richmond, Natnari Sihawong, Toussaint Webster, and Yuxi Zhao.

In March 2013, the AU practicum team travelled to Beijing, China, to present their initial research and coordinate with a WRI partner research team from Beijing Normal University.

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# Synopsis

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The American University team's research covers case studies of investment projects within the mining, energy, and land use sectors in Africa, Southeast Asia, Europe, Oceania, and Latin America. We present best and worst business practices in accordance with social and environmental safeguards. Our recommendations propose an alternative for foreign companies: build a strong partnership with local communities and raise social and environmental standards when investing abroad. The following themes represent key elements of best practices for foreign direct investment (FDI).

## 1. Stakeholder engagement

It is becoming increasingly important for companies to implement effective stakeholder engagement when investing in a foreign country. Although stakeholder engagement is not a new concept, the business landscape is increasingly demanding greater accountability. Companies must respond to pressures from governments, international institutions, and civil society. As a result, top business leaders are now considering stakeholder engagement as a way to mitigate risks and increase operational performance. Yet not all companies have incorporated stakeholder engagement into their business practices, which can affect their profitability.

Stakeholder engagement is a key process in mitigating environmental and social impacts and can lead to collaborative solutions to improve company performance.<sup>1</sup> According to AccountAbility, a sustainability consulting firm based in London, "stakeholder engagement is the process used by an organization to engage relevant stakeholders for a clear purpose to achieve accepted outcomes. It obliges an organization to involve stakeholders in identifying, understanding and responding to sustainability issues and concerns, and to report, explain and be answerable to stakeholders for decisions, actions and performance."<sup>2</sup> Stakeholders are actors that are affected by a company's operations or those that can affect a company's operations and performance. These actors may be individuals; local communities; non-governmental organizations (NGOs); businesses; international institutions; and/or local, municipal and federal governments. The case studies in this report will each refer to the types of stakeholders relevant to their specific cases.

When considering an effective stakeholder engagement framework, it is best to consider certain policies and procedures to mitigate environmental and social harm. The following are the most notable aspects of stakeholder engagement to consider:

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<sup>1</sup> Ceres, "Stakeholder Engagement," accessed April 20, 2013, <http://www.ceres.org/company-network/how-we-work-with-companies/stakeholder-engagement>.

<sup>2</sup> AccountAbility, *AA1000 Stakeholder Engagement Standard 2011*, last modified 2011, accessed April 20, 2013, <http://www.accountability.org/images/content/3/6/362/AA1000SES%202010%20PRINT.PDF>, 6.

## 1.1 Identify stakeholder and relevant issues

Identifying the company's relevant stakeholders is a critical step in implementing an effective stakeholder engagement strategy. In every project, there are multiple stakeholders with conflicting needs and interests. It is difficult to assume the priorities of stakeholders because not all actors in a particular group or community will share the same interests.<sup>3</sup> By investing time to identify and prioritize stakeholders throughout the project, the company will be able to better manage potential conflicts, reputational risk, and the interests of all parties involved.

Large extractive projects, like many of the case studies in this report, both directly and indirectly affect a wide range of stakeholders. Extractive projects tend to operate near or within marginalized or disadvantaged communities, such as the Amazonian indigenous tribes of the Camisea Natural Gas Project case study, which are vulnerable to environmental harm. It is important for companies to identify and understand these stakeholders' interests, legal rights, and cultural contexts, because engagement and quick response leads to inclusion and a greater sense of accountability and transparency.

## 1.2 Show transparency and accountability throughout operations

To avoid conflict with relevant stakeholders, the company should demonstrate transparent activities and approaches towards engagement. Through different techniques like information sharing and consultation, participatory approaches (See recommendations in the Sime Darby in Liberia case study), negotiations, and culturally sensitive meetings, companies can exhibit openness and trust. A company's failure to adhere to its commitments, as in the case of BHP Billiton Mitsubishi Alliance in Australia, could anger important stakeholders and negatively affect the company's reputation.

When companies take steps to be accountable for the impacts they have on the natural environment and local communities, it sends a positive message to its stakeholders (See Starbucks and Conservation International's C.A.F.E. in Latin America case study).

## 1.3 Ensure free, prior and informed consent (FPIC) and encourage participation

Companies that implement and utilize 'free, prior, and informed consent' (FPIC) are able to mitigate future risks and operate with greater security. FPIC ensures that stakeholders are informed and integrated into the decision-making process when a proposed project could affect their livelihoods.<sup>4</sup> FPIC allows for greater inclusivity and could lead to a decrease in social conflicts.

## 1.4 Offer a grievance process for disadvantaged stakeholders

Extractive projects are disruptive and prone to cause negative impacts on local stakeholders. Whether through negative environmental impacts at the community level or social impacts that internally affect

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<sup>3</sup> IFC, *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets*, last modified 2007, accessed April 20, 2013, [http://www1.ifc.org/wps/wcm/connect/938f1a0048855805beacfe6a6515bb18/IFC\\_StakeholderEngagement.pdf?MOD=AJPERES](http://www1.ifc.org/wps/wcm/connect/938f1a0048855805beacfe6a6515bb18/IFC_StakeholderEngagement.pdf?MOD=AJPERES), 7.

<sup>4</sup> Forest Peoples Programme, "Free, prior and informed consent (FPIC)," accessed April 20, 2013, <http://www.forestpeoples.org/guiding-principles/free-prior-and-informed-consent-fpic>.

employees, establishing grievance mechanisms can help stakeholders voice their complaints in an organized and transparent manner. This can also help companies establish and maintain better relationships with stakeholders.<sup>5</sup>

### **1.5 Compensate disadvantaged stakeholders in a just and culturally sensitive manner**

Being able to compensate disadvantaged stakeholders in a just and culturally sensitive manner allows for greater transparency and accountability throughout a company's operations. Many of the following case studies will highlight issues concerning land rights or the lack thereof. Without proper, culturally-sensitive compensation for affected communities, social conflicts are more likely to arise, creating project delays and negative impacts on the company's long-term profitability.

Select case studies in this report will further examine specific companies' best and worst environmental practices and how stakeholder engagement can play a key role in creating a positive outcome.

## **2. Consider geopolitical climate in host countries prior to investment**

Although global capital tends to concentrate in places where investment can generate high profits, the following case studies demonstrate that multinational companies exercise high-risk behavior when investing in host countries which have endemic corruption, civil conflicts, human rights abuses, undefined or unenforced laws and regulations, and generally poor governance. Companies would benefit from evaluating a potential host country's geopolitical climate before committing to a project.

First, operating in countries during times of war, violent conflict, or political upheaval and strife is almost always a high-risk option and should be avoided when possible. As is demonstrated in the following case studies, violent conflict complicates daily operations for businesses, places employees in danger, and can potentially exacerbate difficult geopolitical situations on the ground. For example, Lundin Petroleum continued operating in Sudan during the country's second civil war and government-led genocide as almost all other western companies withdrew from the region, and Freeport McMoRan mining company remained in Indonesia during conflict propagated by the country's government and eventually the company itself. This inaction to disengage from violent geopolitical landscapes in which projects have been developed has caused financial and reputational long-term damage to companies.

Second, countries exhibiting resource curse symptoms may prove more difficult environments in which to invest. According to the Center for Global Development, countries with vast natural resource reserves often suffer from poor governance in addition to high levels of poverty, corruption, and conflict. In addition, resource-rich developing countries typically depend heavily on that resource to contribute to national revenues, the military, and development. In these countries, rent-seeking behavior to collect resource profits without redistributing unearned resource income to local communities can also create inequity, and tensions may emerge due to a lack of benefit sharing.

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<sup>5</sup> IFC, *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets*, 6.

Therefore, investing in a country with a fairly diversified economy and good governance structure is essential to a company's success in that location. Countries that rely heavily on the export of raw materials for development should work judiciously to prevent corruption, resource-rent dependency, and inequitable distribution of resource wealth. Companies, for their part, should work to reinforce the principles of redistribution, transparency, and economic diversification by reinvesting resource wealth into diverse economic sectors within the host country.

### **3. Brand management**

An oft-neglected consideration in environmental and social best practices for companies engaging in foreign direct investment is brand management. As opposed to "greenwashing," which refers to companies' specious promotion and communication of environmentally friendly practices and materials, brand management is proactive. In brand management, competently maintaining the brand image is built into the company's management structure and strategic plan.

#### **3.1 Annual Corporate Social Responsibility Report**

Traditionally, companies with strong corporate social responsibility (CSR) standards and communications strategies have written a CSR component, which refers to the company's social and environmental sustainability practices, into their annual reports. As the concept of CSR becomes a global norm, companies with the will and capacity have begun to produce stand-alone CSR reports. CSR covers not only the company's environmental practices, but also the social impacts of operations both internally and on the populations in which the company's projects are embedded.

It should be noted that not all CSR reports are equally diligent and transparent in holding companies accountable. Some are written by companies' public relations teams, while others are written by third-party organizations. Certain companies produce CSR reports intermittently, while others release annual reports. Newmont Mining Corporation, for instance, produces an annual Sustainability Report, with subsections on Inspiring Our People (Labor), Community Relationships, Environmental Stewardship, Corporate Governance, and Value Chain Stewardship. Since it is written for the entire multinational corporation, crucial missteps are merely mentioned as teachable moments and not discussed in critical detail.

One of the benefits of a strong annual CSR report is transparency. When companies openly report on their environmental and social successes and failures, they improve outside perception of their operations. Companies with such transparency display intrinsic motivation to conduct best practices, thus strengthening their value for shareholders.

#### **3.2 Seek expert legal counsel to prevent litigation**

FDI is an exercise in which companies that are based in a country with one set of laws do businesses in a place that presumably has different legal standards. It is most important for investors to seek legal

advice when the host country's legal framework is expected to evolve over time or change rapidly.

For example, Lundin's operations took place in war-torn Sudan. Given the risky nature of the environment, the company should have sought expert legal counsel before entering. As a result, Lundin now faces years of brand-damaging legal investigations and pending international criminal prosecution. Such advice would have highlighted potential pitfalls and indicated how to follow Sudanese, Swedish, and international legal procedures and may have saved the company's reputation.

### **3.3 Risk management**

Companies initiating business in new markets must exercise due diligence in anticipating and planning around risk. As Environmental and Social Impact Assessments (ESIAs) evolve to become standardized, they must become more rigorous to best serve the shareholders. For example, Newmont Gold Ghana's ESIA covered the possibility of chemical spills at the company's mines and included an emergency response plan. Nonetheless in 2009, a cyanide spill occurred after heavy rain, costing the company millions of dollars in damages and jeopardizing its reputation. Details and speculation about the disaster were reported and exaggerated in dozens of media outlets. Though the emergency response was conducted considerably well, planning was not sufficient to prevent the spill. Proper management includes execution as well as sound strategy.

## **4. Sustainable community development**

With great power comes great responsibility. Transnational corporations must understand that, especially when investing in a weak state that is unable or unwilling to deliver development benefits to the local people, the responsibility of sustainable community development is partially the company's. This is clearly illustrated by Freeport McMoRan's investment in Indonesia, where an authoritarian dictator in Jakarta had intentionally marginalized the local Papuan communities; even with the subsequent rise of Indonesian civil society and a new government pushing development reforms, this burden remains with the company today.

Recognizing this responsibility, transnational corporations must enter the region with a well-defined plan to reinvest a meaningful portion of their profits into local community development. As extractive resource wealth is extremely lucrative but inherently limited as it is depleted, an emphasis should be made on building self-sustaining local economies by investing in infrastructure, health, education, and local employment and training programs. Investments should also be targeted at countries where the government already has an established national fund to redistribute resource wealth to communities in a transparent, equitable way, such as a Sovereign Wealth Fund or a similar mechanism for societal redistribution.

When designing and implementing community development programs, it is crucial to maintain close communication with the local people to understand their ongoing development needs; due to great cultural, social, economic, and political variation, no foreign entity can understand local needs without collaborating with people at the local level. As demonstrated by Freeport McMoRan's investment in



Indonesia, however, communication between communities and foreign corporations can be challenging due to vast power differentials and cultural or linguistic barriers. Thus, corporations should be prepared to engage in alternate forms of communication, and partnerships should be established with local NGOs and government authorities who have a better understanding of development needs and best practices in the region.

Local communities should not only be consulted about development projects, but also have a high degree of ownership over the disbursement of development funds. Corporations must also understand local power dynamics to ensure that funds are not misappropriated by a minority of powerful local individuals who do not represent the interests of the community. To accomplish this, fund allocation committees should be composed of freely elected community representatives, local government officials, and company employees—such as the Ahafo Social Responsibility Forum (see the Newmont Gold in Ghana case study) or the Amungme and Community Development Organization (see the Freeport McMoRan Mining in Indonesia case study).

Thus, with a high degree of local consultation, participation, and ownership over development funds, corporations are most able to establish sustainable economies that will last long after resource wealth has dried up. As demonstrated by several cases presented in this study, corporations failing to follow these guidelines have suffered significant financial and reputational consequences.

## **5. Abide by international best standards**

In an increasingly competitive market with a greater number of stakeholders who have immediate access to information, companies can no longer abide by the status quo in terms of environmental and social safeguards. An inability to follow or exceed international norms results in a riskier investment. Additionally, a host country's governance and capacity to enforce the law may be insufficient to prevent human rights violations and severe environmental degradation. In several of the following cases, environmental and social harm caused by foreign company operating procedures was in full compliance with the host countries' laws, suggesting a need to comply with higher standards. Many companies are releasing ambitious long-term goals and regulations for overseas investment in compliance with international norms. When developing strategies to reduce negative environmental and social impacts, a handful of international guidelines stand above the rest as "best practices."

### **5.1 Coalition for Environmentally Responsible Economies (Ceres)**

Ceres, an advocacy group that prompts investors, companies, and policymakers in its Ceres Coalition to adopt sustainable corporate practices, published a 10-point code of corporate environmental ideals known as the "Ceres Principles" following the 1989 Exxon Valdez oil spill.<sup>6</sup> In addition, it launched the Global Reporting Initiative (GRI), a non-profit organization harmonizing environmental, social, and economic performance reporting standards, in 1997.

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<sup>6</sup> Ceres, "The Ceres Principles," accessed April 20, 2013, <http://www.ceres.org/about-us/our-history/ceres-principles>.

## 5.2 Equator Principles

The Equator Principles, developed by private-sector banks, is a framework to identify, evaluate, and manage environmental and social risks in project finance. By becoming members, financial institutions commit to abstain from providing loans to borrowers that do not abide by the principles.

## 5.3 United Nations Guiding Principles on Business and Human Rights

These global standards aim to prevent human rights violations and the associated business risks, emphasizing access to grievance mechanisms and support through legitimate, accessible, and transparent mechanisms.<sup>7</sup>

## 5.4 United Nations Global Compact

The UN Global Compact lists ten principles comprising environmental, human rights, and governance frameworks related to UN goals in order to encourage sustainable and socially accountable international business practices.

The following standards draw from the aforementioned international norms. These select actions address risks and opportunities integral to long-term, sustainable business. Investors, companies, and policymakers should not view them as optional, but as fundamental to success. They are as follows:

- **Make publicly available an Environmental and Social Impact Assessment (ESIA) prior to operations**  
*See case studies on Lundin Petroleum in Sudan and Freeport McMoRan in Indonesia*
- **Require third-party independent regulation of project standards**  
*See case study on Asia Pulp and Paper Group in Indonesia*
- **Take responsibility for direct and indirect project impacts, and hold the company accountable to follow best practices**  
*See case study on Broken Hill Proprietary (BHP) in Papua New Guinea*
- **Plan for prevention and mitigation as well as social and environmental risks**  
*See case studies on Newmont Gold in Ghana and Starbucks C.A.F.E. in Latin America*
- **Ensure benefit sharing for local communities impacted by the project**  
*See case studies on Mitsubishi Coal Mining Australia and Nam Theun 2 Hydropower in Lao PDR*

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<sup>7</sup> U.N. Human Rights Council, "The UN 'Protect, Respect, and Remedy' Framework for Business and Human Rights," last modified September 2010, accessed April 20, 2013, <http://198.170.85.29/Ruggie-protect-respect-remedy-framework.pdf>, 3.

# Summary of Case Studies

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## I. Extractives: Mining

### Schuyler Olsson

#### **Mining in Conflicted Lands: Lessons from Freeport-McMoRan in Indonesia**

U.S.-based Freeport-McMoRan Copper and Gold Inc. has been conducting mining operations in Papua, Indonesia since the 1960s. Initiated with the support of a dictator during a time of severe political turmoil, Freeport's monumental operations have been responsible for widespread human rights abuses and environmental degradation in Indonesia's poorest, most marginalized province. As international pressure grew on the company and local tensions erupted in the 1990s, Freeport was eventually forced to redesign its socio-environmental approach. Although the company has since made major strides to reduce its environmental impacts and bring greater development benefits to the surrounding communities, decades of ongoing hardship are not easily forgotten, and the project remains embroiled in violence today.

### Yuxi Zhao

#### **Mitsubishi's Mining Investment in Australia**

The Mitsubishi Corporation built a joint venture, BHP Billiton Mitsubishi Alliance (BMA) with BHP Billiton, for coal production in Australia. This case study assesses the environmental and social impacts of BMA's mining operations.

### Sebastian O'Connor

#### **Broken Hill, Broken River: Broken Hill Proprietary and the Ok Tedi Mine**

Broken Hill Proprietary (BHP), entered into the Papua New Guinea jungle in 1981 to mine copper from the Ok Tedi Mine. For 17 years waste from the mine entered and poisoned the Ok Tedi and Fly River basins, and the company was forced to exit in 2001. This case study examines what allowed the pollution to happen, how BHP suffered from the disaster, and what it means for mining today.

### Toussaint Webster

#### **Newmont Gold Ghana: The Ahafo Mine Project**

Newmont Gold Ghana is a wholly owned subsidiary of US-based Newmont Mining Corporation. Between 2005 and 2006, the company displaced and resettled nearly 10,000 people for the construction of the Ahafo Mine project. Three years later, that mine was responsible for a cyanide spill that killed the fish in a local tributary. Newmont's brand and reputation is seen as a leader in environmental and social responsibility for some, and a leader of the big mining status quo for others.

## II. Land Use

### **Hilary Kirwan**

#### **Aligning Profit and Purpose: Starbucks and Conservation International's C.A.F.E. Practices Program in Latin America**

Starbucks and Conservation International's Coffee and Farm Equity (C.A.F.E.) Practices Program, while controversial, has brought environmental, social and economic value to farmers in Latin America and is now expanding globally. For Starbucks, C.A.F.E. also means enhanced customer brand affinity and a reliable supply of coffee beans. This case study illustrates how one multinational corporation and its NGO partner aligned profit and purpose.

### **Kristin DeValue**

#### **Oil Palm's New Frontier: Lessons from Sime Darby in Liberia**

Since the Liberian government and Sime Darby signed a concession agreement for 220,000 hectares of land in 2009, the company has faced several challenges in moving forward. This case study provides recommendations for how a company should behave - and what it should avoid - when operating in a least-developed country without clearly defined land rights.

### **Lauren Lane**

#### **Asia Pulp and Paper Group in Indonesia: Uprooting Deforestation**

Asia Pulp and Paper Group (APP) is one of the world's largest paper companies. It is also historically responsible for large-scale destruction of Indonesia's rainforests. Over the past 30 years APP directly and indirectly increased social conflicts within local community groups, exacerbated the effects of climate change, and destroyed the habitats of local, vulnerable species through deforestation for pulp processes. In February 2013, due to external pressures, the company committed to the implementation of sustainable, best practices on the ground. This case study discusses the impacts of Asia Pulp and Paper's operations in Indonesia, the resulting controversies, and their influence on the company's long-term policies, reputation, and economic capabilities.

### III. Extractives: Energy

#### **Jen Richmond**

##### **Swedish Oil Giant Lundin: Investment in Sudan (1997-2003)**

Lundin Petroleum, an oil and natural gas multinational, remains under international criminal investigation for possible complicity in human rights violations and war crimes while operating in a conflict zone during Sudan's second civil war. Lundin's failure to respond to international pressure to exit Sudan and to follow international guidelines for environmental and social best practices caused long-term damage to the company's reputation and financial portfolio.

#### **John Noel**

##### **Seismic Shift: Cuadrilla Resources Shale Gas Development in the UK**

Cuadrilla Resources was on the cutting edge of shale gas exploration in the United Kingdom (UK) before drilling operations triggered a series of earthquakes. As a result, the Department of Energy and Climate Change enacted an 18-month moratorium on hydraulic fracturing, creating a substantial delay in asset capitalization. This case study outlines the impacts of Cuadrilla's inadequate geological research prior to hydraulic fracturing and its efforts to regain the trust of local communities and retain its position as a pioneer in UK shale gas exploration.

#### **Stephanie DaCosta**

##### **The Camisea Natural Gas Project in Peru: Controversies and Financial Implications**

The Camisea Natural Gas Project, financed through public-private partnerships and consortia led by Argentina's PlusPetrol, Argentina's Techint, the United States' Hunt Oil, and Belgium's Tractebel, is Peru's largest energy project, in terms of size and investment, and arguably one of the most controversial natural gas projects in the world. Even with new environmental regulations and safeguards put in place by the Government of Peru and international financial institutions such as the Inter-American Development Bank to protect Peru's biologically sensitive areas, there has been a lack of environmental responsibility and sound stakeholder engagement from the consortia leading to conflict with various stakeholders.

#### **Natnari Sihawong**

##### **Sustainable Hydropower Development: Nam Theun 2 Hydropower Project in Lao PDR**

The dream of Laos is to become the "battery of Asia" through development of hydropower to alleviate poverty. The World Bank named the Nam Theun 2 a "model" dam project. The project received an enormous amount of criticism from non-governmental organizations. This case study examines the environmental and social impact from Nam Theun 2 and the lessons learned from the project to build a better dam in the future.

# Mining in Conflicted Lands:

Lessons from Freeport-McMoRan in Indonesia

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## **Abstract**

U.S.-based Freeport-McMoRan Copper and Gold Inc. has been conducting mining operations in Papua, Indonesia since the 1960s. Initiated with the support of a dictator during a time of severe political turmoil, Freeport's monumental operations have been responsible for widespread human rights abuses and environmental degradation in Indonesia's poorest, most marginalized province. As international pressure grew on the company and local tensions erupted in the 1990s, Freeport was eventually forced to redesign its socio-environmental approach. Although the company has since made major strides to reduce its environmental impacts and bring greater development benefits to the surrounding communities, decades of ongoing hardship are not easily forgotten, and the project remains embroiled in violence today.

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## Acronyms

ARD	Acid Rock Drainage
OPM	<i>Organisasi Papua Merdeka</i> (Free Papua Movement)
PTFI	PT Freeport Indonesia
TNI	<i>Tentara Nasional Indonesia</i> (Indonesian National Armed Forces)

## 1. Introduction

Located high in the mountains of Papua province, Indonesia, Grasberg Minerals District (hereinafter “Grasberg”) is the world’s largest copper and gold mine as measured by total recoverable reserves.<sup>1</sup> The mine is operated by PT Freeport Indonesia (PTFI), a subsidiary of U.S.-based Freeport-McMoRan Copper and Gold Inc. (hereinafter “Freeport”). Freeport owns 90.36% of the mine, with the remainder owned by the Indonesian government.<sup>2</sup> For a detailed investor profile and project financing structure, see Appendix I.

Freeport operates under a 1991 Contract of Work with the government of Indonesia, which allows it to conduct mining, exploration, and production activities within a 10,000-ha site deemed Block A, as well as exploration activities in the roughly 167,000-ha Block B.<sup>3</sup> The entire PTFI Project Area covers an area of 293,000 ha, including a lowlands tailings deposition area measuring approximately 23,000 ha. It spans from the Grasberg mining site, located above 4,000 meters elevation in Papua’s central highlands, down to a port facility along the coast of the Arafura Sea.<sup>4</sup> Along its 130-km north-south corridor, which runs adjacent to the highly biodiverse Lorentz National Park (a UNESCO World Heritage Site), the project area passes through a range of diverse ecosystems including sub-alpine regions, sago forest, tropical rain forest, cloud forest, and a mangrove estuary.<sup>5</sup>

Total estimated proven and probable reserves at Grasberg amount to 31.6 billion pounds of copper and 32.2 million ounces of gold (equivalent to roughly US \$173 billion at 2011 average realized prices), with project sales in 2011 reaching 846 million pounds of copper and 1.3 million ounces of gold.<sup>6</sup>

Freeport’s monumental operations have played a central role in the development of the region since the 1960s.<sup>7</sup> Providing more than \$7 billion in direct benefits to the Indonesian government since 1992—and currently employing over 20,000 people—Freeport has become Indonesia’s largest taxpayer.<sup>8-9</sup> With 2007 operations accounting for 2.4% of the nation’s GDP and 45% of Papua’s in 2007,<sup>10</sup> the company has truly become a “state within a state.”<sup>11</sup>

However, Freeport’s operations in Indonesia’s poorest province have been wrought with environmental and social controversy since they began in the late 1960s, including large-scale environmental degradation, expropriation of indigenous lands, and widespread human rights abuses. With its current contract eligible for extension until the mine’s depletion in 2041, Freeport is likely to play an important

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<sup>1</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), *2011 Annual Report*, report (Phoenix, 2011), [www.fcx.com](http://www.fcx.com).

<sup>2</sup> FCX, *Annual Report*.

<sup>3</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), “Worldwide Operations: Indonesia,” accessed April 1, 2013, <http://www.fcx.com/operations/asia.htm>.

<sup>4</sup> PTFI (PT Freeport Indonesia), *Controlled Riverine Tailings Management at PT Freeport Indonesia*, report, January 2009, [www.ptfi.com](http://www.ptfi.com).

<sup>5</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>6</sup> FCX, *Annual Report*.

<sup>7</sup> Patricia O’Brien, “The Politics of Mines and Indigenous Rights: A Case Study of the Grasberg Mine in Indonesia’s Papua Province,” *Georgetown Journal of International Affairs* 11, no. 1 (2010), HeinOnline.

<sup>8</sup> O’Brien, “The Politics of Mines and Indigenous Rights.”

<sup>9</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), “Controlled Riverine Tailings Management,” accessed April 1, 2013, [http://www.fcx.com/envir/controlled\\_riverine.htm](http://www.fcx.com/envir/controlled_riverine.htm).

<sup>10</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>11</sup> Carmel Budiardjo, “Resource-rich West Papua, But Who Benefits?,” *Jakarta Post*, May 14, 2010, para. 19, <http://www.thejakartapost.com>.

role in the region for decades to come. This study explores the project's troubled past, recent developments, and uncertain future.

## 2. Background

### 2.1 Papua: A Troubled Region

Indonesia's Papua province, home of the Grasberg mine, lies on the western half of the island of New Guinea. In stark contrast to the profitability of the mine, much of the indigenous Papuan population remains impoverished and lacks adequate education and health resources.<sup>12</sup> Furthermore, the culture and livelihood of indigenous Papuans has increasingly come under threat as great numbers of domestic migrants from throughout Indonesia flock to the region in search of employment.<sup>13</sup>



**Figure 1. Map of Papua and Grasberg Mine. Image Credit: Adapted from Wikimedia Commons User Bwmodular**

The current economic, social, and political status of Papua province is the result of a long history of subjugation under both colonial and national regimes. In 1848, the island was officially divided in half by the colonial powers of the Netherlands and Britain. The eastern half of the island, present-day Papua New Guinea, was given to Britain and passed through a long chain of colonial rule before Australia granted its independence in 1975. The western half, present-day Papua province of Indonesia, was given to the Dutch, who also controlled the Indonesian archipelago. In contrast to Papua New Guinea, Papua has not experienced sovereignty since the beginnings of colonial rule.<sup>14</sup>

<sup>12</sup> O'Brien, "The Politics of Mines and Indigenous Rights."

<sup>13</sup> Denise Leith, *The Politics of Power: Freeport in Suharto's Indonesia* (Honolulu: University of Hawaii Press, 2003).

<sup>14</sup> Leith, *The Politics of Power*.

In 1949, the Netherlands granted Indonesia independence, under the condition that Papua would remain under Dutch control until its future could be decided in one year's time.<sup>15</sup> However, the parties were unable to reach an agreement, and Indonesia began military incursions into Papua in 1959.<sup>16</sup> Incursions continued until the 1962 New York Agreement was reached, giving Indonesia authority over Papua until a 1969 referendum in which Papuans could vote on their own future. In 1963, however, Jakarta usurped the agreement and took full control of the island territory.<sup>17</sup>

Soon after the takeover, President Suharto took office and began his 31-year New Order Regime, which would see long-lasting, widespread, and systematic human rights violations on a massive scale across Indonesia.<sup>18</sup> Papua was no exception, and the president soon increased his military might in the region to battle the rising Free Papua Movement (Organisasi Papua Merdeka, OPM), an indigenous-led pro-independence rebel group.<sup>19</sup>

In a bid to gain international legitimacy, in 1969, Jakarta staged the Act of Free Choice for Papua to determine their status, hand-selecting 1,024 tribal elders to vote for a population of one million people. The elders voted unanimously for incorporation into Indonesia, and though many Papuans and their supporters contested the legitimacy of the referendum, it was deemed legitimate by Indonesia and the international community.<sup>20</sup>

The subsequent ruthless military rule of the Indonesian regime, following what Papuan advocates characterize as the "international betrayal of Papuans,"<sup>21</sup> has led to the death of as many as 100,000 Papuans and forced up to 20,000 more to flee into neighboring Papua New Guinea.<sup>22</sup> As discussed below, the role of Freeport, and initially the U.S. government, has been central to the region's troubled past.

## 2.2 Mining in Indonesia

Although the history of industrial mining in Indonesia stretches back as far as 1710, by World War II, little of Indonesia's mineral resources had been exploited.<sup>23</sup> During Indonesia's struggle for independence after World War II, mining was abandoned due to political instability. In 1959, President Sukarno nationalized all mining operations in a bid to formally reject the country's colonial past—stifling foreign investment and leaving the country's mineral resources essentially untouched for the next decade. In 1966, however, the New Order regime completely changed the political climate for the mining industry, with Suharto's 1967 laws on Foreign Capital Investment (I) and Basic Provisions of

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<sup>15</sup> Leith, *The Politics of Power*.

<sup>16</sup> O'Brien, "The Politics of Mines and Indigenous Rights."

<sup>17</sup> Leith, *The Politics of Power*.

<sup>18</sup> Chris Ballard, *Human Rights and the Mining Sector in Indonesia: A Baseline Study*, working paper no. 182, October 2001, pubs.iied.org.

<sup>19</sup> O'Brien, "The Politics of Mines and Indigenous Rights."

<sup>20</sup> P. A. Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia," *Journal of Business Ethics* 89, no. 2 (November 2009).

<sup>21</sup> West Papua Advocacy Team and East Timor and Indonesia Action Network, "West Papua Report October 2009," West Papua Report, October 2009, accessed April 1, 2013, <http://www.etan.org/issues/wpapua/0910wpap.htm>.

<sup>22</sup> David Palmer, "Between a Rock and a Hard Place: The Case of Papuan Asylum-Seekers," *Australian Journal of Politics & History* 52, no. 4 (2006), December 6, 2006.

<sup>23</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

Mining (II) opening the door again to foreign investment.<sup>24</sup> Based principally on copper, gold, nickel, and coal, the mining sector now comprises 4-5% of Indonesia's national GDP, though—as in the case of Papua—regional GDP contributions can be substantially higher.<sup>25</sup>

### 2.3 Freeport's Entry into Indonesia

Freeport was the first to take advantage of the new laws on foreign investment. In 1965, the company opened negotiations with Suharto and his military associates, courting them heavily with company funds.<sup>26</sup> Freeport was strongly backed both politically and economically by the U.S. government, which viewed the end of the Papua dispute as “a valuable opportunity for improving US-Indonesian relations” in a region seen as threatened by communism.<sup>27</sup>

In 1967, the first Contract of Work was signed on terms very favorable to Freeport, though it was controversial given that Indonesia had not yet gained official control over Papua. As Leith (2003) explains, it gave Freeport rights to mine a 101,000-ha concession, free from land rent or royalties for thirty years. The contract gave Freeport a three-year corporate tax holiday, had no requirements for Indonesian equity, absolved Freeport of financial or social obligations to the mine site's traditional landowners (who were excluded from consultations), included no environmental restrictions on operations, and did not require Freeport to participate in any development activities.<sup>28</sup>

The mine, originally named Ertsberg, opened in 1973. With constructed facilities including a new town called Tembapapura (Copper Town), an access road, and a port and airstrip in the coastal lowlands,<sup>29</sup> the area was quickly transformed from one where “nary a road existed” to one that included “a new society and economy, all of its own making.”<sup>30</sup>

In 1991, after the depletion of Erstberg and the discovery of the much larger Grasberg deposit not far away, Freeport signed a new contract with the government to greatly expand its operations.<sup>31</sup> The 1991 contract is set to last until 2021 with two potential 10-year extensions, given government approval. As Leith (2003) explains, the company was again allowed to operate free of environmental restrictions, and again was under no legal obligations to compensate the traditional landowners displaced by mining activities. The contract required Freeport to pay royalties to the government with an effective tax rate of 45%, and included a provision that 20% of the project was to be divested to Indonesian nationals within ten years. With the government increasing its share of the mine to 10%, Freeport met the remaining 10% obligation by selling shares to PT Indocopper Investama; in violation of the contract, however,

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<sup>24</sup> Kosim Gandataruna and Kirsty Haymon, “A Dream Denied? Mining Legislation and the Constitution in Indonesia,” *Bulletin of Indonesian Economic Studies* 47, no. 2 (July 20, 2011).

<sup>25</sup> Price Waterhouse Cooper, *Mining in Indonesia: Investment and Taxation Guide*, report, 2012, <http://www.pwc.com/id>.

<sup>26</sup> Jane Perlez and Raymond Bonner, “Below a Mountain of Wealth, A River of Waste,” *New York Times*, December 27, 2005, International sec., [www.nytimes.com](http://www.nytimes.com).

<sup>27</sup> Rifai-Hasan, “Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia,” 131.

<sup>28</sup> Leith, *The Politics of Power*, 63.

<sup>29</sup> Rifai-Hasan, “Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia,” 131.

<sup>30</sup> Perlez and Bonner, “Below a Mountain of Wealth, A River of Waste.”

<sup>31</sup> Rifai-Hasan, “Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia.”

Freeport was able to buy back half of Investama's shares, increasing its effective holdings well above the maximum 80%.<sup>32</sup>

Today Grasberg mine operates on a monumental scale, with new underground facilities expected to expand daily ore processing to 240,000 metric tons by 2016.<sup>33</sup> To the constructed town of Tembagapura, it has added the \$500 million Western-style township of Kuala Kencana (River of Gold), in addition to more roads and extensive infrastructure.<sup>34</sup> However, the complete transformation of the area associated with the enormous size and profitability of Freeport's operations has not come without great social and environmental costs to the surrounding communities.

### 3. Project Impacts

#### 3.1 Social Impacts of Grasberg

The PTFI project area and the areas surrounding it are home to two major indigenous groups. Living in the highlands in the vicinity of the mining site and the town of Tembagapura are the Amungme people; in the coastal lowlands, where the port, airstrip, and new towns of Timika and Kuala Kencana are located, live the Kamoro people.<sup>35</sup> The Amungme have been impacted primarily by direct displacement due to mining operations, while the impacts on the Kamoro are caused from the 233,000 metric tons per day of mine tailings that cascade down the river from the highlands into the coastal estuary.<sup>36</sup>

##### 3.1.1 Relocation

Following 1967 contract negotiations, which excluded the local Amungme landowners, the government took charge of Amungme land acquisition, apparently compensating landowners with tobacco and goods. After widespread Amungme protest, the 1974 January Agreement was signed between Freeport, government leaders, and Amungme community leaders.<sup>37</sup> The agreement ceded the Amungme's land, displacing up to 40,000 people in exchange for limited housing, a school, a market building, a clinic, and several other buildings.<sup>38-39</sup> As Leith (2003) points out, devoid of legal representation and unable to read or write, the Amungme could not possibly have foreseen the great socio-environmental changes to come, nor could they have understood the significance of the great mineral wealth they were signing away. In a similar fashion in 1994, the Kamoro people would cede their lands for the construction of a tailings deposition area and the new town of Kuala Kencana.<sup>40</sup>

As the implications of the 1974 agreement became clear, violence erupted. Riots broke out near Tembagapura and Akimuga; in response, "the army strafed [Akimuga] village with two Bronco ground

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<sup>32</sup> Leith, *The Politics of Power*, 70.

<sup>33</sup> FCX, *Annual Report*

<sup>34</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>35</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>36</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>37</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>38</sup> Burdani, Andreas. "Indonesia Army Confiscates Natives Hunting Weapons, Tools." *Albion Monitor News*. March 23, 1998. <http://www.monitor.net/monitor/9803a/freeport.html>.

<sup>39</sup> Leith, *The Politics of Power*, 110.

<sup>40</sup> Leith, *The Politics of Power*, 110.

attack aircraft.”<sup>41</sup> After a retaliatory attack on Freeport facilities by the OPM, the army bolstered its response, again strafing Akimuga and destroying Amungme settlements at Waa village, Timika, and Tembagapura.<sup>42</sup>

As Amungme settlements were repeatedly destroyed, many were forced to relocate to the lowlands, living uncomfortably on others’ lands and at risk from malaria to which they had no immunity.<sup>43-44</sup> The lowland-dwelling Kamoro have likewise been repeatedly relocated to make way for mining facilities, new towns, and the settlements of Indonesian transmigrants and relocated Amungme.<sup>45</sup> In many cases, this has led not only to a loss of ancestral lands and cultural sites, but also a general loss of livelihood.<sup>46</sup>

### 3.1.2 Transmigration, Unemployment, and Cultural Loss

The Amungme and Kamoro have also faced an increasing threat from internal migrants from throughout Indonesia. Due in part to the New Order regime policy of *relokasi*—which in practice encouraged domestic transmigration in an effort to assimilate non-Indonesians into Indonesian culture—and in part due to the economic opportunities presented by Freeport,<sup>47</sup> Papua province has seen the arrival of more than a million internal migrants since the 1960s.<sup>48</sup>

This massive transmigration into Papua, which has given the local Papuans only a slim majority in numbers over transmigrants, places great economic pressure on the Amungme and Kamoro while threatening the existence of their distinct cultures. Transmigrants, along with the military and police, own the majority of businesses in Timika, and the unskilled, uneducated local Papuan labor is often unable to compete.<sup>49</sup> Rapid modernization has led not only to unemployment among the locals—a problem that essentially did not exist before the modernized economy brought with the mine—but also a growth in crime rates, alcoholism, and drug abuse.<sup>50</sup> Furthermore, the mine has greatly increased the spread of HIV/AIDS, particularly in the mine service town of Timika, where some 12,000 male employees reside.<sup>51</sup>

While Freeport has invested heavily in developing the area since the 1960s, they historically did so without determining the needs and desires of the local people, who have generally perceived the development as ineffective.<sup>52</sup> Modern education in Bahasa Indonesia has further eroded their culture, and the Papuans feel “trapped between their traditional isolation and the compelling forces of modernity.”<sup>53</sup>

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<sup>41</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>42</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>43</sup> Leith, *The Politics of Power*, 210.

<sup>44</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>45</sup> Leith, *The Politics of Power*, 311.

<sup>46</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>47</sup> Leith, *The Politics of Power*, 205.

<sup>48</sup> O'Brien, "The Politics of Mines and Indigenous Rights."

<sup>49</sup> Leith, *The Politics of Power*.

<sup>50</sup> Leith, *The Politics of Power*, 207.

<sup>51</sup> O'Brien, "The Politics of Mines and Indigenous Rights."

<sup>52</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>53</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia," 136.

### 3.1.3 Military Payments and Human Rights Abuses

Exacerbating the damage caused by relocation and transmigration, local communities have been the subject of severe human rights abuses, stemming from the actions of both Freeport and Suharto's New Order Regime that was ruthless in confronting opposition and assimilating local cultures.<sup>54</sup>

Each Contract of Work between Freeport and the Indonesian government has required Freeport to house, supply, and transport government officials and security forces within the project area.<sup>55</sup> OPM protests against the project's expansion in the mid-1990s resulted in multiple massacres of unarmed civilians by Indonesian security forces, killing 37 people in 1994 and 1995.<sup>56</sup> As unrest grew, troop counts increased until Papua was among the most militarized zones in the region.<sup>57</sup> Although Freeport's contracts do not obligate it to house the military for combat purposes, the company's facilities have been used as a base for attacks.<sup>58</sup>

In 1996, Freeport took security measures of its own and began making enormous, illegal payments to individuals in the Indonesian army (called the TNI). The *New York Times* discovered that between 1998 and 2004, these payments totaled between \$20 and \$30 million; the company also spent \$35 million on upgrading military infrastructure and hired former CIA operatives and American military officials.<sup>59</sup>

Over the following years, TNI units funded by Freeport—as well as some Freeport security officials themselves<sup>60</sup>—have been responsible for rape, torture, extrajudicial killings, intimidation and harassment, arbitrary detention, and disappearance of individuals.<sup>61</sup> Furthermore, corruption is widespread among both TNI and police, due to their low wages.<sup>62</sup> The TNI controlled a vast empire of legal and illegal businesses worth \$8 billion in 2003,<sup>63</sup> and competition with police over control of businesses and access to Freeport resources has often resulted in violent clashes between them.<sup>64</sup> The TNI have also been known to extract protection payments in local villages after the villagers receive Freeport development funds.<sup>65</sup> All told, from 1975 to 1997 at least 160 people were killed in the areas around the mine, while numerous attacks and deaths have resulted since then.<sup>66</sup>

## 3.2 Grasberg and the Environment

### 3.2.1 Context: Weak Environmental Safeguards

Freeport's operations in Papua have caused massive environmental degradation across a wide geographic area, resulting in large part due to the weak environmental framework under which the

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<sup>54</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>55</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>56</sup> Junji Nakagawa, "Freeport's Grasberg/Ertsberg Mine in West Papua, Indonesia," in *Opportunities and Challenges for Foreign Investment in the APEC Region : Case Studies* (Singapore: Asia-Pacific Economic Cooperation Secretariat, 2008).

<sup>57</sup> Leith, *The Politics of Power*, 8.

<sup>58</sup> Leith, *The Politics of Power*, 234.

<sup>59</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

<sup>60</sup> Leith, *The Politics of Power*, 235.

<sup>61</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>62</sup> Leith, *The Politics of Power*, 223.

<sup>63</sup> Leith, *The Politics of Power*, 222.

<sup>64</sup> Raymond Bonner and Jane Perlez, "New York Urges U.S. Inquiry in Mining Company's Indonesia Payment," *New York Times*, January 28, 2006, International sec.

<sup>65</sup> Leith, *The Politics of Power*, 238.

<sup>66</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."



1967 and 1991 contracts were signed. As Leith (2003) explains, the 1967 Contract was born under a regime with a poor environmental record and a mining law that paid scant regard to the environment. Indonesia's first environmental policy did not come until 1982, and without enforceable regulations, it remained largely a "statement of intent."<sup>67</sup>

It was not until 1986 and 1990 that the government established a procedure for environmental impact assessments (called AMDALs) and an environmental protection agency (BAPEDAL). However, AMDAL and BAPEDAL, reluctantly established by Suharto due to international pressures, were deliberately undermined from their outset. BAPEDAL was required to report directly to an unsympathetic Suharto, while the AMDAL commission was given very little power to reject a project. Moreover, both BAPEDAL and AMDAL suffered from inadequate funding, a lack of qualified personnel, and a poor legal framework on which to base regulations.<sup>68</sup>

Thus, while Freeport's new contract in 1991 required an AMDAL, AMDALs at the time were criticized as "little more than score cards in which positive economic outcomes inevitably counterbalanced negative environmental impacts."<sup>69</sup> Freeport's case was no exception; the AMDAL process began in 1991, and the company continued production through its completion in 1994. The AMDAL commission attempted to reject the report due both to its failure to fulfill AMDAL specifications and to a fourfold increase in tailings production that had occurred during the three-year AMDAL process. However, the Department of Mines and Energy overruled the commission and approved the AMDAL in 1995.<sup>70</sup>

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<sup>67</sup> Leith, *The Politics of Power*, 56.

<sup>68</sup> Leith, *The Politics of Power*, 157.

<sup>69</sup> Carol Warren and Kylie Elston, *Environmental Regulation in Indonesia*, vol. Asia Paper 3 (Nedlands, Western Australia: Asia Research Centre, University of Western Australia Press, 1994), 9.

<sup>70</sup> Leith, *The Politics of Power*.

### 3.2.2 Environmental Impacts

#### 3.2.2.1 Tailings

The greatest environmental concern associated with Grasberg is its tailings, or the finely ground rock that remains after all valuable material has been extracted from the ore. With 95-97% of ore processed becoming tailings,<sup>71</sup> Grasberg produces nearly 233,000 metric tons per day (tpd) of tailings.<sup>72</sup> In contrast to international standards recommending tailings be stored within site-specific dams known as Tailings Storage Facilities,<sup>73</sup> Freeport's tailings are dumped directly into Otomona River, eventually making their way down 3,000 m. of elevation before reaching a 23,000-ha tailings deposition area in the coastal estuary.<sup>74</sup>

Tailings have been responsible for widespread physical destruction of the land, flora, and fauna in the lowlands, relocating Kamoro peoples and uprooting their hunting and fishing livelihoods.<sup>75</sup> As much as one third of the tailings waste has moved past the deposition area into the Arafura Sea, an essential fish breeding ground.<sup>76</sup> In 1990, siltation from the tailings caused massive flooding in the lowlands, while in 1995 the company's failure to construct a levee to contain the tailings led to the loss of 33 km<sup>2</sup> of forest. By 2001, tailings had already polluted over 84,000 ha offshore and 35,000 ha onshore, including inside the highly-biodiverse Lorentz National Park.<sup>77</sup> By 2005, nearly one billion tons of waste had been poured into the river system by 2005, with another six billion tons expected before the project's end.<sup>78</sup>

In addition to the physical destruction, the tailings are alleged to have diminished water quality, although the extent is a subject of debate. As Freeport uses no cyanide in ore processing, they maintain that their tailings are not toxic and do not produce acid.<sup>79</sup> Critics, however, contend that they contain dangerous levels of heavy metals.<sup>80</sup> The *New York Times* discovered that, according to Environment Ministry documents, copper and sediment levels in the river were so high that nearly all fish had disappeared from the area,<sup>81</sup> while one report claimed that in 1995 the Ajkwa River was so badly polluted that residents had been "warned by Freeport authorities not to drink



**Figure 2. 2003 Satellite Imagery of tailings in Ajkwa River (shown in purple). Image Credit: NASA, Landsat 7's Enhanced Thematic Mapper Plus (ETM+)**

<sup>71</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>72</sup> FCX, "Controlled Riverine Tailings Management."

<sup>73</sup> International Finance Group, World Bank Group, *Environmental, Health, and Safety Guidelines: Mining*, report, April 30, 2007, [www1.ifc.org/](http://www1.ifc.org/).

<sup>74</sup> PTFI, *Controlled Riverine Tailings Management*

<sup>75</sup> Leith, *The Politics of Power*, 167, 171.

<sup>76</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

<sup>77</sup> Leith, *The Politics of Power*, 168.

<sup>78</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

<sup>79</sup> FCX, *Annual Report*

<sup>80</sup> Leith, *The Politics of Power*, 168.

<sup>81</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

the river water or eat sago growing next to it.”<sup>82</sup> Fortunately, Freeport’s tailings management has improved over time, as will be discussed below.

### 3.2.1.2 Overburden and Landslides

Overburden, or the non-valuable rock that is removed in order to access metal-containing ores, is also a major environmental concern. With Freeport’s operations moving an incredible amount of rock—as much as 750,000 tpd is moved to process 1.5 g of gold<sup>83</sup>—the mine will have excavated a gap spanning 230 km<sup>2</sup> by its closure in 2041.<sup>84</sup> At some points, overburden is piled 450 m. high, with much of it dumped into nearby Lake Wanagong.<sup>85</sup> In 1993, heavy rains were found to be causing acid from the overburden to leech into the groundwater (a process called acid rock drainage), impacting Lorentz National Park.<sup>86</sup> The overburden loads at the mine have also led to various landslides and flooding incidents, including: an accident at Lake Wanagong that killed four workers in 2000;<sup>87</sup> a landslide killing eight in 2003; a mud slide killing three in 2006; and an uncontrolled muck flow killing two in 2011.<sup>88</sup>



**Figure 3. Satellite imagery of Grasberg open-pit. Image credit: NASA, ISS Crew Earth Observations experiment and the Image Science & Analysis Group, Johnson Space Center.**

<sup>82</sup> Walsh, *Trouble At Freeport: A Report of the Australian Council for Overseas Aid, Eyewitness Accounts of West Papuan Resistance to the Freeport-McMoRan Mine in Irian Jaya (West Papua), Indonesia and Indonesian Military Repression: June 1994 - February 1995*, report (Australian Council for Overseas Aid, Human Rights Office, April 1995), <http://www.utwatch.org/corporations/freeportfiles/acfoa.html>.

<sup>83</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>84</sup> Nakagawa, "Freeport's Grasberg/Ertsberg Mine in West Papua, Indonesia."

<sup>85</sup> Leith, *The Politics of Power*, 173.

<sup>86</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

<sup>87</sup> Muklis Ali, "Indonesia's Freeport Mine Will Shut for Two Weeks," *Mines and Communities*, October 10, 2003, <http://www.minesandcommunities.org/article.php?a=5337>.

<sup>88</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), *Securities and Exchange Commission Form 10-K*, File Number: 001-11307-01.

### 3.3 Pressure Grows on Freeport and Indonesia

The environmental and social controversy surrounding Grasberg has harmed not only local communities and ecosystems, but also Freeport itself. The mid-1990s was a crucial time for both Indonesia and Freeport. The strength of Indonesian civil society began to grow and challenge Suharto's power, aided by information technology and the support of the international community. As Suharto's power began to wither, Freeport was no longer able to rely on the autocratic governmental protection that had for decades allowed it to ignore its severe environmental and social problems.<sup>89</sup> This trend was further solidified in 1998 after the fall of Suharto and the rise of the *Reformasi* era, which would ultimately seek greater environmental safeguards and economic benefits for Papua from the mine.<sup>90</sup>

#### 3.3.1 NGO Criticisms

Among the first NGOs to criticize Freeport was the Indonesian Forum on the Environment (Wahana Lingkungan Hidup Indonesia or WALHI).<sup>91</sup> WALHI's efforts to condemn the American company were greatly reinforced in 1995, when the Australian Council for Overseas Aid (AFCOA) released a scathing human rights report to the international community, detailing the 1994 atrocities against indigenous people carried out by Freeport's security forces.<sup>92</sup> Freeport spent millions of dollars trying to defend itself and discredit the report, but international criticism continued to build.<sup>93</sup>

#### 3.3.2 Insurance Revocation

Responding to growing concerns, in 1995 the Overseas Private Investment Corporation (OPIC), which insures American companies investing in overseas areas marked by political risk, wrote a letter to Freeport revoking its insurance policy—the first time it had done so based on human rights and environmental grounds.<sup>94</sup> Among other charges, OPIC accused Freeport not only of causing irreversible damage to the Ajkwa River in violation of the Foreign Assistance Act of 1996, but also of understating the degree of tailings discharge into local rivers.<sup>95</sup> After lengthy negotiations, OPIC reinstated the insurance for several months; however, according to agency head Ruth Harkin, this was a face-saving gesture for the embarrassed Freeport CEO Mr. Moffett, and the policy was not renewed thereafter.<sup>96</sup>

#### 3.3.3 The March 1996 Riots

Soon after the 1995 AFCOA report and the OPIC insurance policy revocation, tensions in the region came to a climax. In March 1996, after the injury of an indigenous Dani man hit by a Freeport vehicle, massive riots broke out among the local people.<sup>97</sup> Freeport facilities were intentionally targeted, resulting in three deaths, the loss of \$3 million worth of company equipment, and a shut-down of the mine for three days.<sup>98</sup>

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<sup>89</sup> Leith, *The Politics of Power*, 5.

<sup>90</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>91</sup> Leith, *The Politics of Power*, 5.

<sup>92</sup> Walsh, *Trouble At Freeport*.

<sup>93</sup> Leith, *The Politics of Power*, 7.

<sup>94</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

<sup>95</sup> "Letter from the Overseas Private Investment Corporation to Freeport-McMoRan Cancelling \$100,000,000 of Risk Insurance," Robert C. O'Sullivan (OPIC) to Henry Miller (Freeport-McMoRan), October 10, 1995, Utwatch.org.

<sup>96</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

<sup>97</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>98</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

## 4. Responses to Controversy

*Due to the building international pressure surrounding Grasberg mine, both the Indonesian government and Freeport itself were ultimately forced to respond and change their approach to communities and the environment.*

### 4.1 Indonesia Tightens Its Regulations

With the start of the *Reformasi* period in the late 1990s, the Indonesian government enacted a series of legislation which sought to reduce risk at the mining site by securing greater benefits for the local people and better protection of the environment.

#### 4.1.1 Environmental Legislation

In 1997, Law No. 23 on environmental management was implemented.<sup>99</sup> BAPEDAL began repeatedly warning Freeport that it was in criminal violation of the law, with a 2000 internal ministry memorandum stating that the waste had killed all river life.<sup>100</sup> This did not have an immediate impact on Freeport, but the new law provided the basis for a successful lawsuit against the company, mandating it to minimize production of hazardous waste leeching into Lake Wanagong.<sup>101</sup> With no precise figures defined, however, the lawsuit was not highly enforceable. A subsequent law on hazardous waste would have had strong implications for tailings regulations, but Freeport was ultimately granted exemption.<sup>102</sup>

In 1999, Forestry Law 41 prohibited exploration and exploitation of natural resources in protected forest areas, eventually leading Freeport to suspend exploration activities outside of Block A in 2006. However, subsequent legislation re-opened Block B to open-pit mining, subject to certain requirements, and Freeport resumed exploration there in 2007—further attesting to the political power of the company.<sup>103</sup> Thus, although Indonesia made an effort in the late 1990s to strengthen its environmental legislation, the law remained weak and difficult to enforce against powerful actors like Freeport.

#### 4.1.2 Social Legislation

Indonesia also began to enact laws to secure human rights and ensure greater benefits from the mine for the local people. Most important for Papua was the 2001 passage of Law No. 21 on Special Autonomy for Papua. The law acknowledged that the development model for the region, led by the central government, had not benefited the people of Papua and had left a gap between Papua and other provinces. It sought to afford greater autonomy to the region and made “generous concessions in terms of governance; political, religious, and cultural protections; freedoms and human rights for Papuans; and an immense redistribution of the wealth generated from the exploitation of natural resources back into the province.”<sup>104</sup> Among other provisions, it mandated that 80% of revenue from forestry, fishing, and mining be returned to the province for 25 years, after which the percentage would decrease to 50%. Nonetheless, more than a decade on, the ongoing poverty gap between Papua and the

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<sup>99</sup> Environmental Management Law, Pub. L. No. 23/1997, 68 Statute Book of the Republic of Indonesia (1997).

<sup>100</sup> Perlez and Bonner, “Below a Mountain of Wealth, A River of Waste.”

<sup>101</sup> Leith, *The Politics of Power*, 298.

<sup>102</sup> Ballard, *Human Rights and the Mining Sector in Indonesia*.

<sup>103</sup> Nakagawa, “Freeport’s Grasberg/Ertsberg Mine in West Papua, Indonesia.”

<sup>104</sup> O’Brien, “The Politics of Mines and Indigenous Rights.”

rest of the country, as well as a recent famine in 2009, suggest that this law, if designed correctly, has not yet been implemented effectively to bring meaningful progress to the region.<sup>105</sup>

## 4.2 Freeport Redesigns its Socio-environmental Approach

While reforms by the Indonesian government have struggled to make a meaningful impact on Papua, Freeport has implemented significant changes of its own, arguably to much greater effect. Many of the company's new practices have been informed through its participation in numerous international external initiatives, including: the Sustainable Development Framework of the International Council on Mining and Metals (of which Freeport CEO Richard Adkerson has twice served as chairman), the Global Reporting Initiative, the International Organization for Standardization (ISO) 14001, and the Extractive Industries Transparency Initiative (EITI).<sup>106</sup>

### 4.2.1 Improving Community Relations

#### 4.2.1.1 Human Rights and Military Payments

In 2000, Freeport signed on to the Voluntary Principles on Security and Human Rights,<sup>107</sup> a multi-stakeholder initiative aimed at helping extractive industries to implement security measures in a way that respects human rights.<sup>108</sup> The company also emphasized its new commitment to human rights and the local community in its Social, Employment, and Human Rights Policy, which it distributed to all employees in 1999. The policy, updated in 2009, aimed to enhance cooperation with local people and committed all its employees to human rights training.<sup>109</sup>

Furthermore, following the passage of the 2002 Sarbanes-Oxley Act that imposed more rigid accounting practices on U.S. companies, Freeport allegedly stopped making illegal payments to individual officers of the police and military.<sup>110</sup> However, it remains questionable whether or not illegal payments have truly ceased; the company was charged to have provided false information when forced by the Security and Exchange Commission (SEC) to disclose payments in 2003,<sup>111</sup> while in 2009 the company admitted that it was continuing to pay the military. This was despite regulations requiring the military to hand over operations to police.<sup>112</sup>

Furthermore, while in 2011 the company endorsed the EITI in a commitment to make its government payments more transparent, the same year saw a request to the U.S. Department of Justice to investigate whether the company was still making illegal payments.<sup>113</sup> Freeport's 2011 annual *Working*

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<sup>105</sup> O'Brien, "The Politics of Mines and Indigenous Rights."

<sup>106</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), "External Initiatives," accessed April 1, 2013, [http://www.fcx.com/envir/approach\\_initiatives.htm](http://www.fcx.com/envir/approach_initiatives.htm).

<sup>107</sup> FCX, "External Initiatives."

<sup>108</sup> Bureau of Democracy, Human Rights & Labor, "Voluntary Principles on Security and Human Rights: Fact Sheet," U.S. Department of State, December 20, 2012, <http://www.state.gov/j/drl/rls/fs/2012/202314.htm>.

<sup>109</sup> Leith, *The Politics of Power*, 215.

<sup>110</sup> Perlez and Bonner, "Below a Mountain of Wealth, A River of Waste."

<sup>111</sup> Nakagawa, "Freeport's Grasberg/Ertsberg Mine in West Papua, Indonesia."

<sup>112</sup> Agence France-Presse, "US Mining Giant Still Paying Indonesia Military," March 22, 2009, section goes here, <http://www.google.com/hostednews/afp>.

<sup>113</sup> Dorothy Kosich, "USW Calls for DOJ Investigation of Reported FCX Foreign Corrupt Practices," *Mineweb*, November 03, 2011, [mineweb.com](http://mineweb.com).

*Towards Sustainable Development* report shows it paid the government a total of \$1.6 billion in taxes, royalties, and fees in 2011, but does not indicate how much money was spent on security.<sup>114</sup>

#### **4.2.1.2 Community Development**

In 1996, Freeport established the Freeport Partnership Fund for Community Development (also called the One Percent Fund), and soon after openly acknowledged the failures of its past development approach that ignored the needs and desires of the local people.<sup>115</sup> Through the fund, the company committed to provide one percent of its annual revenue for community development while involving local people directly in the process. At its outset, this translated to roughly \$15 million per year,<sup>116</sup> and total funds contributed by 2011 totaled \$54.4 million.<sup>117</sup> The fund has been used to build schools, hospitals, clinics, community facilities, places of worship, housing, and infrastructure. It has also provided scholarships as well as training and business development programs for local community members. Funds are disbursed by the Amungme and Community Development Organization (LPMK), governed by a board of community representatives, government leaders, church leaders, and Freeport employees.<sup>118</sup>

#### **4.2.1.3 Land Rights Trust Funds**

In addition to the One Percent Fund, Freeport also established a Land Rights Trust Fund for both the Amungme and Kamoro peoples in 2001 in order to “provide voluntary special recognition of the holders of the traditional land rights in the mining area.”<sup>119</sup> Through 2011, Freeport had committed \$29 million to the funds, and indicated that it would continue to do so annually thereafter. According to the company, these agreements were formalized by a memorandum of understanding between Freeport and the two indigenous groups in 2000.<sup>120</sup>

#### **4.2.1.4 Increasing Local Employment**

Freeport has also voluntarily sought to increase its employment of local Papuans in the workforce. In 1996, the company pledged to double employment of Papuans by 2001, and again by 2006.<sup>121</sup> These targets were met, and according to the company’s report, *Working Towards Sustainable Development*, it is company “policy to prioritize the hiring of Indigenous Papuans,” who now represent 32% of the workforce.<sup>122</sup> In a bid to educate and train the local workforce, the company also formed the Nemangkawi Mining Institute in 2003, with annual investments totaling \$12.8 million in 2011. The institute annually enrolls 1,500 apprentices in the three-year program, with roughly 1,827 graduates

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<sup>114</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), *2011 Working Toward Sustainable Development Report*, report (Phoenix, 2011), [www.fcx.com](http://www.fcx.com).

<sup>115</sup> Leith, *The Politics of Power*, 100.

<sup>116</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>117</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), "Land Use and Customary Rights: Indonesia," accessed April 1, 2013, [http://www.fcx.com/envir/land\\_indo.htm](http://www.fcx.com/envir/land_indo.htm).

<sup>118</sup> FCX, "Land Use and Customary Rights: Indonesia."

<sup>119</sup> FCX, "Land Use and Customary Rights: Indonesia."

<sup>120</sup> FCX, "Land Use and Customary Rights: Indonesia."

<sup>121</sup> Nakagawa, "Freeport's Grasberg/Ertsberg Mine in West Papua, Indonesia."

<sup>122</sup> FCX, *2011 Working Toward Sustainable Development Report*.

having secured permanent employment operations at the mine with Freeport or its contracting companies.<sup>123</sup>

#### 4.2.1.5 Community Health

Another major aspect of Freeport's renewed approach to community development has been its health programs. Although Freeport's operations are largely responsible for the increase in HIV/AIDS in the area,<sup>124</sup> in recent years the firm has made a strong effort to decrease prevalence of the disease. In 2011, the company's PTFI Public Health and Malaria Control Department (PHMC) provided HIV/AIDS training to over 6,400 community members and 6,000 employees. Freeport received an award from the National AIDS Commission for its work in preventing AIDS. It also operates a tuberculosis clinic in Timika—which served over 7,400 people in 2011 at a 93% success rate—as well as a “world-class” integrated malaria control program which saw an 8.6% decrease in malaria cases from 2010 to 2011.<sup>125</sup>

#### 4.2.2 Reducing Environmental Impacts

In addition to enhancing its community development programs, Freeport has made great strides in assessing, monitoring, and reducing its environmental impacts. The company established an Environmental Department which, by 1995, had an annual operating budget of \$17 million and employed approximately ninety people.<sup>126</sup> Since then, it has spent more than \$40 million annually on environmental programs and also committed \$150 million for the eventual rehabilitation of the mining site.<sup>127</sup>

##### 4.2.2.1 Risk Assessment and Environmental Monitoring

Due in part to the controversy surrounding Freeport's AMDAL report, in 2002 the company hired the firm Parametrix to conduct a three-part environmental risk assessment for the future of the project. Key ecological risks identified included: increased river sedimentation, reductions of benthic invertebrate populations in the estuary (with minimal impact on invertebrate-feeding wildlife),<sup>128</sup> a restructuring of mangrove forest composition (with some trees' roots being smothered by tailings while others colonized new areas), and potential risks for certain wildlife that fed exclusively on leafy vegetables (which, compared to other plants, would absorb higher concentrations of arsenic and aluminum).<sup>129</sup> Human cancer risk was not expected to exceed acceptable levels as defined by US EPA standards,<sup>130-131</sup> while overall the assessment did not predict significant changes in ecological composition of the estuary.<sup>132</sup> According to the report, revegetation of tailings-disturbed areas would be limited not by heavy metal

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<sup>123</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), "Community Investment: Indonesia," accessed April 1, 2013, [http://www.fcx.com/envir/comm\\_indo.htm](http://www.fcx.com/envir/comm_indo.htm).

<sup>124</sup> O'Brien, "The Politics of Mines and Indigenous Rights."

<sup>125</sup> FCX, *2011 Working Toward Sustainable Development Report*.

<sup>126</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>127</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>128</sup> PTFI (PT Freeport Indonesia), *Aquatic Ecological Risk Assessment*, report, vol. 1, Final Report (2002), <http://www.fcx.com/envir/pdf/audits/AERA.pdf>.

<sup>129</sup> PTFI (PT Freeport Indonesia), *Plant and Wildlife Risk Assessment*, report, vol. 3, Final Report (2002), <http://www.fcx.com/envir/pdf/audits/PWRA.pdf>.

<sup>130</sup> PTFI (PT Freeport Indonesia), *Human Health Risk Assessment*, report, vol. 2, Final Report (2002), <http://www.fcx.com/envir/pdf/audits/HHRA.pdf>.

<sup>131</sup> A notable exception was the risk posed to “copper-sensitive” people (i.e. those with *idiopathic copper toxicosis*) who consumed certain mollusk species from certain areas. However, the report noted that such mollusks are rare or absent from the areas concerned.

<sup>132</sup> PTFI, *Plant and Wildlife Risk Assessment*.



content, but by the tailings' nutrient deficiency and poor capacity to hold water. Thus, revegetation was expected within five years, with mature forests expected within 20-30 years.<sup>133</sup>

To monitor its environmental management over time, Freeport began funding external environmental audits every three years, beginning in 1996. It also built a \$3 million environmental laboratory and established a long-term monitoring program to conduct analyses of water quality, biology, hydrology, sediments, air quality, and meteorology in the area.<sup>134</sup> Based on the positive actions taken by Freeport, explained below, recent audits have generally praised Freeport for the improvements it has made, saying its practices are consistent with industry best practices and concluding that impacts have been mostly consistent with those expected in the risk assessment.<sup>135</sup>

#### 4.2.2.2 Tailings Management

In recent years, Freeport has made considerable progress on tailings management. The company commissioned a series of studies to consider 14 alternative mechanisms to manage the tailings, including: highland, midland, and lowland storage areas; several pipeline-based options; and various alternative river transport options. However, each of these strategies was ultimately rejected due to a range of concerns related to the difficult topography of the area and the risks of earthquakes, floods, and landslides. External environmental audits, though providing recommendations for improvement, concurred that the present system of tailings management was the best possible option for the region.<sup>136</sup>

Beginning in 1998, the company finally fulfilled its promise to construct a new tailings containment levee in the lowlands. The levee set the eastern boundary for the tailings, effectively containing the tailings between it and the existing western levy. In 2005, the company also diverted the Ajkwa River out of the tailings management area, leaving the Otomona River to carry all tailings to the deposition area. According to Freeport, the diversion is advantageous because it reduces river flow through the deposition area, increasing tailings manageability and allowing for land reclamation, reforestation, and agriculture projects in the deposition area.<sup>137</sup>

Furthermore, in order to offset heavy metal content and improve water quality, Freeport began adding limestone and other carbonates to the ore during the milling process.<sup>138</sup> Based on tens of thousands of analyses conducted through its long-term environmental monitoring program, the company now claims that water quality meets U.S. EPA drinking water standards, while flesh samples from fish and shrimp meet Indonesian food standards.<sup>139</sup>

As expected in the risk assessment, over the past several years, the tailings deposition area has seen colonization by mangroves, crabs, shrimps, snails, and over 500 other marine and plant species. The area is also now home to a Natural Succession Discovery Park in which visitors can see the various stages

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<sup>133</sup> PTFI, *Plant and Wildlife Risk Assessment*.

<sup>134</sup> PTFI, *Controlled Riverine Tailings Management*

<sup>135</sup> See, for example: Institute for Research and Community Services of the Bandung Institute of Technology, *2011 External Environmental Audit, Audit Report Executive Summary*, report, [http://www.fcx.com/envir/pdf/audits/Executive\\_Summary\\_Audit\\_PTFI\\_2011.pdf](http://www.fcx.com/envir/pdf/audits/Executive_Summary_Audit_PTFI_2011.pdf).

<sup>136</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>137</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>138</sup> Leith, *The Politics of Power*, 171.

<sup>139</sup> PTFI, *Controlled Riverine Tailings Management*.

of forest succession. To accelerate primary succession, the company has also planted over 200,000 mangroves in the deposition area, using work contracts with the lowland Kamoro people. Furthermore, by the end of 2007, over 160 plant species had been successfully cultivated on soils containing tailings, in addition to establishment of animal husbandry programs.<sup>140</sup>

#### 4.2.2.3 Overburden Management

To address the problem of acid rock drainage (ARD) into groundwater due to the sulphide minerals contained in the overburden, in 2004 the company began implementing a comprehensive Overburden Management Plan that is approved by the Government of Indonesia and regularly updated.<sup>141</sup> The plan pursues a range of strategies to better manage the 760,000 daily tons of rock and ore processed at the mine. These strategies include: overburden segregation, which manages the placement of materials based on their potential to generate or consume acid; overburden blending, which blends acid-generating overburden with acid-neutralizing overburden to isolate harmful sulfides from water and atmospheric oxygen; limestone covering, which adds alkalinity to the overburden (thus neutralizing acids and reducing ARD); and other measures, including erosion control and re-sloping surfaces to control the flow of surface runoff and groundwater drainage.<sup>142</sup>

The overburden management plan has shown positive results. Acid generation in the lower Lake Wanagong is not expected in the short to medium term, and is “less probable in the long term providing the acquired knowledge and [overburden management] practice are consistent.”<sup>143</sup> In the upper Lake Wanagong, the acid-consuming limestone overburden is expected to adequately neutralize ARD. Thus, it would appear that ARD problems have been largely dealt with, though it remains to be seen how effective they will be in the future.<sup>144</sup>

#### 4.2.2.4 Landslide Management and Worker’s Safety

In recent years, to reduce risk of landslides and other workers’ safety issues, Freeport has implemented a Health and Safety Management System, which has achieved certification by the Occupational Health and Safety Assessment Series (OHSAS) 18001.<sup>145</sup> The comprehensive safety management system focuses on management and supervision and applies to every aspect of operations. It also includes multiple safety training courses as well as a system to track results and monitor progress.<sup>146</sup> Although the site continues to experience occasional landslides, overall, the company’s Total Recordable Incident Rating (TRIR) was 0.61 per 200,000 hours worked in 2011. This number has decreased in recent years and is significantly below the preliminary metal mining sector industry average of 2.29.<sup>147</sup>

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<sup>140</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>141</sup> Nakagawa, "Freeport's Grasberg/Ertsberg Mine in West Papua, Indonesia."

<sup>142</sup> Yuni Rusdinar, "Long Term Acid Rock Drainage (ARD) Management at PT Freeport Indonesia," *American Society of Mining and Reclamation*, March 26, 2006, [www.asmr.us](http://www.asmr.us).

<sup>143</sup> Rusdinar, "Long Term Acid Rock Drainage (ARD) Management at PT Freeport Indonesia."

<sup>144</sup> Rusdinar, "Long Term Acid Rock Drainage (ARD) Management at PT Freeport Indonesia."

<sup>145</sup> FCX, *2011 Working Toward Sustainable Development Report*.

<sup>146</sup> Nakagawa, "Freeport's Grasberg/Ertsberg Mine in West Papua, Indonesia."

<sup>147</sup> FCX, *2011 Working Toward Sustainable Development Report*.

#### 4.2.2.5 Reducing Biodiversity Impacts

To lessen its impacts on biodiversity, Freeport traded 45% of its Ertzberg concession in the highly biodiverse Lorentz National Park for an area equal to its size to the west of its concession.<sup>148</sup> It also commissioned the area's first and second biodiversity studies in 1997 and 1998, which documented intense levels of biodiversity and led to the discovery of numerous new plant and animal species; since then, the company has played an instrumental role in funding the operations of Lorentz National Park.<sup>149</sup> It has funded and facilitated valuable scientific research, and has also received praise for minimizing its biodiversity impacts from the World Wildlife Fund<sup>150</sup> and the Wildlife Habitat Council.<sup>151</sup>

## 5. Grasberg Today

Based on the changes it has made to its social and environmental programs, Freeport considers itself a leader in the field of sustainable development.<sup>152</sup> Indeed, it has received numerous awards for its work in health, business development, biodiversity conservation, and other areas.<sup>153</sup> Nevertheless, Grasberg remains mired in social and environmental controversy today.

Despite the changes made to the community development programs, they remain a modernization project that has eroded local culture. Social problems like unemployment, HIV/AIDS, crime, and "spiritual and economic dislocation" remain firmly in the local community,<sup>154</sup> and while Freeport boasts to have increased local employment at the mine, 32% remains a relatively low number for a company that accounts for 96% of the local region's GDP.<sup>155</sup>

Similarly, recent events indicate that the environmental progress Freeport claims to have made is not so clear-cut. Even after the Ajkwa river had been diverted in 2005—an accomplishment Freeport claimed had largely solved the tailings problem—the government of Indonesia threatened lawsuit against the company if they did not improve their environmental record,<sup>156</sup> while in 2006 the Norwegian government divested 116 million crowns (roughly US \$20 million at the time) in Freeport shares, representing the first time it had done so on environmental grounds.<sup>157</sup>

Ongoing frustration with Freeport among the local communities has become evident in a myriad of ways in recent years. In March 2010, Papua's Amungme tribe lodged a new class-action lawsuit against the company, seeking \$32.5 billion in material and non-material damages resulting from the illegal acquisition of 2.6 million ha of Amungme land in the late 1960s.<sup>158</sup> The case has yet to be settled.

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<sup>148</sup> Leith, *The Politics of Power*, 164.

<sup>149</sup> Leith, *The Politics of Power*, 164-165.

<sup>150</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia."

<sup>151</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>152</sup> FCX, *Annual Report*.

<sup>153</sup> FCX, "External Initiatives."

<sup>154</sup> Rifai-Hasan, "Development, Power, and the Mining Industry in Papua: A Study of Freeport Indonesia," 140.

<sup>155</sup> PTFI, *Controlled Riverine Tailings Management*.

<sup>156</sup> Arie Rukmantara, "Govt Rebuked For Not Suing Freeport," *Jakarta Post*, March 28, 2006, <http://www.thejakartapost.com>.

<sup>157</sup> Bill Baue, "Norwegian Government Pension Fund Dumps Wal-Mart and Freeport on Ethical Exclusions," *Sustainability Investment News*, June 16, 2006, <http://www.socialfunds.com/news/article.cgi/2034.html>.

<sup>158</sup> Heru Andriyanto, "Papua Tribe Files \$32b Lawsuit Against Freeport," *Jakarta Globe*, March 8, 2010, <http://www.thejakartaglobe.com>.

Furthermore, labor strikes and protests in 2006, 2007, 2011, and 2012 continue to lead to violence and halt mining production. Most notably, in 2011 a three-month strike by 70% of the workforce led to “civil unrest, transportation blockades, sabotage of important facilities, and violence.”<sup>159</sup> The protests, which ended after a 40% wage increase over two years was agreed upon, resulted in the death of one worker and cost the company a 25% loss in annual production.<sup>160</sup>

Finally, Freeport admitted that between July 2009 and February 2012 alone, there were an astounding 32 shooting incidents in and around Grasberg and its access road, resulting in 15 deaths and 56 injuries. Victims have ranged from Freeport employees and contractors, to law enforcement forces, to civilians from both in and outside Indonesia.<sup>161</sup> With many of the assailants unidentified, these attacks have been variously blamed on the OPM as well as police and military forces that continue to clash over both greater economic control of the area and access to more lucrative security arrangements with Freeport.<sup>162-163</sup> These shootings have not only resulted in an increase in Indonesian security forces in the area, but have also intensified the economic losses to the company resulting from labor strikes, with 2011 fourth-quarter production of gold and copper dropping 18% and 71% respectively.<sup>164</sup>

## 6. The Future of Grasberg

While the open-pit portion of Grasberg is expected to be depleted by 2016, the company is expected to open the world’s largest underground complex in 2016. Freeport’s current Contract of Work lasts until 2021, at which point they are eligible for two 10-year extensions given government approval.<sup>165</sup>

Since 2009, President Yudhoyono of Indonesia has ratified a new series of environmental legislation that—while stronger than the initial reforms passed in the late 1990s—mostly does not apply to Freeport’s current operations. A new environmental law (No. 32/2009), expected to affect Freeport in the future, will place higher standards on the environmental permitting process, including greater enforcement provisions and a requirement for companies to establish a guaranteed restoration fund for use in the event of environmental damage.<sup>166</sup>

Furthermore, a 2009 mining law (No. 4/2009) and a 2012 presidential decree mandated that within ten years of the start of production, no more than 49% of a mine’s operations could be owned by foreign entities.<sup>167</sup> Although this rule does not apply to Freeport—indeed, it could help the company by hindering new competition—Indonesia has asked the company to voluntarily decrease its holdings and renegotiate its contract to raise royalties to 5-10%.<sup>168</sup> Freeport has been receptive to the government’s

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<sup>159</sup> FCX, *Securities and Exchange Commission Form 10-K*.

<sup>160</sup> Rendi A. Witular and Rangga D. Fadillah, "After Shooting, A Call To Review Freeport's Deal," *Jakarta Post*, October 11, 2011, <http://www.thejakartapost.com>.

<sup>161</sup> FCX, *Securities and Exchange Commission Form 10-K*.

<sup>162</sup> Megawati Wijaya, "Nine Injured in Fresh Grasberg Shootings," *Metal Bulletin*, January 25, 2010, [www.metalbulletin.com](http://www.metalbulletin.com).

<sup>163</sup> Jonathan Pearlman, "Death in Papua: Tale of Scapegoats and Politics," *The Age*, November 21, 2009, <http://www.theage.com.au>.

<sup>164</sup> Soraya Permatasari, "Freeport Says 32 Shootings Eroding Grasberg Copper, Gold Output," *Bloomberg*, February 28, 2012, <http://www.bloomberg.com/news>.

<sup>165</sup> FCX, *Annual Report*

<sup>166</sup> Dewi S. Reni, "2011 Indonesian Law Review: Environmental Protection & Management," editorial, <http://blog.ssek.com/>, January 26, 2012.

<sup>167</sup> Farida Husna and Ben Otto, "Indonesia Presses Freeport on Royalties, Stake Sale," *Wall Street Journal*, July 23, 2012, US ed., Markets sec., [online.wsj.com](http://online.wsj.com).

<sup>168</sup> Husna and Otto, "Indonesia Presses Freeport on Royalties, Stake Sale."

concerns; it is currently exploring strategies to decrease its total holdings<sup>169</sup> and in 2013 cut its concession area by an undisclosed amount.<sup>170</sup>

A final challenge for the company lies in an export ban of unprocessed materials that is expected to impact Freeport in 2014.<sup>171</sup> Freeport points out that its current Contract of Work secures its export rights, but it remains unclear how it will respond to the new regulations.<sup>172</sup>

## 7. Conclusion

Freeport's operations in Indonesia have had a long, tumultuous history and a monumental impact on the development of Papua since the 1960s. The initial contract between Indonesia and Freeport was born in great controversy, opening up mining operations in a region to which neither party could lay legal claim. The contract was designed to the benefit of three highly powerful actors (the two signatories and the U.S. government), but to the neglect of the local Amungme and Kamoro peoples that the project would impact most.

Suharto's brutal New Order Regime opened up the country's economy by aggressively seeking and protecting foreign investors, while simultaneously committing widespread human rights abuses and pursuing the "Indonesianization" of ethnic minorities such as those in Papua.<sup>173</sup> Throughout this era, which saw the deaths of as many as 100,000 ethnic Papuans, Freeport's close ties with the regime provided it with a safety net and the ability to ignore the massive environmental degradation and widespread human rights abuses tied to its operations.

However, with the rise of civil society and the steady decline of Suharto's power in the late 1990s, Freeport's connections with the highly criticized Suharto morphed from a cheap insurance policy into a costly liability, as the company was targeted by NGO groups both domestically and abroad. With the explosive riots of the 1990s, Freeport soon discovered the grave costs associated with its neglect of community and environment, and was ultimately forced to reform its approach.

However, the company's initial response, a sort of carrot-and-stick approach that sought to improve social and environmental standards while offering egregious bribes to military officials engaged in human rights abuses, proved likewise to be unsustainable in the long run, and Freeport has again been forced to respond to allegations of illegal payments.

Although in recent years the company has made significant progress in mitigating its environmental impacts and investing in biodiversity conservation and research, it continues to dump 230,000 metric tons of tailings into the local river system each day—a practice unlikely to be accepted in the firm's home country.

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<sup>169</sup> Megawati Wijaya, "Freeport Considers IPO as Means to Reduce Stake in Indonesia," *Metal Bulletin*, July 6, 2012.

<sup>170</sup> Husna and Otto, "Indonesia Presses Freeport on Royalties, Stake Sale."

<sup>171</sup> Yoga Rusmana, Fitri Wulandari, and Femi Adi, "Indonesia Ban on Unprocessed-Metal Exports Effective May 6," *Bloomberg*, May 3, 2012, <http://www.bloomberg.com/news>.

<sup>172</sup> FCX, *Annual Report*.

<sup>173</sup> Leith, *The Politics of Power*, 205.

Likewise, while community development initiatives have been strengthened and benefits have recently been seen in employment and health, they remain socioeconomic modernization projects that have displaced thousands of people, eroding their culture and leaving them disillusioned. Thus, as demonstrated by the ongoing violence and unrest surrounding the project, which appear to have increased since 2009, the company's enhanced socio-environmental efforts appear unable to overcome its lasting legacy of decades of unmitigated social and environmental harm.

Whether the project would have resulted in such violence had the company started operations under its current standards remains a question that is difficult to answer. Nor is it clear what effect contract renegotiations will have on the company and communities, though it is difficult to imagine such changes quelling the violence. What is clear, however, is that the future of Freeport and the future of Papua are inseparable; ultimately, the ability of Freeport, Indonesia, and local communities to work together for the betterment of Papua will determine the fate of this troubled region for decades to come.

## **8. Recommendations for Transnational Mining Companies**

### **8.1 Understand that with great power comes great responsibility.**

Transnational miners must understand that, when investing in a weak state unable (or unwilling) to deliver development benefits to the local people, the responsibility of development is likely to fall on the company's shoulders; even with a stronger civil society and a new regime pushing a second wave of reforms, this burden remains with Freeport today. Thus, though mining and community development are seemingly separate entities, they are inextricably linked. Transnational mining corporations must recognize this and enter the country with a well-defined plan to fulfill a crucial gap not met by the national government—lest they face the same unrest as Freeport.

### **8.2 Consult local communities in advance and compensate them compellingly.**

As demonstrated by the US \$32.5 billion lawsuit recently filed against Freeport by Amungme leaders, the company's failure to consult communities and justly compensate them for their losses has not only contributed to decades of violence and unrest, but also threatens to become a major financial liability for Freeport. Transnational miners must understand that forcing communities off their traditional lands in exchange for modern housing and limited economic opportunities—within an economic system they may not understand—is not likely to be well embraced. Following the principles of Free, Prior and Informed Consent (FPIC), communities should be consulted in advance and given an equal voice on projects. In order to minimize feelings of intimidation resulting from the great power differential that often exists between transnational investors and local communities, meetings should be conducted using a language the locals understand, in an environment and at a time that is suitable for them. If displacement occurs, compensation must be compelling for the local people—accounting not just for their land, but for the wealth that lies underneath it.

### **8.3 Communicate closely with communities to understand their ongoing development needs.**

When Freeport began increasing its communication with local people and granting greater ownership of development programs, development began to occur more smoothly. The crucial need to consult with

communities to understand their needs in development is echoed in much of the critical development scholarship today.<sup>174</sup> Due to cultural barriers and power differentials, however, communication can be extremely difficult. Thus, transnational miners need to be culturally sensitive and prepared to engage in alternate traditions of communication. Partnerships should be established with local NGOs and government authorities who have a better understanding of local cultures and development needs in the region.

#### **8.4 Understand local power dynamics and the diversity of stakeholders.**

Although it is crucial to involve local people in the development process, community participation can present unique challenges. Initial attempts by Freeport to provide greater ownership in the One Percent Fund led to the misappropriation of funds by a limited number of powerful community members. Marginalized members did not receive equitable benefits, with divisions between indigenous groups over development funding culminating in intra-tribal killings in 1997.<sup>175</sup> To correct for this, Freeport ultimately took a more nuanced approach that involved a range of actors in the development process—including community members, church leaders, and representatives from Freeport and the government. Thus, it is important to understand local power dynamics to ensure that development funding is equitably distributed in a way that is, as much as possible, in line with the needs of the people.

#### **8.5 Maintain communication with the national government, but act to ensure proper oversight.**

Ongoing communication and cooperation between the host country and foreign investor are critical. Indeed, much of the Freeport's development woes in Papua have resulted from its lack of communication not only with local communities, but also with the national government.<sup>176</sup> However, as demonstrated by the relationship between Suharto and Freeport—including outright bribery of government and security officials—political ties that are too close can result in failure to regulate social and environmental damage. Thus, to ensure proper oversight of government, company, and security forces, the parties must maintain a proper distance, both politically and economically.

#### **8.6 Go beyond the socio-environmental standards of weak states.**

When investing in states with a weak legal framework for human rights and environmental management, such as Indonesia throughout much of the 20th century, simply complying with host government regulations is unlikely to be sufficient to avoid substantial social and environmental harm. Much of Freeport's damages to community and environment were in full compliance of the law, while the government itself was heavily involved in human rights abuses. Therefore, responsible mining companies must often hold themselves to higher standards than what is required of them by the host government. These standards may come from the investor's home government, from an international body such as the International Council on Mining and Metals, or from the company itself.

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<sup>174</sup> See for example: William Easterly, *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done so Much Ill and so Little Good* (Oxford: Oxford University Press, 2006).

<sup>175</sup> Leith, *The Politics of Power*, 107.

<sup>176</sup> Leith, *The Politics of Power*, 104.

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## Appendix

### I. Project Financing Structure and Investor Profile

Grasberg Minerals District is owned and operated by PT Freeport Indonesia (PTFI), a subsidiary of Freeport McMoRan Copper and Gold Inc. ("Freeport"). Freeport owns 90.36% percent of the mine, including 9.36% through its wholly owned subsidiary, PT Indocopper Investama. The remaining 9.64% is owned by the Government of Indonesia. Additionally, Rio Tinto holds a joint venture interest in the 1995 expansion of the mine, entitling it to a 40% share of production above certain levels until 2021, and 40% of all production thereafter. As Rio Tinto does not control management of the mine or own shares in Freeport, it is not discussed in this paper.<sup>177</sup>

Headquartered in Phoenix, Arizona, Freeport operates on a wide geographic scale, with large-scale operations spanning numerous sites in the United States (Colorado, New Mexico, Arizona), Chile, Peru, the Democratic Republic of Congo (DRC), and Indonesia. With a global workforce of 30,000 employees and consolidated proven and probable reserves of copper, gold, and molybdenum totaling an estimated 119.7 billion pounds, 33.9 million ounces, and 3.42 billion pounds respectively,<sup>178</sup> Freeport is the world's largest publicly traded producer of both copper and molybdenum.<sup>179</sup>

Freeport is a founding member of the International Council on Mining and Metals,<sup>180</sup> a multi-stakeholder platform established in 2001 for local communities, governments, civil society, and academia to work together towards sustainable development in the mining industry.<sup>181</sup>

In addition to Indonesia, Freeport has encountered controversy related to its operations in Peru<sup>182</sup> and DRC,<sup>183</sup> while it has also been criticized for its role in the dismantling of environmental regulations in New Mexico.<sup>184</sup>

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<sup>177</sup> FCX, *Annual Report*.

<sup>178</sup> FCX, *Annual Report*.

<sup>179</sup> FCX (Freeport-McMoRan Copper and Gold Inc.), "Our Company: Who We Are," accessed April 1, 2013, <http://www.fcx.com/company/who.htm>.

<sup>180</sup> FCX, "Our Company: Who We Are."

<sup>181</sup> International Council on Mining & Metals, "About Us," accessed April 1, 2013, <http://www.icmm.com/about-us/about-us>.

<sup>182</sup> Alex Emery, "Freeport Peru Workers May Have to End Strike in Mid-November," *Bloomberg*, October 28, 2011, <http://www.bloomberg.com/news/2011-10-28/freeport-peru-workers-may-have-to-end-strike-in-mid-november.html>.

<sup>183</sup> Nomvelo Buthelezi, "Near-mine Communities up in Arms against Freeport McMoRan's DRC Unit," *Mining Weekly*, May 25, 2012, <http://www.miningweekly.com/article/investment-in-the-democratic-republic-of-congo-reaps-prosperity-but-leaves-communities-in-poverty-2012-05-25>.

<sup>184</sup> David Correia, "Governor Susana Martinez: Mining Giant Freeport-McMoRan's New Patron," *La Jicarita*, December 4, 2012, <http://lajicarita.wordpress.com/2012/12/04/governor-susana-martinez-mining-giant-freeport-mcmorrans-new-patron/>.

# Mitsubishi's Mining Investment in Australia

The Environmental and Social Impacts of Mines Owned by BHP  
Billiton Mitsubishi Alliance (BMA)

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## Abstract

The BHP Billiton Mitsubishi Alliance (BMA), a joint venture of Japanese Mitsubishi Development Pty Ltd. (MDP) and Anglo- Australian BHP Billiton Ltd (BHP Billiton), owns seven mines in Bowen Basin, State of Queensland, Australia. This case study assesses the environmental and social impacts of BMA's coal operations. It shows the complex results of BMA's mining projects in Bowen Basin: on the one hand, BMA has undertaken its responsibility to reduce its environmental and social damage; on the other, environmental pollution and social tensions caused by mining operations remain serious. In order to achieve sustainable development of the company and local community, BMA needs to make greater efforts to minimize environmental and social damage.

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## Acronyms

AMWU	Australian Manufacturing Workers Unions
BMA	BHP Billiton Mitsubishi Alliance
CFMEU	Construction, Forestry, Mining and Energy Union-Mining and Energy Division
DEHP	Department of Environment and Heritage Protection
DIDO	Drive-in, Drive-out
EBIT	Earnings before interest and taxes
EPA	Queensland Environmental Protection Agency
EP Act	Environmental Protection Act of 1994
ETU	Electrical Trades Union
FIFOs	Fly-in, Fly-out
GBR	Great Barrier Reef
MC	Mitsubishi Corporation
MDP	Mitsubishi Development Pty Ltd.
NGO	Non-governmental organization
PCI	Pulverized Coal Injection
RepRisk	Reputational Risk Radar
TEP	Trasnational Environmental Programs



## 1. Introduction

The seven mines owned by BMA are located in Bowen Basin, in Queensland, Australia, stretching from Theodore and Rolleston in the south to Collinsville in the north. Bowen Basin holds the largest coal reserves in Australia, with an area of approximately 60,000 square kilometers (km<sup>2</sup>).<sup>1</sup>

Mining activities in Bowen Basin began over a century ago. In 1844, Ludwig Leichhardt discovered coal outcroppings in the banks of the Mackenzie and Bowen Rivers. Since 1874, coal mining has been a main economic activity in Bowen Basin.<sup>2</sup> Initially, the coal was produced only for the domestic market, since transportation and development costs were high. In the 1960s, open-cut commercial production for export began. Since then, several mines, including Blackwater, Goonyella, Norwich Park, and Gregory, have been developed.<sup>3</sup> Today, Bowen Basin has 34 operational coal mines, which produce 100 million tons of coal per year. This output is approximately 83% of the State of Queensland's coal production.<sup>4</sup>

BMA's mines mainly produce metallurgical coal (also known as coking coal). Coking coal is an important resource for steelmaking. Coking coal is turned into coke, which acts as a reducing agent during the steelmaking process. BMA is Australia's largest coal miner and exporter and the world's largest supplier of seaborne coking coal.<sup>5</sup> The coal is sold to over 60 customers in 24 countries, including China, Japan, and India.<sup>6</sup> The total annual output is over 58 million tons, equal to more than one-fifth of the global seaborne trade in metallurgical coal.<sup>7</sup>

## 2. Background

### 2.1. Company Profile

BMA was created by Japan's Mitsubishi Development Pty Ltd. (MDP) and Australia's BHP Billiton on June 28, 2001, after the two companies signed a strategic alliance agreement. BHP Billiton is a multinational company, founded after the merger of the Australian resource company BHP and the British enterprise Billiton in June 2001. It is the world's leading producer of major natural resources, producing a mix of coal, iron, nickel, copper, and oil. BHP Billiton is listed on both the Australian and London Stock Exchanges.<sup>8</sup> Established in 1968, MDP is a wholly owned subsidiary of the Japanese multinational Mitsubishi Corporation (MC). MC uses MDP as a resources investment company to guarantee the output of coking and thermal coal.<sup>9</sup>

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<sup>1</sup> Bowen Basin Information Website, accessed February 5, 2013, <http://www.bowenbasin.cqu.edu.au/index.html>.

<sup>2</sup> Fitzroy Basin Association Inc, *Mining Coal And Protecting Biodiversity: A Solutions And Options Report for Queensland's Bowen Basin*, March 2007, accessed February 5, 2013, [http://www.fba.org.au/publication/downloads/RT-Coal-mining--biodiversity-080303-\\_FinalDraft.pdf](http://www.fba.org.au/publication/downloads/RT-Coal-mining--biodiversity-080303-_FinalDraft.pdf).

<sup>3</sup> Fitzroy Basin Association Inc.

<sup>4</sup> Bowen Basin Information Website, accessed February 5, 2013, <http://www.bowenbasin.cqu.edu.au/index.html>.

<sup>5</sup> Centre for Social Responsibility in Mining, *Evaluation Report of the BMA Community Partnerships Program*, January 2009, accessed February 5, 2013, [http://www.commddev.org/userfiles/files/1112\\_file\\_A6.pdf](http://www.commddev.org/userfiles/files/1112_file_A6.pdf).

<sup>6</sup> "BHP Billiton Mitsubishi Alliance," *Queensland Resources Council*, accessed February 5, 2013, [https://www.qrc.org.au/01\\_directory/details.asp?ID=6](https://www.qrc.org.au/01_directory/details.asp?ID=6).

<sup>7</sup> Centre for Social Responsibility in Mining, *Evaluation Report of the BMA Community Partnerships Program*, January 2009, accessed February 5, 2013, [http://www.commddev.org/userfiles/files/1112\\_file\\_A6.pdf](http://www.commddev.org/userfiles/files/1112_file_A6.pdf).

<sup>8</sup> BHP Billiton Website, accessed February 5, 2013, <http://www.bhpbilliton.com/home/aboutus/Pages/default.aspx>.

<sup>9</sup> Mitsubishi Development Pty Ltd Website, accessed February 5, 2013, <http://www.mitsubishicorp.com/jp/en/csr/sustainability/sustainability04.html>.

BMA currently owns or manages seven Bowen Basin coal mines: Goonyella Riverside, Broadmeadow, Peak Downs, Saraji, Norwich Park, Gregory Crinum, and Blackwater. Goonyella Riverside is an open cut coal mine with over 14 million tons of coking coal annual production located 30 km north of Moranbah, a mining town of Queensland.<sup>10</sup> In Goonyella Riverside's mine lease, BMA developed Broadmeadow as a new punch longwall underground mine.<sup>11</sup> Both Peak Downs and Saraji are open cut coal mines near Moranbah. Peak Downs produces more than 9 million tons of coking coal per year, while Saraji produces more than 8 million tons of coal annually.<sup>12</sup> The Blackwater mine is one of the largest open-cut mines in Australia, located 24 km south of the town of Blackwater. Its annual output is more than 14 million tons of metallurgical coal.<sup>13</sup> Located 60 km northeast of the rural center of Emerald, the Gregory Crinum mine encompasses the Gregory open-cut operations and the Crinum underground mine with an annual production of 2.8 million tons of coal.<sup>14</sup> Finally, Norwich Park mine was an open cut metallurgical coal mine located 24 km southeast of Dysart town. It was closed in May 2012 due to declining coal prices and increasingly high operating costs.<sup>15</sup>

These mines produce various types of coals, such as high-quality coking coals, weak coking coals, Pulverized Coal Injection (PCI) coals, and thermal coals. Most of the mines' coal output is exported via the BMA-owned Hay Point coal export terminal near Mackay.<sup>16</sup> Both MDP and BHP Billiton have a 50% ownership share. BHP Billiton is responsible for operating the mine and recruiting labor. Additionally, BMA manages the operation of BP Mitsui Coal, owned by BHP Billiton (80%) and Mitsui and Co. (20%).<sup>17</sup>

## 2.2. Relevant Laws and Regulations about BMA's Mining Operations

Due to its long mining history, Australia has a relatively comprehensive regulation system for mining activities. Each state in Australia has its own legislation regulating the exploration for and production of onshore minerals. BMA's mining operations are regulated by the State of Queensland.

As mining activities have significant influence on the environment, the Queensland government has issued several pieces of environmental legislation to regulate mining operations. One of the most important pieces of legislation is the Environmental Protection Act of 1994 (EP Act), which is administered by the Queensland Environmental Protection Agency (EPA). Under the EP Act, mining companies in Queensland must submit an environmental management plan, which proposes environmental protection commitments to the EPA. Additionally, the State of Queensland has issued relevant environmental protection policies, including the Environmental Protection (Water) Policy of 1997, Environmental Protection (Noise) Policy of 1997, Environmental Protection (Air) Policy, and

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<sup>10</sup> "Goonyella River Mine," *Source Watch*, accessed April 22, 2013, [http://www.sourcewatch.org/index.php/Goonyella\\_Riverside\\_mine](http://www.sourcewatch.org/index.php/Goonyella_Riverside_mine).

<sup>11</sup> Peter Tyldsley, "Broadmeadow Cuts First Longwall Coal," *Australian Mining* (November 2005), 38.

<sup>12</sup> "Peak Downs Mine," *Source Watch*, accessed April 22, 2013, [http://www.sourcewatch.org/index.php/Peak\\_Downs\\_mine](http://www.sourcewatch.org/index.php/Peak_Downs_mine). "Saraji Mine," accessed April 22, 2013, [http://www.sourcewatch.org/index.php/Saraji\\_mine](http://www.sourcewatch.org/index.php/Saraji_mine).

<sup>13</sup> "Blackwater Mine," *Source Watch*, accessed April 22, 2013, [http://www.sourcewatch.org/index.php/Blackwater\\_mine](http://www.sourcewatch.org/index.php/Blackwater_mine).

<sup>14</sup> "Gregory Crinum Mine," *Source Watch*, accessed April 22, 2013, [http://www.sourcewatch.org/index.php/Gregory\\_Crinum](http://www.sourcewatch.org/index.php/Gregory_Crinum).

<sup>15</sup> "Norwich Park Mine," *Source Watch*, accessed April 22, 2013, [http://www.sourcewatch.org/index.php/Norwich\\_Park\\_mine](http://www.sourcewatch.org/index.php/Norwich_Park_mine).

<sup>16</sup> BHP Mitsubishi Alliance, *Daunia Coal Mine Project-Environmental Impact Statement*, accessed April 22, 2013, <http://www.bhpbilliton.com/home/aboutus/regulatory/Documents/dauniaMineEisSection01Introduction.pdf>, 2.

<sup>17</sup> BHP Mitsubishi Alliance, *Daunia Coal Mine Project-Environmental Impact Statement*, 2.

Environmental Protection (Waste Management) Policy of 2000. These policies set environmental quality standards, emission standards, and relevant monitoring procedures.<sup>18</sup>

Regulations also cover workplace relations and worker health and safety. Miners' health and safety are protected under the Coal Mining Safety and Health Act of 1999. The Fair Work Act of 2009, enacted by the Commonwealth, provides authority to regulate mining employment and labor relations in Queensland. According to the Act, unions will represent workers to negotiate with companies on expiring agreements. Workers may take industrial action in the bargaining process, as long as such actions are authorized by a protected action ballot after the normal expiration date of the enterprise agreement.<sup>19</sup>

## 2.3. Stakeholders

### 2.3.1. Local Communities

The communities near BMA's mining operations are Blackwater, Moranbah, Dysart, Emerald, Capella, and Nebo.<sup>20</sup> Traditionally, BMA hired residents of local communities to work in the mines. Since the late 1980s, BMA has preferred to hire non-resident workers, known as fly-in, fly-outs (FIFOs) or drive-in, drive-outs (DIDOs), as a new workforce model.<sup>21</sup> FIFOs work in extended rosters (14 days on/7 days off, or 9 days on/5 days off). They temporarily stay in local communities during their work rosters; however, they leave after the work has been completed and live far from the communities. This type of workforce brings several advantages to companies, such as avoiding the costs of constructing and maintaining mining towns, finding labor more easily, increasing flexibility in work arrangement, and minimizing pre- and post- production expenses for a project.<sup>22</sup> Today, a majority of the workforce in the Australian mining industry are non-residents of Queensland. Nearly 50% were contractors in 2005.<sup>23</sup> Bowen Basin had 14,613 non-resident workers by June 30, 2010.<sup>24</sup> These FIFOs/DIDOs have significant impacts on local mining communities, which this report will cover in detail.

### 2.3.2. Non-governmental Organizations

Besides local communities, non-governmental organizations (NGOs) are important stakeholders in BMA's mining operations. NGOs involved in this case include two types: environmental organizations and labor unions.

One environmental organization is Greenpeace. Founded in 1971, Greenpeace is a global campaigning organization whose mission is to expose global environmental problems and to force solutions for a

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<sup>18</sup> BHP Mitsubishi Alliance, *Daunia Coal Mine Project-Environmental Impact Statement*.

<sup>19</sup> Fair Work Commission, *Fair Work Act 2009*, accessed February 5, 2013, <http://www.fwc.gov.au/index.cfm?pagename=legislationfwact>.

<sup>20</sup> Centre for Social Responsibility in Mining, *Evaluation Report of the BMA Community Partnerships Program*, January 2009, accessed February 5, 2013, [http://www.commddev.org/userfiles/files/1112\\_file\\_A6.pdf](http://www.commddev.org/userfiles/files/1112_file_A6.pdf).

<sup>21</sup> Keith Storey, "Fly-in/fly-out and Fly-over: Mining and Regional Development in Western Australia," *Australian Geographer* 32 (2001), no. 2, 133-148.

<sup>22</sup> Kerry Carrington, Russel Hogg, and Alison McIntosh, "The Resource Boom's Underbelly: Criminological Impacts of Mining Development," *Australian & New Zealand Journal of Criminology* 44, December 23, 2011, accessed February 5, 2013, [http://www.parliament.wa.gov.au/intranet/libpages.nsf/WebFiles/Hot+topics+carrington+crime/\\$FILE/carrington.pdf](http://www.parliament.wa.gov.au/intranet/libpages.nsf/WebFiles/Hot+topics+carrington+crime/$FILE/carrington.pdf), p.335-354.

<sup>23</sup> Carrington et al.

<sup>24</sup> Carrington et al.

green and peaceful future.<sup>25</sup> Greenpeace is carefully watching the BMA's water discharges. Queensland Conservation Council is a local environmental NGO monitoring water discharges from mines. It develops policies about environmental protection and tries to convince the government of Queensland to take action.<sup>26</sup>

Fitzroy Basin Association is a community-based NGO trying to protect natural assets and improve the adoption of modern and environment-friendly land management practices in Fitzroy Basin.<sup>27</sup> Fitzroy Basin Association issued a report called "Mining Coal and Protecting Biodiversity: A Solutions and Options Report for Queensland's Bowen Basin." It provided BMA with recommendations about land use for biodiversity. Additionally, AgForce is an NGO that represents Queensland farmers' interests.<sup>28</sup> It also opposes BMA's water release, since it believes that the discharges harm farm production.

Moreover, three labor unions are important stakeholders in this case: the Construction, Forestry, Mining and Energy Union-Mining and Energy Division (CFMEU); the Australian Manufacturing Workers Unions (AMWU); and the Electrical Trades Union (ETU). These three unions opposed BMA's policies about non-resident workers. They represented 3,500 workers from BMA's mines and negotiated with BMA about workplace agreement issues in 2011.

### 2.3.3 Queensland Government

Queensland Department of Environment and Heritage Protection (DEHP) is the environmental regulator of BMA's mining operation. According to Greenpeace, DEHP changed original licenses of water discharges for four BMA mines and weakened environmental protections.<sup>29</sup>

## 3. Impacts of BMA's Mining Operations

### 3.1. Environmental Impacts and Concerns

Regarding BMA's mining operations, three environmental issues have raised the most concern: water discharges from mines, air pollution, and land disturbance.

#### 3.1.1. Water Discharges from BMA's mines

BMA's mines are across the Fitzroy River catchment, which is the largest east-draining river system in Australia. The catchment includes six major rivers: Comet, Dawson, Fitzroy, Isaac-Connors, Machenzie, and Nogoia, and discharges into the Great Barrier Reef (GBR) lagoon. Fitzroy River catchment is vital for local communities. It comprises nearly ten percent of the agriculturally productive land in Queensland. The dominant land uses are grazing (90%) and cropping (6%).<sup>30</sup> Local towns and rural communities

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<sup>25</sup> Greenpeace Website, accessed April 22, 2013, <http://www.greenpeace.org/australia/en/about>.

<sup>26</sup> Queensland Conservation Council, accessed April 22, 2013,

[http://www.qccqld.org.au/index.php?option=com\\_content&task=view&id=419&Itemid=173](http://www.qccqld.org.au/index.php?option=com_content&task=view&id=419&Itemid=173).

<sup>27</sup> Fitzroy Basin Association, accessed April 22, 2013, <http://www.fba.org.au>.

<sup>28</sup> AgForce Website, accessed April 22, 2013, <http://www.agforceqld.org.au>.

<sup>29</sup> "What You Don't Know Can Still Hurt You," *Greenpeace*, November 22, 2012, accessed April 22, 2013, <http://m.greenpeace.org/australia/en/high/news/climate/What-you-dont-know-can-still-hurt-you>.

<sup>30</sup> R. M. Noble, S.K. Rummenie, P.E. Long et al, "The Fitzroy River Catchment: An Assessment of The Condition of The Riverine System," Australian Agronomy Conference Contributed Papers (1996), accessed April 22, 2013, <http://www.regional.org.au/au/asa/1996/contributed/446noble.htm>.

directly depend on surface water and groundwater resources of the catchment. The catchment also has rich fish resources. According to a study, two exotic and 21 native species were found in the catchment.<sup>31</sup>

During the wet season, according to the EP Act, BMA mines are allowed to release mine-affected water under conditions specified by environmental authorities. In cases where significant changes are needed, release conditions are specified as part of Transitional Environmental Programs (TEPs).<sup>32</sup>

Permitting water discharges is controversial. According to a study by Queensland EPA, the Fitzroy River's water quality has been affected, even though mines discharged water under conditions specified by 2008 TEPs. Salinity increased in waterways, dams and weirs. BMA's Goonyella Riverside and Peak Downs were two of six mines (the others are Coppabella, North Goonyella, Millennium, and Ensham) that had the greatest cumulative impact, based on a risk assessment using salinity.<sup>33</sup> Water supply for some townships was also influenced. For instance, residents in Blackwater and Dysart felt uncomfortable due to the poor drinking water quality.<sup>34</sup> Queensland Health also issued a health alert to the affected community about the potential effects of increased salinity.<sup>35</sup> Additionally, polluted water may influence biological systems in the Fitzroy River. It is highly likely that the spawning process of the Fitzroy Golden Perch, an Australian native freshwater fish, was seriously disrupted during the early part of the wet season when highly saline water flushed into the river.<sup>36</sup> Thousands of fish were killed near Rockhampton town after the flood of mine-affected water. Furthermore, some studies suggest that water quality in the GBR lagoon area is declining because of higher sediment and nutrient loads and pollutants from human activity in rivers. The declining water quality in the GBR lagoon has damaged the GBR and its associated ecosystem. Evidence also shows that GBR lagoon water will be further impacted during Fitzroy River flood season.<sup>37</sup>

During the 2011-2012 wet seasons, all of BMA's mines discharged mine-affected water. Some mines' discharges were not in accordance with the conditions specified by environmental authorities. For instance, Saraji's release in January 2012 exceeded the downstream electrical conductivity limit of 1000 micro Siemens per centimeter ( $\mu\text{S}/\text{cm}$ ). Receding flows in Philips Creek were impacted due to this excess discharge. Queensland's Department of Environment and Heritage Protection (DEHP) issued a warning letter to the Saraji mine. Another BMA mine, Peak Downs, discharged sulfate in excess of the legal limits from January 30 to February 1, 2012. On March 18, 2012, BMA's Goonyella Riverside and Broadmeadow

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<sup>31</sup> Noble et al.

<sup>32</sup> Queensland Department of Environment and Heritage Protection, *Fitzroy River Catchment 2011-12 Wet Season Report*, January 2013, accessed April 22, 2013, <http://www.fitzroyriver.qld.gov.au/pdf/publications/fitzroy-report-wet-season-2011-12.pdf>.

<sup>33</sup> Department of Environment and Resource Management, *A Study of The Cumulative Impacts on Water Quality of Mining Activities in the Fitzroy River Basin*, April 2009, accessed April 22, 2013, <http://www.fitzroyriver.qld.gov.au/pdf/cumulativeimpactassessment.pdf>.

<sup>34</sup> Barry Hart, Paul Greenfield, and Mark Pascoe, *Report to Queensland Premier: Review of The Fitzroy River Water Quality Issues*, November 2008, accessed April 22, 2013, <http://www.fitzroyriver.qld.gov.au/pdf/fitzroyriverwaterqualityreport.pdf>.

<sup>35</sup> Department of Environment and Resource Management.

<sup>36</sup> Hart et al.

<sup>37</sup> John Rolfe, Khorshed Alam and Jill Windle, "Overview of The Fitzroy Basin and Opportunities for Offset Trading," *Establishing The Potential for Offset Trading in the Lower Fitzroy River Research Reports*(January 2004), no. 1, ISSN 1449-3721.

mines released excess copper downstream.<sup>38</sup> Figure 1 provides details on BMA mines' excess discharges during the 2011-2012 wet seasons.

### 3.1.2. Air Pollution

Another environmental concern is air pollution. The principal sources of particulate air pollution are the dusts that result from heavy mining equipment movements, topsoil stripping, and coal handling. According to an interviewee living in Bluff, 20 km from BMA's Blackwater mine, dust is heavy. "There's an increase in mines with unwashed coals; if the wind is south, my house gets a lot of coal dust. [And] noise of trains; I can't talk on the phone when they get past."<sup>39</sup> A business person in Moranbah, where BMA's Broadmeadow mine is located, expressed worries about family health due to air pollution: "Asthma [has] always been up; don't know about other towns but a very high rate of asthma here. I don't know [what the cause is]. I have it now, never had it for years, but I got it 10 years ago. My daughter nearly died from an asthma attack. She was 23–24 years old, never had asthma. Ten people that I know personally died of asthma attacks."<sup>40</sup> Accordingly, air pollution near BMA's mines has influenced the daily life and health of local residents.

### 3.1.3. Land Disturbance

BMA's mines are located in regions with little rainfall, where the topsoil is covered with grassland mixed with shrubs. However, the mining process requires the removal of topsoil until the coal bed is reached. During this process, the surface vegetation is removed and the ecological system is damaged. A mine can leave a large crater after the coal has been mined. It is estimated that BMA mine leases merely accounted for approximately nine percent of the lands managed by BHP Billiton. However, these lands represented 45% of the total BHP Billiton land disturbance requiring rehabilitation by 2008.<sup>41</sup>

## 3.2. Social Impacts

As Australia's largest coal miner, BMA has a significant impact on Queensland's economy. BMA is the largest employer in the Central Queensland region. In 2007, BMA employed 8,900 people, including over 4,000 permanent staff.<sup>42</sup> However, the mining boom also brings adverse social changes to BMA's mining towns, caused by the growing number of non-resident workers.

First, accommodation is a serious issue in mining towns. Increasing numbers of non-resident workers moving into local towns drives up local living costs. Housing costs are unaffordable in some mining towns. According to an interviewee who worked in emergency accommodation in Bowen Basin:

"It's getting harder and harder for people who don't work for the mines to be able to afford to live here; rents starting at \$500 a week...People [working in the] local supermarket, local

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<sup>38</sup> Queensland Department of Environment and Heritage Protection.

<sup>39</sup> Vanessa Petkova, Stewart Lockie, John Rolfe and Galina Lvanova, "Mining Developments and Social Impacts on Communities: Bowen Basin Case Studies," *Rural Society* 19, no.3 (2009), p.211-228, 223.

<sup>40</sup> Petkova et al.

<sup>41</sup> BHP Billiton, *BMA Guideline for the Design of Sustainable Mine Landforms*, November 2008, accessed April 22, 2013,

<http://www.bhpbilliton.com/home/aboutus/regulatory/Documents/2009DauniaCoalAppendixJBmaSustainableLandformGuideline.pdf>.

<sup>42</sup> Queensland Department of Infrastructure and Planning, *Terms of Reference for An Environmental Impact Statement: Bowen Basin Coal Growth Project*, November 2008, accessed April 22, 2013,

<http://www.bhpbilliton.com/home/aboutus/regulatory/Documents/dauniaMineEisAppendixA.pdf>.

businesses, can't afford those types of rents. Even guys working for the mines, if they are the sole provider for the family, even for them it gets difficult if they pay \$500–600 per week rent out of take-home pay...Some guys have families elsewhere and they pay \$165 per week if they're lucky enough that a mine subsidizes a room in a camp, but they've still got their petrol and rent where their family is living and still have to support that family.”<sup>43</sup>

Due to the expensive accommodation, most non-residents choose to live in mining camps or commute to the mining towns rather than living in the areas. Although the mining camps vary, some of them have poor conditions. Jo-Ann Miller, a member of Queensland Parliament said some mining camps she visited were “absolutely disgraceful.”<sup>44</sup>

Moreover, non-resident workers' atypical work schedules influence the building of local communities. The typical schedule for FIFOs/DIDOs is a 12-hour shift, including four days on/off, or seven days on/off. After work, FIFOs/DIDOs leave and stay with their families out of town. Little time is left to spend in the direct environment. Sporting and recreational clubs are declining in Bowen Basin, despite population growth. Participation in community activities is also constrained by these atypical work schedules.<sup>45</sup> Little interaction and communication between non-resident workers and permanent residents has led to suspicions and misunderstandings, with many residents believing that non-resident workers “were responsible for a range of additional social problems” such as increasing crime rates, alcohol abuse, and traffic congestion.<sup>46</sup>

Furthermore, the 12-hour working shift may be related to health and safety issues, since workers are fatigued. According to a woman whose husband works in the mining company, “My husband had to start work at 6:00. He had to leave Mackay at 3:00 to make sure he got here. If he had three days off he'd spend the first day winding down, then the second day semi-human and the third day he's winding up again to go to work and not able to relax and go to sleep properly so he had only 2–3 hours' sleep before getting up and on the road.”<sup>47</sup> Thus, FIFOs' health and safety become a problem.

## 4. Responses and Interactions among NGOs, Local Communities, and BMA

### 4.1. Responses from NGOs and Local Communities

In response to the negative impacts that BMA's mines cause, NGOs and local communities use several approaches to protest against BMA.

#### 4.1.1 Responses to Environmental Impacts

With regards to BMA's exceeding the legal level of water discharges, Greenpeace released photos of polluted floodwater in BMA mines and warned local communities, “You won't know when your river's

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<sup>43</sup> Petkova et al, p.220.

<sup>44</sup> Carrington et al, p. 341.

<sup>45</sup> Petkova et al, p.222.

<sup>46</sup> Petkova et al,p. 222.

<sup>47</sup> Petkova et al, p.223.

poisoned.”<sup>48</sup> Greenpeace also pointed out that Queensland environmental authorities were responsible for the outcome, since they eased requirements on BMA mines including Peak Downs, Saraji, Norwich Park, and Goonyella Riverside. Based on the comparison between the current and previous release permits for these four mines, three of the four mines are allowed to discharge water with maximum electrical conductivity at lower flow rates. The maximum permitted salinity in the receiving waters also increased for all mines. Only one of these mines, Norwich Park, is required to directly monitor or limit the level of sulfate. Moreover, there are no restrictions on the turbidity of the discharged water.<sup>49</sup> The loose salinity controls can cause negative impacts on the environment, such as death of vegetation, and increasing risks to human and livestock health. Greenpeace Climate Campaigner Georgina Woods has indicated that the Queensland government is trying to issue new legislation through parliament to lift pollution controls overnight for the coal mines.<sup>50</sup>

Besides Greenpeace, other environment groups have expressed concerns about potential contamination of the Fitzroy Basin. Nigger Parratt of the Queensland Conservation Council said no firm evidence in environmental science could support BMA’s discharges. He also suggested that the discharged water might also contain other toxic contaminants, such as heavy metals and radionuclides.<sup>51</sup>

Local communities and landholders have also expressed environmental concerns. They worry that BMA’s release may cause severe environmental pollution similar to that caused by Ensham Mine in 2008, when the local government allowed Ensham Mine to release large quantities of contaminated water. AgForce, an NGO representing the interests of Queensland’s farmers, said the release had a great impact on nearby farms. It stressed that “the river is the lifeblood for quite a few communities in central Queensland,” as there is irrigation, livestock, and domestic water consumption depending on the river.<sup>52</sup> Farmers also blamed water discharges for worsening floods, since the level of the river stayed elevated longer. Both Queensland Conservation Council and AgForce believe that mining companies must treat the water before discharging it into the environment.<sup>53</sup>

BMA’s release of polluted water has raised a debate between the current Queensland Government and the opposition party. Annastacia Palaszczuk, the opposition leader, warned residents in Rockhampton, a city on the Fitzroy River, that their drinking water would be legally polluted with the approval of the

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<sup>48</sup> “Greenpeace Warns River Communities: You Won’t Know When Your River’s Poisoned,” Greenpeace, accessed April 20, 2013, <http://www.greenpeace.org/australia/en/mediacentre/media-releases/climate/Greenpeace-warns-river-communities-you-wont-know-when-your-rivers-poisoned>.

<sup>49</sup> Greenpeace, *Research Briefing: Summary of Changes to Environmental Authorities for Four BMA Mines*, November 21, 2012, accessed April 20, 2013, [http://m.greenpeace.org/australia/Global/australia/images/2012/Climate/Detail\\_of\\_%20proposed\\_changes\\_to\\_mine%20water%20discharged%20from%20Queensland's%20mines.pdf](http://m.greenpeace.org/australia/Global/australia/images/2012/Climate/Detail_of_%20proposed_changes_to_mine%20water%20discharged%20from%20Queensland's%20mines.pdf).

<sup>50</sup> “Greenpeace warns river communities: you won’t know when your river’s poisoned.”

<sup>51</sup> “Queensland Floods Heighten Crisis around Toxic Mine Water,” *RadioNational*, January 30, 2013, accessed April 20, 2013, <http://www.abc.net.au/radionational/programs/breakfast/contaminated-mine-water-fears-in-queensland/4490488>.

<sup>52</sup> RadioNational.

<sup>53</sup> RadioNational.



Liberal National Party government.<sup>54</sup> However, Environment Minister Andrew Powell refuted this claim, stating that the discharges were similar to practices that occurred under previous governments.<sup>55</sup>

Local communities have also expressed their concerns about air quality and land disturbance from the BMA Bowen Basin Coal Growth Project. These concerns were expressed at the start of the project, when BMA tried to get communities' feedbacks during the Environmental Impact Statement process.

#### 4.1.2 Responses to Social Impacts

In terms of negative social effects that FIFOs bring, local communities were dissatisfied that BMA continued hiring more non-resident workers. According to a news report from Australian Mining, BMA promised the Moranbah community that it would employ over 50% local workers before Caval Ridge and Daunia mines were built in the end of 2008. It then changed its plan and decided to employ 100% FIFOs in both mines. As local communities were furious, BMA amended its plan to include some local workers. However, the majority remained FIFOs. This event ended unhappily, and CFMEU labeled it as a betrayal of the communities. In 2011, BMA miners' wives delivered a letter to BMA headquarters, saying that their life of quality was declining due to expensive rents, the high price of daily goods, and outdated infrastructure. However, there was no response from BMA.<sup>56</sup>

Labor unions such as CFMEU are also dissatisfied with BMA for recruiting more FIFOs. Miners' Union national secretary Andrew Vickers said local workers experienced negative effects of the mining boom, such as significant job cuts in recent months.<sup>57</sup> Labor unions pointed out that BMA is not interested in investing in regional communities. It only provided temporary accommodation to FIFOs.<sup>58</sup> As discussed below, this tension between BMA and unions has been an important factor contributing to union strikes at BMA mines.

#### 4.2 BMA's Approaches to Community Relations

Responding to environmental and social concerns from local communities, BMA has made some efforts to improve its image.

For land disturbance, BMA is rehabilitating mine sites. BMA preserved the removed topsoil in a separate location and supplied water and fertilizer to the topsoil so that vegetation would not die. After mining, the crater will be backfilled with earth removed from mining operations and covered by the stockpiled topsoil with its preserved vegetation. BMA has employed ecology specialists to advise its rehabilitation efforts.<sup>59</sup> In 2008, BMA also introduced a guideline for sustainable mine landforms to guide its

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<sup>54</sup> Paul Milton Butler, "Opposition Calls for Iron-clad Guarantee of Safe Water," *The Bulletin*, November 23, 2012, accessed April 20, 2013, <http://www.themorningbulletin.com.au/news/rockhampton-residents-warned-over-mine-water-disch/1633240/>.

<sup>55</sup> "Old Mine Floodwater Releases Jeopardize Fresh Water Supply: Environmentalists," *Financial Review*, January 28, 2013, accessed April 20, 2013, [http://www.afr.com/p/national/qld\\_mine\\_floodwater\\_releases\\_jeopardise\\_kCsLMYrYTYzozYsgLdWkpl](http://www.afr.com/p/national/qld_mine_floodwater_releases_jeopardise_kCsLMYrYTYzozYsgLdWkpl).

<sup>56</sup> Cole Latimer, "The fight we had to have-The BMA Battle in the Bowen Basin," *Australian Mining*, July 4, 2012, accessed April 20, 2013, <http://www.miningaustralia.com.au/features/the-fight-we-had-to-have-the-bma-battle-in-the-bow>.

<sup>57</sup> "BHP Snubs Local Queensland Workers," *Australian Mining*, February 25, 2013, accessed April 20, 2013, <http://www.miningaustralia.com.au/features/bhp-snubs-local-queensland-workers>.

<sup>58</sup> "FIFO/DIDO Policy," *CFMEU website*, accessed April 23, 2013, <http://qld.cfmeu.asn.au/index.php/about-work/fifodido-policy>.

<sup>59</sup> "Land Rehabilitation at Post-Mining Sites," *Mitsubishi Corporation*, accessed April 20, 2013, <http://www.mitsubishicorp.com/jp/en/csr/sustainability/sustainability04.html>.

rehabilitation process.<sup>60</sup> Although rehabilitation cannot entirely restore the sites to their original state, it mitigates harm to the environment. Research from 2000-2006 showed that after rehabilitation to pasture, BMA's Norwich Park and Blackwater mines supported livestock weight gains similar to results on un-mined land during the same seasons.<sup>61</sup>

In addition to land rehabilitation, BMA consulted with the community as part of an environmental impact study when it developed two new mines, Daunia and Caval Ridge, in 2008. During the consultation, BMA informed local communities through mobile displays in different regions. It also established a Community Reference Group, consisting of organizations such as community groups, government agencies, environment groups, and local businesses, to learn of community concerns and work together to form a mitigation strategy.<sup>62</sup> For instance, regarding potential dust impacts, BMA proposed a range of measures to manage dust, including watering haul roads and other exposed areas, rehabilitating areas no longer used for mining, controlling land disturbance, enforcing speed limits on unsealed roads, and preventing potentially spontaneous combustion of coal material.<sup>63</sup> Studies to determine the effectiveness of these measures have yet to be conducted.

BMA also tried to improve its relationship with the local community in Central Queensland. It established BMA Partnerships Program in 2002, to "support initiatives that promote partnerships with government, training and community support organizations in the communities in which BMA operates."<sup>64</sup> It invested \$1 million into the program in 2008, covering most of the Bowen Basin and Mackay regions where BMA operates.<sup>65</sup> The program encompasses five key areas: regional infrastructure support, such as subsidies, maintenance of local roads and other infrastructure, and water subsidies; local site initiatives, which will sponsor a range of community causes; landmark projects; community partnership programs designed to address social needs in BMA towns; and a skills for growth plan to promote skills and interest in fields related to the mining industry.<sup>66</sup> In 2007, BMA donated \$AU 866,415 to over 400 non-profit organizations for community services, youth sporting groups, health organizations and welfare groups.<sup>67</sup> Through these efforts, BMA sought to enhance bonds with local communities and finally build a good relationship.

However, BMA's approaches have limitations. First, BMA has yet to positively respond to polluted water discharges issues. According to local media, in response to water discharge complaints in 2011, a BMA

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<sup>60</sup> BHP Billiton, *BMA Guideline for the Design of Sustainable Mine Landforms*, November 2008, accessed April 20, 2013, <http://www.bhpbilliton.com/home/aboutus/regulatory/Documents/2009DauniaCoalAppendixJBmaSustainableLandformGuideline.pdf>.

<sup>61</sup> BHP Billiton, *Case Study: Managing Land for Rehabilitation*, accessed April 20, 2013, <http://www.bhpbilliton.com/home/aboutus/sustainability/reports/Documents/2012/ManagingLandForRehabilitation.pdf>.

<sup>62</sup> BHP Billiton Mitsubishi Alliance, *BMA Growth Newsletter*, 2008, accessed April 20, 2013, <http://www.bhpbilliton.com/home/aboutus/regulatory/Documents/creisAppE4ConsultationMaterial.pdf>.

<sup>63</sup> BHP Billiton Mitsubishi Alliance, *BMA Growth Newsletter*, 2008, p.59.

<sup>64</sup> Centre for Social Responsibility in Mining, *CPP Evaluation Report* (January 2009), p. 4.

<sup>65</sup> Centre for Social Responsibility in Mining, *CPP Evaluation Report* (January 2009), p. 4.

<sup>66</sup> Centre for Social Responsibility in Mining, *CPP Evaluation Report* (January 2009), p. 4.

<sup>67</sup> "BMA Mines," *Mine Sites*, accessed on April 20, 2013, <http://www.infomine.com/minesite/minesite.asp?site=bma>.

spokeswoman claimed that the mines released water in accordance with Queensland government regulations.<sup>68</sup> There was no response about the excess discharges or the easing of regulations.

BMA has also failed to address the negative social impacts of increasing numbers of FIFOs. Conversely, it hired more FIFOs for its new Caval Ridge mine and built worker camps instead of investing in communities. Local communities and labor unions opposed BMA's decision. As for FIFOs, they are also dissatisfied with working rosters and temporary accommodation. This dissatisfaction and distrust triggered by the replacement of the new workplace agreement led to a long dispute between BMA and the unions.

### 4.3 Dispute between BMA and Unions

The dispute between BMA and the three labor unions started in November 2010, when the organizations representing 3,500 workers in BMA-held mines intended to negotiate with the BMA to replace the BHP Coal Pty Ltd Workplace Agreement of 2007. The agreement, which was set to expire on May 16, 2011, covered workers at the Goonyella Riverside, Blackwater, Gregory, Crinum, Peak Downs, Saraji, and Norwich Park Mines. Workers' demands in the negotiations included the following:

- Enhance safety management, including coverage of safety-critical roles in the agreement;
- Pay equally for work of equal value performed by contractors who sign contracts with the employers for specific programs and labor-hire workers.
- Increase access to promotions and improve training for permanent laborers;
- Change shifts and working hours;
- Change disciplinary procedures; and
- Improve worker welfare including superannuation and annual leave entitlements<sup>69</sup>

However, BMA declined negotiation of the workers' demands for a new agreement. It also closed Norwich Park coking coal mines in April 2012 due to the slumping coal price, which affected nearly 1,300 workers' employment. Organized by unions, workers in five mines, including Goonyella-Riverside, Peak Downs, Crinum, Blackwater and Saraji, engaged in several strikes from June 2011 to August 2012 to protest BMA's refusal to negotiate. During the protest period, BMA initially offered another new employment contract, but it was rejected by workers, as the offer was tied to a range of cost-cutting tradeoffs to boost productivity at the expense of working conditions and worker safety.<sup>70</sup> Unions then organized another strike to fight for their interests. A BMA spokeswoman stated that the strike was

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<sup>68</sup> "Mine Discharges Worsen Floods," *Brisbane Times*, October 1, 2011 accessed April 20, 2013,

<http://www.brisbanetimes.com.au/queensland/mine-discharges-worsen-floods-farmers-20110930-1110l.html>.

<sup>69</sup> Australian Council of Trade Unions, Briefing Note: Shareholder Risk and BHP Billiton, June, 2012, accessed April 20, 2013, [http://www.actu.org.au/Images/Dynamic/attachments/7667/BMA\\_Letter\\_and\\_Briefing\\_Note\\_260612\\_v2.pdf](http://www.actu.org.au/Images/Dynamic/attachments/7667/BMA_Letter_and_Briefing_Note_260612_v2.pdf), p. 2.

<sup>70</sup> Richard Phillips, "Australian Coal Miners Strike Over Safety, Wages, and Conditions," *World Socialist Web Site*, February 20, 2012, accessed February 5, 2013 <http://www.wsws.org/en/articles/2012/02/bowe-f20.html>.

“unnecessary and would be harmful for all concerned.”<sup>71</sup> She stressed that BMA is “focused on finalizing an agreement and will resume discussions to complete the agreement as soon as possible.”<sup>72</sup>

The dispute also raised attention from both Japanese investors and the government of Queensland. During the dispute period, Japanese investors expressed their concerns and worries over the BMA-union dispute, since they had a considerable stake in a stable and consistent coal supply. When Queensland Treasurer and Trade Minister Tim Nicholls visited Tokyo during the dispute, he met with Mitsubishi corporate officers and other representatives from large Japanese trading companies. Mr. Nicholls said afterwards, “[A] number of the steel companies here in Japan are concerned about security of supply. They are concerned about the uncertainty that it engenders for them in terms of their supply of raw materials, so the longer it goes, the more the concern seems to increase.”<sup>73</sup> He added, “The dispute in the Bowen Basin is an issue that has been raised with me, not simply by the company (BHP Billiton and Mitsubishi's BMA joint venture), but also by the customers of the company. While there is an understanding of Australia's labor relations environment, they do want to see a resolution of it soon.”<sup>74</sup> Former Australian Council of Trade Unions president Bill Kelt was also sent on behalf of Workplace Relations Minister Bill Shorten to mediate with BMA and unions.<sup>75</sup>

The two sides finally reached an agreement on October 22, 2012, after 60% of BMA workers voted in favor of BMA’s latest offer. The agreement will offer the following provisions:

- BMA will hire safety check inspectors to ensure workers’ safety;
- An increase from 9% to 12% in retirement savings;
- New scheduling arrangements, which promised start and finish times for shifts that are shorter than 12 hours and 45 minutes; and
- Scheduling and housing flexibility for both workers nearby and those having to commute

## 5. Analysis of BMA’s Mining Operations

### 5.1. Costs of Dispute between BMA and Labor Unions

The long dispute between BMA and unions was detrimental to BMA. BMA suffered a vast financial loss. It was reported that a seven-day industrial action (a law term in the Fair Work Act, referring to workers’ legal protest against enterprises) on seven BMA mine sites would cost the company \$US 150 million.<sup>76</sup> BMA president Stephen Dumble believed that industrial action made mining operations “enormously difficult.”<sup>77</sup> According to the BHP March quarterly production report, work strikes and other industrial

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<sup>71</sup> “Update 1- Workers to strike at BHP Billiton Australia Coal Mines,” *Reuters*, May 18, 2012, accessed February 5, 2013, <http://www.reuters.com/article/2012/05/18/bhp-union-idAFL4E8GI53120120518>.

<sup>72</sup> Reuters.

<sup>73</sup> Rick Wallace, “Miners’ Row Spooks Japanese Investors,” *The Australian*, July 20, 2012, accessed February 5, 2013, <http://www.theaustralian.com.au/national-affairs/industrial-relations/miners-row-spooks-japanese-investors/story-fn59noo3-1226430452829>.

<sup>74</sup> Wallace.

<sup>75</sup> Wallace.

<sup>76</sup> “BHP Billiton Miners Plan Week long Strike,” *Mining-technology.com*, February 10, 2012, accessed February 5, 2013, <http://www.mining-technology.com/news/newsbhp-billiton-miners-plan-week-long-strike>.

<sup>77</sup> Owen Jacques, “The Aftermath of the BMA v Unions Agreement,” *The Ipswich Advertiser*, October 23, 2012, accessed February 5, 2013,

actions, combined with monsoons that hurt operations, have caused a 14% drop in metallurgical coal production.<sup>78</sup> The BHP 2012 Annual Report also admitted that Production at BMA-owned Queensland Coal was constrained largely by industrial action such as strikes. BMA lost \$1.1 billion EBIT (earnings before interest and taxes) due to the lower production volumes and higher operating costs.<sup>79</sup>

Aside from specific financial losses, there are other less visible costs for BMA. One cost is that senior staff in BMA had to spend more time to manage the dispute. The opportunity cost may be large assuming that senior staff had other important tasks.

Another cost for BMA is damage to the company's reputation. BMA's reluctance to negotiate with workers' demands led to worker frustration. The district president of CFMEU, Mr. Smyth, said the deal "could have been reached a year ago had BHP not taken an ideological approach that prioritized picking a fight with its workforce over coming to a reasonable deal." During this dispute, worker unions characterized the BMA as "Supporting family separation," or "Supporting camps, not communities."<sup>80</sup> This damage to BMA's reputation may harm the company's ability to attract skilled workers.

## 5.2. Cost of Polluted Water Discharge

BMA's excess water discharges prompted letters of warning from the government. Moreover, the photos that Greenpeace released are harmful to BMA's global reputation. According to Reputational Risk Radar (RepRisk), BHP Billiton ranked the fourth most controversial mining company of 2011, due to negative impacts on communities and the environment. BMA was also mentioned in the BHP Billiton case for environmental and community issues around Peak Downs and Saraji mines.<sup>81</sup>

## 5.3. Potential Risks of BMA's Mining Operations

Although BMA has settled the dispute with labor unions, potential risks to its mining operations still exist. BMA did not address local communities' concerns about negative impacts caused by FIFOs on local communities. FIFOs still have an atypical working schedule, which is harmful to both their health and to building good connections with local communities. The tensions between BMA and labor unions have not eased. While workers finally agreed to a new deal with the BMA, AMWU Bowen Basin organizer Jason Lund believes that there is little improvement over the previous deals.<sup>82</sup> As the new workplace agreement covers three years, it may be possible that another dispute will occur.

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<http://www.ipswichadvertiser.com.au/news/aftermath-bma-v-unions-agreement/1593006/>.

<sup>78</sup> Reuters.

<sup>79</sup> BHP Billiton, *BHP Billiton Annual Report 2012*, accessed February 5, 2013,

<http://www.bhpbilliton.com/home/investors/reports/Pages/Roll%20up%20Pages/2012-Annual-Report,-Summary-Review-and-Form-20-F.aspx>, p. 98.

<sup>80</sup> Grier Williamson and Alaina Earl, "Strike Stand Firm," *Daily Mercury*, February 16, 2012, accessed February 5, 2013,

<http://www.dailymercury.com.au/news/strikers-stand-firm-bma-billiton-mitsubishi-mine/1273857/>.

<sup>81</sup> RepRisk, Most Controversial Mining Companies of 2011, March 2012, accessed April 20, 2013,

[http://www.reprisk.com/downloads/mccreports/23/150312%20Top%2010%20Most%20Controversial%20Mining%20Companies\\_RepRisk.pdf](http://www.reprisk.com/downloads/mccreports/23/150312%20Top%2010%20Most%20Controversial%20Mining%20Companies_RepRisk.pdf).

<sup>82</sup> Owen Jacques, "Disputes between Workers and BMA after New Enterprise Deal," *My Daily News*, November 2, 2012, accessed February 5, 2013, <http://www.mydailynews.com.au/news/disputes-between-workers-and-bma-after-new-enterpr/1606927/>.

Furthermore, BMA did not solve polluted water discharges issue. Since Greenpeace and local communities are paying continuous attention to the environmental controversy, BMA may face tougher challenges in the future if it does not positively solve the problems.

## **6. Conclusions and Recommendations**

As the world largest coking coal exporter, BMA's mining operations have significant and complicated impacts on local communities in Bowen Basin in Australia. On the one hand, mining booms bring economic benefits; for instance, the Queensland government earns vast tax revenues. On the other, mining operations negatively impact the biological environment of Bowen Basin and increase tensions between local communities and the BMA.

Admittedly, BMA made some improvements on building a good relationship with local communities. It employs ecology specialists during the process of land rehabilitation at post-mining sites. It also created the Community Partnerships Program in 2002 to address social needs of the employees and families in Central Queensland towns. The program invested \$1 million in local community programs for a better community-company relationship. The BMA also established a community consultation process during expansion of mines, which provided another channel for BMA to communicate with local communities. The communities raised several concerns during the consultation, such as water discharged, noise, dust near mines, and local employment.

Facing communities' worries and concerns, however, BMA did not completely address the social and environmental controversies. It has not properly responded to mine-affected water discharge problems during the wet season. There are still worries and complaints about air quality and noise pollution near mining operations. Additionally, it broke its promise made during the community consultation process of hiring more local residents in mines. Instead, it employed more non-resident workers to decrease its costs.

Local media, NGOs, and local communities used various approaches to respond to BMA's negative actions. Media coverage reported on BMA's polluted water discharges. Greenpeace released photos about water pollution in Issac River caused by BMA's four mines. Local communities had several campaigns to protest BMA's hiring of non-resident workers in Moranbah, and labor unions organized BMA's workers to hold strikes during 2011-2012 to fight for workers' interests, work conditions, and welfare. BMA suffered a huge financial loss due to the strikes.

Although BMA still earns vast profits after the controversies, it needs to take cautious steps to build a sustainable relationship with local communities. With the rise of civil society in this information age, BMA's behaviors are regulated not only by government but also by media, NGOs, and other communities. Those community partnership programs and community consultation processes are not superficial measures to show companies' environmental or social friendliness. They should be measurable and legitimate for a long-term, trustworthy community-company relationship.

## 6.1 Recommendations for Multinational Mining Companies

### **Build measurable community consultation mechanism.**

Multinational mining companies need to build a measurable and effective community consultation mechanism before commencing mining operations. A measurable community consultation mechanism should have several key elements:

- 1) **Stakeholder identification:** Companies need to find who has interests during mining operations, and meet with stakeholders with potential issues associated with mines. Generally, potential stakeholders involved in mining operations include government agencies, local residents, NGOs, landowners, etc.
- 2) **Consultation approaches:** After identifying stakeholders, mining companies should engage in a consultation process. Consultation approaches can encompass building a community consultation committee consisting of stakeholder representatives, sending feedback forms to stakeholders, and notifying the public about the facts of mining operations through various mass media.
- 3) **Feedback report:** Companies should then gather feedbacks from consultation and create public reports about the feedback. The reports also need to highlight stakeholders' concerns about mining operations and how the mining company will address those potential problems.
- 4) **Behaviors as promised:** Companies should behave as they promise to in the feedback report to operate mines. Inform stakeholders promptly about the mining operations related to stakeholders' interests.

### **Partner with professional NGOs to develop community programs.**

Most foreign investors are not familiar with local culture and communities. In order to build sustainable community-company relationship, multinational mining companies can partner with professional and well-known NGOs who understand the needs of local communities, and develop community programs. NGOs can give periodic feedback on the progress of community programs.

### **Set higher environmental standards than the local government in order to avoid controversies.**

Host countries and local governments, especially those in developing countries, may set relatively low environmental standards in order to attract foreign investment. Such behaviors, however, may cause harm to environment. In the case of BMA, the Queensland government lowered the standards of water discharges during the wet season. The Queensland government's behaviors have caused doubts and criticism from NGOs and local communities. Although BMA followed local regulations, this was also adverse to its reputation. Thus, companies need to maintain a high environmental standard to avoid controversies.

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## Appendix

### I. BMA Mines' Excess Discharges during 2011-2012 Wet Seasons

Time	Mine	Excess Release
12/2/2011	Goonyella Riverside & Broadmeadow	EC 1388 $\mu\text{S}/\text{cm}$
1/6/2012	Goonyella Riverside & Broadmeadow	Tailings Dam embankment breached
1/16/2012	Saraji	EC excess release
1/26/2012	Saraji	EC 1015 $\mu\text{S}/\text{cm}$ downstream for 5 minutes
1/30/2012	Peak Downs	Excess sulfate
2/1/2012	Peak Downs	Excess sulfate
2/17/2012	Goonyella Riverside & Broadmeadow	Excess release caused river turbidity
2/24/2012	Goonyella Riverside & Broadmeadow	EC 1036 $\mu\text{S}/\text{cm}$
3/18/2012	Goonyella Riverside & Broadmeadow	Copper excess release
3/19/2012	Peak Downs	Excess sulfate
3/21/2012	Peak Downs	Excess sulfate
3/22/2012	Peak Downs	Excess sulfate
3/22/2012	Gregory Crinum Mine	EC 935 $\mu\text{S}/\text{cm}$
3/23/2012	Gregory Crinum Mine	EC 935 $\mu\text{S}/\text{cm}$

# Broken Hill, Broken River

Broken Hill Proprietary and the Ok Tedi Mine

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## **Abstract**

This is a case study of the Ok Tedi Mine located in the Western Province of Papua New Guinea in the period of 1979-2001, during which it was operated by the Broken Hill Proprietary (BHP) mining corporation. The mine caused high levels of environmental degradation along the nearby Ok Tedi and Fly rivers, which prompted a lawsuit against BHP that the company lost and eventually led to its complete withdrawal from the project. This case study will analyze the failures of BHP in managing the environmental and social aspects of the project with the aim of preventing such mistakes to occur in the future.

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# 1. Introduction



Figure 4: Map of Papua New Guinea and the Ok Tedi Mine. Map courtesy of vidiani.com

## 2. Background

### 2.1. Country Profile

The Ok Tedi mine can be found in the trackless jungles of Papua New Guinea (PNG), a nation of over six million people. Located in a resource-rich country, the Ok Tedi mine is part of a long mining history that has developed alongside PNG's politics and culture. Mining began in PNG with the discovery of gold in 1880,<sup>1</sup> and throughout the 1920s and 1930s, significant amounts of gold were extracted from the country by the various administrators of PNG at that time, including Britain, Germany, and Australia. With the development of mining after independence in 1975 and throughout the 1980s and 1990s, the mining industry soon became the largest single contributor to PNG's Gross Domestic Product (GDP).<sup>2</sup>

Free from colonial rule after Australia relinquished the country in 1975, the national government of PNG is based in Port Moresby, the country's largest city. Despite its growing economy and its natural abundance in gold and other important minerals, PNG is still overwhelmingly poor, and most of its citizens survive on less than \$2,500 per year. As an example of how important mining is to the nation, and how controversial it can be, the only instance of armed opposition against the government occurred

1. Graeme Hancock, *Mining in Papua New Guinea*. Pacific Minerals in the New Millennium – The Jackson Lum Volume, (2009), Accessed April 9 2013 <http://ict.sopac.org/VirLib/TB0011.pdf#page=17>, 17.

2. *Mining in Papua New Guinea*, 18.



in Bougainville, an island off the coast of the main island of Papua. The conflict became acute in 1988, partly due to issues regarding environmental damage from mining and financial malfeasance on the part of the central government in distributing mining revenues. The islanders fended off repeated attempts by the central government to suppress the revolt. By the time the conflict had ended and an agreement reached giving Bougainville semi-autonomous status, nearly 15,000 people had perished in the fighting.<sup>3</sup>



Figure 5 : Map of Fly River Basin. Image credit: UNEP

## 2.2. Mine Profile

The Ok Tedi mine is located next to the Star Mountain range in the Western Province of PNG, not far from the Indonesian border. It is within thirty kilometers of the town of Tabubil, a planned community of 14,000 inhabitants that was designed to house labor for and provides services to the Ok Tedi mine in varying capacities. The region receives very high rainfall, and the Ok Tedi and Fly Rivers, which flow next to the mine, have highly variable volumes based on the amount of rainfall they receive.<sup>4</sup>

The Ok Tedi mine is an open-cut mine that sits atop a vast porphyry deposit of copper and gold. The mine's operations consisted of extracting copper and gold from Mt. Fulabian, processing it into a slurry, and then placing it in pipelines for transport to the river port of Kiunga,

130km downstream on the Fly River. From Kiunga, the copper concentrate is dried and placed into bulk cargo carriers for shipment overseas.<sup>5</sup> Mine production from 1984 to 1994 created an average of 80,000 tons of waste tailings and 121,000 tons per day of waste rock,<sup>6</sup> and copper and gold production by 1998 exceeded 1.8 million and 6.5 million ounces, respectively.<sup>7</sup>

3. Donald Denoon, *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, (Melbourne: Melbourne University Press 2000), accessed April 10 2013, [http://hdl.handle.net.proxyau.wrlc.org/2027/heb.03576.0001.001\\_2](http://hdl.handle.net.proxyau.wrlc.org/2027/heb.03576.0001.001_2)

4. Food and Agriculture Organization, "Papua New Guinea", FAO Corporate Document Repository (2000), accessed April 25 2013, <http://www.fao.org/docrep/006/AD672E/ad672e14.htm>.

5. Murray Eagle and Roger Higgins, "Environmental Investigations of the Effects of the Ok Tedi Copper Mine in the Fly River System," Ok Tedi Mining Ltd (1990), accessed on March 23 2013, [http://msm-host3-reefed.gbrmpa.gov.au/\\_data/assets/pdf\\_file/0017/4139/ws016\\_paper\\_05.pdf](http://msm-host3-reefed.gbrmpa.gov.au/_data/assets/pdf_file/0017/4139/ws016_paper_05.pdf), 102.

6. Stephen Swales and Andrew Storey and Kayemen Bakowa, *Temporal and spatial variations in fish catches in the Fly River system in Papua New Guinea and the possible effects of the Ok Tedi copper mine*. *Environmental Biology of Fishes* (vol 57: 75–95, 2000), accessed April 10 2013, <http://link.springer.com.proxyau.wrlc.org/content/pdf/10.1023%2FA%3A1007513906281>, 76.

7. International Institute for Environment and Development, "Mining for the Future Appendix H: Ok Tedi Riverine Disposal Case Study," International Institute for Environmental Development & World Business Council for Sustainable Development (April 2002), 7.

## 2.3. Stakeholder Profile

The first corporation to lay eyes on the Ok Tedi Mine was actually not BHP, but Kennecott Utah Copper. Kennecott is a global mining company headquartered in Utah, USA and it was in negotiations with PNG to develop the Ok Tedi Mine before 1975. However, for internal reasons Kennecott decided to leave the negotiations.<sup>8</sup> To fill the vacuum BHP, Amoco Minerals, the PNG government, and a German consortium led by Metallgesellschaft AG coalesced to form Ok Tedi Mining Limited (OTML). BHP and Amoco Minerals initially each held a 30% share, with the German consortium and PNG holding 20% each.<sup>9</sup> As BHP was the operator of the mine, references in the paper to OTML should be considered to primarily represent BHP.

**BHP is an Australian corporation headquartered in Melbourne. The company was founded in 1885 to mine “Broken Hill” in New South Wales, Australia. It had since grown and become Australia's leading corporation in terms of size and revenue by the time it decided to invest in PNG. In 2001 BHP merged with the UK mining company Billiton to become BHP Billiton, one of the largest mining corporations in the world.**

Amoco Minerals was a subsidiary of the American oil company Amoco that was created as a foray from oil and into mineral rights and mining. Amoco Minerals became the Cyprus Minerals Company in 1993 and is now a part of the Freeport-McMoRan mining corporation. The German consortium consisted of the Council of German Lutheran Churches and Metallgesellschaft AG, one of Germany's largest industrial conglomerates.

Amoco Minerals and the German Consortium pulled out of the mine in 1993, before the lawsuit against BHP was filed.<sup>10</sup> As a result, BHP increased its share to 60%. A Canadian copper company, The Inmet Mining Corporation, stepped in for 20% of OTML and PNG retained its 20% stake. In 1996, after the lawsuit, BHP reduced its share to 50% and PNG increased its stake to 30%. In 2001, BHP and Inmet Mining decided to quit the mine and transfer their shares to PNG. PNG is currently the sole owner of the project.

## 3. Impacts

### 3.1. Environmental Impacts

Like any industrial activity, the operation of a mine creates a large amount of waste that is commonly referred to as mine tailings. Mine tailings are a slurry-like substance composed of chemicals, water, and crushed rock left over from the chemical and mechanical processes used to extract ore.<sup>11</sup> Normally, tailings are stored in retentive ponds or tanks, but in the case of the Ok Tedi mine the tailings were discharged directly into the Ok Tedi and Fly River. The reason why normal operating procedures were circumvented regarding the storage of mine tailings has much to do with the particular conditions of the Ok Tedi and the Fly Rivers.

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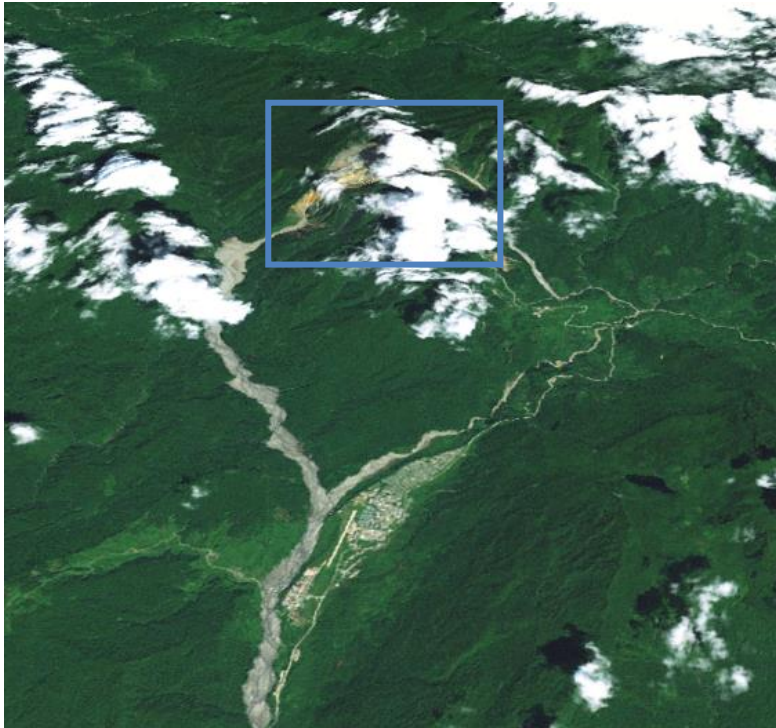
8. David Hyndman, *Ok Tedi: New Guinea's Disaster Mine*, *The Ecologist* Vol 18 No 1 (February 1988), accessed April 26 2013, <http://exacteditions.theecologist.org/browse/307/308/5396/3/26>.

9. Patricia Townsend and William Townsend, “Assessing an Assessment: The Ok Tedi Mine”, University of Buffalo (2002), 2.

10. Stuart Kirsch, *Indigenous movements and the risks of counter globalization: Tracking the campaign against Papua New Guinea's Ok Tedi mine*. *American Ethnologist*, Vol. 34, No. 2, pp. 303–321 (May 2007), 306.

11. John Engels, “What Are Tailings? - Their nature and production,” *Tailings.info* (2013), accessed on March 25 2013, <http://tailings.info/basics/tailings.htm>.

The Fly River is the largest river in terms of flow in all of Australasia.<sup>12</sup> Due to the very high level of rainfall in the area (up to 10 m annually), the Fly River outranks all of the world's major rivers in terms of runoff per unit of catchment area.<sup>13</sup> Runoff results from the inability of land to absorb rainfall. The high rate and volume of runoff has meant that Fly River has historically been very susceptible to flooding. The variability of the water level in the Fly and Ok Tedi River meant that the banks were prone to landslides. Indeed, in the process of constructing a mine tailings retention dam in 1986 for the Ok Tedi mine, a landslide was triggered that caused the dam to collapse, at which time further construction was put on hold.<sup>14</sup>



**Figure 5: Ok Tedi Mine (in box) sits atop Mt. Fubilan, adjacent to the Ok Tedi River. Image Credit: NASA**

Throughout its 1200 km length, the Fly River historically hosted a diverse and abundant supply of fish, with over 120 species calling the river their home.<sup>15</sup> Extensive monitoring of the river began in 1986 as part of an agreement between OTML and PNG. The agreement also gave the Ok Tedi mine permission to dump mine tailings directly into the river because of the seemingly insurmountable difficulty of erecting a mine tailings dam. The agreement required the mine to commission an environmental feasibility study of a permanent solution to mine tailing retention by 1990, but in the interim, allowed the mine to dispose of tailings in the river, as long as the

level of particulates did not exceed 940mg/l.<sup>16</sup>

Scientific evidence that the mine was producing negative effects on the river and its dependent ecosystem was discovered in bits and pieces by the monitoring system and, at least initially, did not cause alarm. A study commissioned by OTML in 1990 indicated that the mine did not place an undue burden on the river basin. Particulate matter remained below the required level of 940mg/l, and modest sedimentation and riverbank erosion were said to be the only real impacts of the mine. The report considered the marked decline in fish supply as an inevitable effect of the increased population in the area and more aggressive fishing practices by townspeople and villagers, factors in which pollution from

12. *Temporal and spatial variations in fish catches*, 76.

13. *Temporal and spatial variations in fish catches*, 76.

14. WRI, *Ok Tedi Mine: Unearthing Controversy*, World Resources Institute (2004), 4.

15. *Temporal and spatial variations in fish catches*, 76.

16. "Environmental Investigations of the Effects of the Ok Tedi Copper Mine," 104.

the mine was said to play no significant role.<sup>17</sup>

In 1994, OTML confirmed that the fish catch rate was declining rapidly, and that higher than normal levels of copper, zinc, cadmium, and lead were found in fish flesh, livers, and kidneys.<sup>18</sup> The report stopped short of saying that pollution from the mine was the main factor diminishing fish supply. The report noted that “long-term monitoring of fish populations has demonstrated significant declines... coinciding with the period of operation of the mine and the discharge of mine wastes into the Ok Tedi/Fly River system,” but concluded that “there is currently no evidence that mine operations are adversely affecting the floodplain ecosystem,”<sup>19</sup> Again, the authors pointed to overfishing and the destruction of local fishing habitats as the likely culprits.<sup>20</sup>

As awareness of the issue grew, independent observers and researchers published studies indicating that the problem was much more severe than the OTML environmental monitoring program was suggesting. The enormous amount of waste being dumped into the river had caused the river bed to rise substantially, causing it to flood far more frequently than usual and, when it did flood, to deposit mine tailings and waste onto the banks of the river and far inland. The heavy silt and mud would cover plants and crops while at the same time attacking the root system of the forest; it was discovered that more than 1,300 square km of vegetation died due to the flooding. The fish population was also decimated along the Ok Tedi and Fly rivers, with fish catches declining by 70-90%. It was believed that high levels of copper and other heavy metals either killed the fish or drove them from the area.<sup>21</sup>

### 3.2. Social Impacts

Papua New Guinea is an incredibly diverse nation, with over 800 languages and 200 distinct cultures. In the remote and largely ungoverned Western Province where the Ok Tedi Mine was constructed, the development of the mine brought immense changes to the social fabric of the tribes and villages in the area. It must be remembered that in the jungles of PNG at that time there were groups that had yet to see an outsider beyond an occasional anthropologist, or a machine more complicated than a windmill or jeep. In particular, the villages and tribes in the area were heavily dependent on the cultivation of a plant called sago, which they used for a variety of purposes, and which was so



Figure 6: Gathering of tribes in Papua New Guinea. Image credit: Jialiang Gao

17. “Environmental Investigations of the Effects of the Ok Tedi Copper Mine,” 117.

18. *Temporal and spatial variations in fish catches*, 109.

19. *Temporal and spatial variations in fish catches*, 108-110.

20. *Temporal and spatial variations in fish catches*, 110.

21. *Ok Tedi Mine: Unearthing Controversy*, 4.

central to cultural life that they maintained stories of the plant's origins through legend and folklore.<sup>22</sup> The ethic of the region prior to mine development was to be self-sufficient and work hard growing and harvesting sago, among other native plants and wildlife.

In 1984, the government of PNG was focused primarily on development. Eager to exploit its natural resources in order to assert its independence and increase its wealth, the central government saw the project as beneficial to people of the Western Province and the Ok Tedi/Fly River region. Certainly, they were proven right in some respects: The coffers of the national treasury grew dramatically with the \$155 million in annual revenue from taxing the mine, and OTML spent \$3 million per year on the construction of 133 community halls, 40 classrooms, two school libraries, 400 solar lights and pumps, 600 water tanks, 23 women's clubs, and 15 clinics.<sup>23</sup> The mine built an entire town with new and clean buildings and streets, and directly employed over 2,000 local residents who were supported by more than 1,000 other jobs within the town and across the region. Large investments in education and health reduced the rates of infant mortality and malaria dramatically and increased the average lifespan from about 30 years to over 50.<sup>24</sup>

The impact the Ok Tedi mine had on the people of the Ok Tedi/Fly River basin varied across locations and lifestyles. Villagers whose land was used to build the mine were compensated with a modest ownership share in the company.<sup>25</sup> Upstream villages have been less affected by pollution and are more affected by construction, a new influx of residents and foreigners, the introduction of a cash economy, the development of new services and facilities, and all of the social and cultural upheaval that these changes bring to previously isolated groups. Users immediately downstream faced these same impacts, as well as pollution flowing from the mine and into the river along which they live. Villagers further downstream were not immediately affected by the construction of the mine or the development that came with it, but nevertheless, were victims of the mine's pollution even though they lived outside the compensated area.<sup>26</sup> Over time, environmental degradation continued to spread and affect even more villages downstream.

The awareness of the region's inhabitants to the pollution of the Ok Tedi/Fly Rivers began with the mine's formation in 1983. Interestingly, and perhaps as a portent of things to come, the most serious incidents at the mine occurred soon after it began operations. In 1984, a barge overturned on the Fly River, dumping 2,700 60-liter drums of sodium cyanide into the water. A cleanup effort began but was only able to retrieve 117 of the drums. In the same period, untreated cyanide tailings were discharged from a bypass valve into the Ok Tedi River. OTML kept this second incident secret until dead fish were spotted floating in the river.<sup>27</sup> In spite of these serious incidents, the mine continued processing ore and dumping other mining wastes into the river. For the villagers, the timing of the cyanide spills coincided with the general idea that the Ok Tedi and Fly Rivers were already being negatively impacted by the mine

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22. Alison Dundon, *Mines and monsters: A dialogue on development in Western Province, Papua New Guinea*, *The Australian Journal of Anthropology*; Vol 13 No 2. (2002), 145.

23. Manuel Velasquez, *The Ok Tedi Copper Mine*, *Business Ethics: Concepts and Cases*, 6<sup>th</sup> ed, (New Jersey: Pearsen-Prentice Hall 2006), 252.

24. Manuel Velasquez, *The Ok Tedi Copper Mine*, 252.

25. Colin Filer, *West side story: the state's and other stakes in the Ok Tedi mine*, *The Ok Tedi Settlement: issues, outcomes, and implications*, National Center for Development Studies, (Canberra 1997), 63.

26. *West side story: the state's and other stakes in the Ok Tedi mine*, 66.

27. David King, *The big polluter and the constructing of Ok Tedi: eco-imperialism and underdevelopment along the Ok Tedi and Fly rivers of Papua New Guinea*, *The Ok Tedi Settlement: issues, outcomes, and implications*, National Center for Development Studies, (Canberra 1997), 99.

and in some cases caused villagers to abstain from drinking or swimming.<sup>28</sup> At this time, most of the waste in the river was crushed rock from the construction and the initiation of processing for the gold cap that lay above the copper deposit.<sup>29</sup>

In 1988, when the gold cap had been depleted and the production of copper began, the increased discharge rate of rock, copper residue, and other chemicals from the mine caused concern among downstream villagers, who reported the filling in of the river channel, more severe and frequent flooding, and the deposition of mine waste and dirty water on their riverside crops and gardens.<sup>30</sup> Stuart Kirsch, an anthropologist living with some of the downstream villagers at the time, confirmed in 1989 that “sediment is being deposited along the riverbanks, forming five and ten-meter wide stretches of knee-deep mud.”<sup>31</sup> Forest die-back, which began to occur in 1992, was at first restricted to isolated areas along the Alice River, but deteriorated progressively in 1994 and 1996 until a total of 67 square km were either dead or stressed due to pollution.<sup>32</sup>

The efforts of the affected villagers to report their concerns and observations to the PNG government and the OTML management were constrained by their inexperience dealing with members of the larger political community; they were certainly not familiar with the proper ways to engage the managers of a large multinational mining corporation. In fact, some of the villages had no real concept of modern politics because their local system of government was based on ethnic values of seniority or other types of merit.<sup>33</sup> When villagers first began to send letters voicing their opinions on the mine and river pollution, they wrote letters to every party related to the mine of whom they could think, and failed to distinguish between individuals who were in a position of authority and those who were not.<sup>34</sup> Furthermore, the type of correspondence the villagers used was from a very different cultural perspective, steeped in historical and cultural references. For instance, this quote is from a letter written by a Ningerum village in 1990: “[s]ince back to Australian time...the National Government is one eye to my people and myself. We Upper Ningerum people were left behind.” and “Our Tumbuna went up to Mt. Fublam [Fubilan] and then he become his home of Gold and copper. If you people understand theirs problem they will said OK dig the copper...”[sic].<sup>35</sup>

Due to a lack of familiarity with the local cultures, mine authorities had difficulty comprehending local issues, but by 1988-1989, a more or less formal list of complaints from the villagers became apparent:

1. That the river was becoming polluted to the point that drinking and swimming were discouraged.
2. That the fish supply was decreasing, almost to the extent that fishing was no longer a profitable excursion.
3. That the government failed to bring enough promised development in the form of schools,

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28. John Burton, *Terra nugax and the discovery paradigm: how Ok Tedi was shaped by the way it was found and how the rise of political process in the North Fly took the company by surprise*, The Ok Tedi Settlement: issues, outcomes, and implications, National Center for Development Studies, (Canberra 1997), 35.

29. *Terra nugax and the discovery paradigm*, 36.

30. *Terra nugax and the discovery paradigm*, 37.

31. as cited in John Burton, *Terra nugax and the discovery paradigm*, 38.

32. *Terra nugax and the discovery paradigm*, 39.

33. *Terra nugax and the discovery paradigm*, 33.

34. *Terra nugax and the discovery paradigm*, 41.

35. As cited in John Burton, *Terra nugax and the discovery paradigm*, 42.

hospitals, roads, and other needs

4. That more compensation was needed to offset the pollution and lifestyle changes brought about by the mine.

“I’m unhappy with what the company has done. They have spoiled out way of life. Before we lived easily: food from the gardens was plentiful, as was wild game. The river was fine: you could see the fish, the turtles and all the other animals living there. But now it is all gone and it’s hard. We’re suffering, so I’m unhappy about that.”<sup>36</sup> – Bumok Dumanop, Ok Tedi villager

Using these complaints, the villages along the rivers sent a petition to the PNG government in 1989 demanding that the mine tailings be contained and that compensation in the form of 13.5 million Kina (\$6.4 million in 2013 dollars) be distributed to the villagers living along the rivers.<sup>37</sup> A year after the petition was sent, and with neither an adequate response from the PNG government nor any change in the operations of the mine, the villagers decided to take action and blocked the main road leading

from the mining town of Tabubil to the dock and airport town of Kiunga. The protest was peaceful but culminated in the delivery of a new petition with more demands to the PNG government representative.<sup>38</sup> Between 1992 and 1994, there appear to have been more protests and public demonstrations, indicating that the villagers' concerns and requests for remediation and compensation were not adequately addressed. It was in this period that the villages began seeking outside aid.<sup>39</sup>

However, literature on the nature of the villagers' dissatisfaction diverges on whether local people were most unhappy about the pollution itself or the fact that compensation was insufficient or not distributed properly.<sup>40</sup> This is an important distinction, due to the fundamentally different remedies that could be applied. Ire over pollution in the river could be solved by either closing down the mine or constructing an alternative mine tailings catchment or pumping facility, while anger over compensation and development would require an increase in funding and an overhaul in the management of the relevant compensation funds. Based on the difficulty seen in the first attempt to build a mine tailings dam, it seems plausible that the latter solution would be significantly cheaper.

Prominent researchers and authors on the Ok Tedi mine lawsuit and environmental impact argue that the lawsuit and the main concerns of the villagers had less to do with the state of environmental pollution and had more to do with simmering resentments over the differences in compensation allocation between different geographical areas and groups by OTML.<sup>41</sup> This view suggests that the villagers would be happy having more development and funds come into their villages, even if the mine continues to pollute the river. There is evidence for this theory; perhaps most telling is that many of the petitions to the local PNG government demand monetary compensation rather than that the mine shut

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36. Stuart Kirsch, *Is Ok Tedi a precedent? Implications of the lawsuit*, The Ok Tedi Settlement: issues, outcomes, and implications, National Center for Development Studies, (Canberra 1997), 123.

37. *Terra nugax and the discovery paradigm*, 44.

38. *Terra nugax and the discovery paradigm*, 45.

39. *Terra nugax and the discovery paradigm*, 47.

40. *West side story: the state's and other stakes in the Ok Tedi mine*, 77.

41. *Is Ok Tedi a precedent? Implications of the lawsuit*, 129.

down to preserve the rivers.<sup>42</sup>

However, a counter-argument states that the people were dependent on the rivers for their livelihood, and that the destruction of the gardens and cropland that allowed them to survive on subsistence living forced them to seek money in order to buy food from the towns nearby.<sup>43</sup> In this view, their primary concern was the pollution and the environmental degradation that had occurred, but their most immediate priority was to secure a livelihood after they had lost their ability to provide for themselves. Alex Maun, a villager who represented the Ok Tedi villages during the lawsuit, writes in 1994 that “The lives of all the people along the OK river are a complete disaster...Because our means of survival is destroyed, we have been struggling for ten years to fight for our land and our lives damaged by Ok Tedi mine.”<sup>44</sup>

#### 4. Company Response

The construction of the Ok Tedi mine brought stakeholders together as early as 1976, after early exploration had discovered the vast mineral wealth. The first legislation regarding the mine was the Mining Act of 1976 (also known as the Ok Tedi Agreement). The act laid out economic and financial reasons for the mine and the royalty payments that BHP would give to the government. It also required BHP to funnel adequate development funds to the region, to create compensation “zones” for affected landowners, to locally source a significant majority mine labor, and to perform an environmental impact assessment before construction.<sup>45</sup>

However, the act declared that the activities related to the environmental impact statement could not exceed 150,000 PGK (about \$52,000 in 1999 dollars).<sup>46</sup> Initially, Ok Tedi Mining Limited (OTML) hired its own experts to conduct the first environmental study. In 1980, the national government prepared a

**Figure 7: Ok Tedi Mine. Image credit: Ok Tedi Mine CMCA Review**



second environmental impact study (EIS). The company-commissioned study declared that river bed aggradation from any waste tailings would not exceed .23 meters. However, the government-commissioned study declared that bed aggradation would reach 4 meters if the waste tailings were not contained.<sup>47</sup> This prompted the government to require a mine tailings dam and environmental monitoring system to be implemented for the Ok Tedi River.

42. *Terra nugax and the discovery paradigm*, 42-44.

43. *Is Ok Tedi a precedent? Implications of the lawsuit*, 129.

44. Alex Maun, *The impact of the Ok Tedi mine on the Yonggom people*, The Ok Tedi Settlement: issues, outcomes, and implications, National Center for Development Studies, (Canberra 1997), 114.

45. Mine (Ok Tedi Agreement) Act 1976, Independent State of Papua New Guinea (1976), accessed on March 26 2013, [www.paclii.org/pg/legis/consol\\_act/mtaa1976218.rtf](http://www.paclii.org/pg/legis/consol_act/mtaa1976218.rtf).

46. Patricia Townsend and William Townsend, “Assessing an Assessment: The Ok Tedi Mine”, University of Buffalo, (2002), 4.

46. “Assessing an Assessment: The Ok Tedi Mine”, 5.



The negotiations between the PNG government and OTML concerning environmental and social issues continued until the mine's opening in 1984. In 1978, an Environmental Planning Act was passed by the national government legislature creating more rigorous controls and reporting requirements for mining and other industrial projects. The Ok Tedi mine was not affected by the Act as the 1976 Ok Tedi Mining agreement took precedence because it was negotiated first.<sup>48</sup>

Numerous amendments to the original 1976 agreement came into force in the following years. In 1984, after the collapse and destruction of the original tailings dam under construction, an amendment allowed the company to use an "interim" tailings treatment plan that involved the treatment of cyanide-laced tailings with hydrogen peroxide before discharging it into the river. A further agreement in 1986 allowed the company to defer construction of a tailings dam until 1990, but did not set acceptable particulate levels until 1990 had passed and it became obvious that OTML was unwilling and/or unable to build a mine tailings dam.<sup>49</sup>

BHP and the PNG government had early indications that mine tailings would cause quite serious sedimentation and environmental problems: In a book published in 1982, Richard Jackson of the University of PNG identified that if there was no mine tailings dam, or if that dam were to fail, toxic copper & heavy metal levels as well as increased deposition of sediments would create a devastating effect on downstream users.<sup>50</sup> However, internally and externally, OTML continued to downplay the significance of the impact that the mine would make on the river, stating in a pamphlet to villagers in 1984 that: "The Ok Tedi River already has much sand in it... it is estimated that we will add 1.5 million tons per year... the only noticeable thing will be the water will probably look a little more dirty."<sup>51</sup> In 1984 two serious cyanide spills occurred and the response from the company, after hiding one of the spills for two weeks, was to ask the villagers to let experienced and qualified OTML scientists investigate and gave the assurance that "no more mistakes will be made."<sup>52</sup> Models of sedimentation were carried out by OTML engineers along the Fly River (where the mine's barges would operate) and they predicted that the tailings would cause the bed of the river to rise by about 2m, which was considered acceptable. They paid less attention to the Ok Tedi River, for which they foresaw no barge traffic, and they discounted the effects of flooding from the nearby mountains after a heavy rain, which any sediment increase along the river bed would magnify.<sup>53</sup>

Besides predictive modeling and observation of the rivers, OTML dispatched community relations officers periodically to hear complaints and deliver updates on the mining operations. These meetings are presumably where OTML could best hear about the effects that the mine waste discharged into the river was having on the downstream villagers, and indeed two community relations officers in 1988 reported to OTML the fact that the villagers were intent on submitting their first petition to the government.<sup>54</sup> Prior to that, most meetings had centered on jobs, local development, compensation

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48. Colin Filer and Benedict Imbun, *A Short History of Mineral Development Policies in Papua New Guinea, 1972-2002*, Policy Making and Implementation: Studies from Papua New Guinea, Australian National University. (Canberra 2002), 83.

49. "Assessing an Assessment: The Ok Tedi Mine", 4.

50. John Gordon, *The Ok Tedi Lawsuit in retrospect*, *The Ok Tedi Settlement: issues, outcomes, and implications*. National Center for Development Studies, (Canberra 1997), 145.

51. *Terra nugax and the discovery paradigm*, 36.

52. *Terra nugax and the discovery paradigm*, 37.

53. *Terra nugax and the discovery paradigm*, 37.

54. *Terra nugax and the discovery paradigm*, 37.

allocation, and the construction of water tanks to the villages when they no longer felt safe drinking water out of the river.

Despite the assurances from OTML that their environmental impact research was thorough, there are indications that many assumptions included in early OTML-sponsored environmental studies were inaccurate. What clouded much of OTML research into sedimentation was the high rate of river flow that could ideally discharge higher levels of sedimentation to the sea than normal. The assumption was that the Ok Tedi and Fly Rivers could handle the sedimentation but the company did not consider the effects of mountain water runoff, naturally occurring landslides (the largest of which dumped 120 million tons of sediment into the Ok Tedi in 1989), and the effects of El Nino from 1991-1993 that caused large parts of the region to become unusually dry due to lack of rainfall. The low water level reduced water flow and caused sediment to build up much more rapidly than before, which prevented residual copper from dissipating.<sup>55</sup>

OTML was ready to assume that some negative environmental impacts were occurring along the rivers, but that they were unavoidable due to the difficulty of erecting a suitable tailings dam, and that whatever was introduced into the river by the mine (after appropriate treatment for cyanide) would be washed out to sea quickly. The company also believed that after mine operations ceased in 2010, the river would return to normal after a period of time. Some managers at BHP denied environmental negligence even up to 1995.<sup>56</sup>

The company's response could mostly be seen through changes in the development fund and compensation trust, which had originally been created as a method to offset the perceived and real costs of social change and environmental impact. However, after the majority of compensation agreements had been reached by the early 1990s, there was little that OTML felt obligated to do, and the company became sluggish in responding to compensation pleas, which led villagers to accuse OTML community relations officers of being "all talk" and "greedy".<sup>57</sup>

## 5. Litigation and Withdrawal

In attempting to press a lawsuit against BHP in 1994, the villagers had a difficult challenge ahead of them. BHP was a foreign company with an international presence and revenues that ran into the billions. Furthermore, the legal case, although compelling in the form of evidence, stood on shaky ground due to the lack of international environmental law concerning appropriate compensation for environmental damages between multinational corporations and victims.<sup>58</sup> The villagers had exhausted all other forms of civilized action: They had petitioned the government and BHP repeatedly and were ignored each time; they filed a claim to the International Water Tribunal in the Netherlands, who censured the company but did little else. In the interim, scientists hired by a German investment consortium (who were investors in the mine at that time) delivered a condemning report on the environmental state of the rivers that validated scientifically the argument the villagers were trying to make.<sup>59</sup>

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55. *Terra nugax and the discovery paradigm*, 45.

56. *Terra nugax and the discovery paradigm*, 49.

57. *West side story: the state's and other stakes in the Ok Tedi mine*, 87.

58. *Is Ok Tedi a precedent? Implications of the lawsuit*, 132.

59. *The Ok Tedi Lawsuit in retrospect*, 143.

Lawyers in PNG were reluctant to prosecute the case on behalf of the villagers, and referred them instead to Slater & Gordon (S&G), a large law firm in Australia that had recently won an historic court case against an Australian asbestos mining company. S&G was approached by the villagers in 1992, and the firm accepted. The next two years were spent compiling evidence and establishing the extent of the suit.<sup>60</sup> In 1994, the firm launched a class action lawsuit against BHP in Melbourne, Australia courts on behalf of 30,000 Ok Tedi and Fly River region residents. The law firm felt confident that as BHP was an Australian company, the Australian court system would be able to hear their case.

S&G intended to submit evidence that the level of damage was higher than the company claimed, that they were not monitoring the river near the mine where pollution was highest, and that there was no monitoring of off-river water bodies and lakes critical in maintaining the ecosystem. Therefore, the initial claim included within it counts of negligence, nuisance, trespass, and a breach of statutory duty.<sup>61</sup>

BHP was ready to fight the lawsuit. First, they claimed that the Australian court did not have the jurisdiction to oversee the case. The court agreed and threw out a number of counts, leaving the plaintiffs with only a general count of negligence resulting in a “loss of amenity.”<sup>62</sup> BHP directed further attacks at the remaining claim, declaring that as the villagers were practicing only subsistence farming before the mine arrived, they would have suffered no monetary loss and the legal definition of negligence could not apply in this case.<sup>63</sup> The villagers and their representation successfully pushed back against this argument by stating that just because a people lived outside the usual economic system, and did not measure value in the same way as others, it did not mean they couldn't suffer an economic and livelihood loss.<sup>64</sup>

As the deliberations were continuing it was discovered that BHP lawyers were involved in drafting legislation with the PNG government that would force the villagers to choose between a compensation of 14 million PGK plus 4 million PGK per year (~\$6 million USD), or risk facing fines of more than 100,000 PGK (~\$40,000 USD) if they continued pursuing legal action against BHP in Australian courts.<sup>66</sup> The bill also stated that if the court found that BHP would need

“What distinguishes these claims from the usual claims that come before courts is that these plaintiffs are people who live a subsistence lifestyle... It simply cannot be right that because people exist outside the ordinary economic system, they therefore do not have rights where their lives are damaged by the negligence of others.”<sup>65</sup> - Julian Burnside, Queen’s Counsel for the Ok Tedi villagers

to remediate any part of the Ok Tedi/Fly River, the money that BHP must spend on that remediation would come directly out of the villagers' compensation. In response, the court of Victoria in Melbourne found BHP in contempt of court for attempting to punish the villagers for seeking redress through the court system. The proposed legislation (The Eighth Supplemental Agreement) was eventually re-cast

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60. *The Ok Tedi Lawsuit in retrospect*, 143.

61. *The Ok Tedi Lawsuit in retrospect*, 152.

62. John Gordon, *The Ok Tedi Lawsuit in retrospect*, 154.

63. John Gordon, *The Ok Tedi Lawsuit in retrospect*, 154.

64. *The Ok Tedi Lawsuit in retrospect*, 155.

61. *The Ok Tedi Lawsuit in retrospect*, 155

66. *The Ok Tedi Lawsuit in retrospect*, 157.

without the clauses of contention and passed the PNG legislature.<sup>67</sup>

Eventually, BHP decided to engage in comprehensive settlement negotiations with the villagers and their lawyers, and on the 8<sup>th</sup> of June 1996, both parties signed a settlement statement. The settlement included several provisions:

1. BHP would commit to find alternatives to discharging tailings into the river as soon as possible
2. BHP would undertake to dredging the Ok Tedi river to relieve the sedimentation issues
3. BHP would provide compensation in the form of 110 million PGK (\$82 million USD) to be allocated amongst all 30,000 villagers, with 40 million PGK (\$20 million) for residents of the most affected areas
4. BHP would commit at least 350 million PGK to clean up the Ok Tedi/Fly Rivers
5. The PNG government share in OMTL would increase by 10 percent and be used for development in the region.<sup>68</sup>

In fulfillment of one part of the settlement BHP dredged the rivers in 1998 in an attempt at making the rivers navigable once more and to reduce flooding, which resulted in an appreciable reduction in forest dieback in some areas along the Ok Tedi, but less along the lower reaches of the Fly River.<sup>69</sup> More importantly, the settlement forced BHP to find an alternative method of storing tailings. At the time it was thought by the plaintiffs and some PNG government officials that the best method was to construct a pipe that would take tailings from the mining site to a lowland storage area 30 to 50 kilometers away.<sup>70</sup> The estimated costs of the pipeline would be \$180 to \$250 million USD. However, in 1999 OTML released their required waste management studies with the conclusion that no amount of containment, either by pipeline or dam, would be able to significantly curtail the level of environmental degradation. After almost 15 years of operations the enormous amount of tailings already in the rivers would, the report explained, stay in the river for as many as 40 years after the mine had been depleted and was no longer in operation.<sup>71</sup> The company therefore believed that it was fruitless to spend many millions on waste management when it would no longer have an effect on the river.

By the end of 1999, BHP was left with a vexing dilemma: If BHP were to stay and continue operating the mine until it was expected to be depleted in 2010, they would have to pay for an expensive tailings management plan that would take a large chunk out of their profits and do little to remedy the environmental situation. If they continued to operate the mine and did not create a tailings management system, they would very likely be forced to pay more in the form of compensation, or risk involvement in another set of lawsuits. However, if they closed the mine, BHP would miss out on revenue from the mine for the next 10 years, and there would be no more revenue that could be used to clean up the rivers.<sup>73</sup>

In negotiating about the future of the mine, BHP's preference was to close it down, but the PNG

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67. *The Ok Tedi Lawsuit in retrospect*, 160.

68. *The Ok Tedi Lawsuit in retrospect*, 162.

69. "Mining for the Future Appendix H: Ok Tedi Riverine Disposal Case Study," 7.

70. Stuart Kirsch, *Indigenous movements and the risks of counter globalization: Tracking the campaign against Papua New Guinea's Ok Tedi mine*. *American Ethnologist*, Vol. 34, No. 2, pp. 303–321 (May 2007).

71. *Indigenous movements and the risks of counter globalization*, 306.

72. *The Ok Tedi Copper Mine*, 252.

73. *The Ok Tedi Copper Mine*, 252.

government prohibited BHP from doing so. Therefore, in 2001 BHP sold all of its shares in OTML to the PNG government and pulled out of the project completely. The government therefore assumed total responsibility for the mine's operations after 2001 and dedicated the ex-BHP shares as the Papua New Guinea Sustainable Development Program, which is meant to create lasting forms of economic development in the region.<sup>74</sup>

## 6. Comparative Analysis of the Panguna Mine

The Bougainville Rebellion was a significant moment in the history of PNG that had a strong impact on the unfolding series of events that occurred at the Ok Tedi Mine. Bougainville Island, off the coast of the main island, is ethnically and geographically a part of the Solomon islands. However, in 1919, Australia took over the island along with the rest of today's PNG and administered them as one territory. When PNG gained its independence in 1975, Bougainville became a part of the newly-formed country.<sup>75</sup>

CRA Ltd, an Australian copper and zinc mining corporation, developed the Panguna copper mine six years before independence on Bougainville Island under Australian government supervision.<sup>76</sup> The mine was initially administered by an entity called Bougainville Copper Ltd, composed primarily of CRA Ltd and private investors. At the time of its opening the mine was the largest open-pit copper mine in the world.<sup>77</sup> At such a pivotal time in PNG's history, the Panguna mine was considered essential by the central government for the revenues it would bring.<sup>78</sup>

The mine was created under the auspices of the Bougainville Copper Agreement Act of 1969 and proceeded without any prior environmental impact assessment.<sup>79</sup> Landowners who were not willing to give up their land were forcibly evicted to make way for Bougainville Copper Ltd construction crews. There was no provision made for the mine tailings that would be produced by the mine and little to no compensation given to the people who were most affected by the construction and operation of the mine.<sup>80</sup> Almost all of the revenue therefore went primarily to the shareholders and the national government of PNG.

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74. *The Ok Tedi Copper Mine*, 253.

75. Kerry Higgs, *The Bougainville Rebellion*, *The Women's Review of Books*, Vol. 22, No. 3, pp. 8-10 (Dec 2004), Accessed on March 22 2013 <http://www.jstor.org/stable/4024505>.

76. *The Bougainville Rebellion*.

77. Gold Mining in Papua New Guinea, Mbendi information Services, (March 2013), accessed on March 23 2013, <http://www.mbendi.com/indy/ning/gold/au/pg/p0005.htm>.

78. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 2.

79. Poreni Umau, *PLA want BCA repealed*, *Post-Courier Online* (8 June 2009), accessed on April 2 2013, <http://www.postcourier.com.pg/20120124/news18.htm>.

80. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 4.



**Figure 9: Bougainville Island (in red). Map courtesy of Wikimedia Commons**

In 1988, a Bougainville employee of the mine, Francis Ona, became dissatisfied with the mine leadership over environmental issues as well as inadequate local compensation and race-discriminating conditions at the mine. By that time the discharge of mine tailings into the Jaba river near the Panguna mine had caused severe environmental degradation and no efforts were made at compensating the local people for the environmental loss. Furthermore, the forced relocation of many villagers during the mine's construction was still a festering sore for the local population. Francis Ona quit the mine and formed the Bougainville Revolutionary Army (BRA) that same year with the goal of forcing the mine to cease operations and for Bougainville Island to eventually secede from PNG.<sup>81</sup>

The BRA took to sabotage in an effort to negatively impact the operations of the Panguna mine, and they succeeded with an attack on the mine's electrical supply in 1989. The mining operation ceased and by 1990, all PNG military as well as Bougainville Copper Ltd personnel had left the island. Francis Ona and the BRA declared independence from PNG and the central government responded with a quarantine of the island. What followed for the next decade was civil war in Bougainville between different tribes and villages that Francis Ona and the BRA did not have the resources to prevent. The violence was fed by PNG paramilitary forces and hired British/South African mercenaries that eventually led to 15,000 deaths before a cease-fire was brokered in 1997 and a peace treaty signed in 2001. Bougainville now operates as a semi-autonomous territory of PNG and has been promised a referendum on full autonomy sometime after 2010.<sup>82</sup>

The consequences of the Panguna mine constitute an important element of the context and narrative for

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81. *The Bougainville Rebellion*.

82. Bougainville Peace Agreement, independent State of Papua New Guinea, (30 August 2001), accessed on April 2 2013, [http://ips.cap.anu.edu.au/ssgm/resource\\_documents/bougainville/PDF/BougainvillePeaceAgreement29Aug01.pdf](http://ips.cap.anu.edu.au/ssgm/resource_documents/bougainville/PDF/BougainvillePeaceAgreement29Aug01.pdf).

the Ok Tedi mine. Both mines share crucial similarities, an analysis of which can give critical insights into the PNG government's decision-making mindset, the economic and political pressures that were caused by the closure of the Panguna mine, and the attitude of a multinational company operating in an impoverished and remote area. Both mines were developed within the span of less than a decade, both were primarily gold and copper mines, both were owned by a consortium of investors (which included the national PNG government), both were operated and majority owned by large Australian mining companies (BHP and CRA), both caused large amounts of environmental damage due to unrestricted mine tailings discharge into nearby rivers, and both were developed in areas where the local population still survived on a subsistence economy.

The case of the Panguna mine introduces the notion that the government of PNG had little experience, as late as 1969, in setting up the appropriate compensatory and regulatory measures necessary to ensure that any adversely affected population was adequately compensated. Bearing in mind that the initial law created to govern the Ok Tedi Mine was drafted in 1976, it is unreasonable to assume that the local or national government had adequately learned enough from their mistakes in Bougainville to avoid repeating them at Ok Tedi. The "agreements" that followed the 1976 Ok Tedi Mining Act inserted some of the lessons learned from Bougainville, but it is possible that if such measures were implemented sooner, there may have been less cause for conflict and litigation between the BHP and the local communities.

The Bougainville case also describes the attitude of the PNG government regarding how it treats dissension and how it interacts with large mining companies. There is little indication that the national government demanded less environmental damage and more compensation from the mine on behalf of the local population. As a stakeholder in the mine, and as a tax-revenue earning entity, the national government benefited greatly from the revenue of the mine and any diversion of that revenue towards compensation or expensive environmental remediation would have lessened the government's income when it had just become independent and needed funds the most.

In the Panguna mine case, the relationship between the national government and the primary investor of the mine, CRA Ltd, was colored by the geo-political situation that existed between Australia and PNG. The Panguna mine most likely had at minimum an indirect involvement of the Australian government, as CRA Ltd was an Australian company and the island of New Guinea was under Australian control at the time. Because the independence of PNG was a peaceful transition, it is likely that the exploitation of the Panguna mine was considered a key part of that transition, as it would bring in much needed levels of revenue and reduce Australia's foreign aid dependence. Therefore, the matter of constructing the mine at Panguna was not a choice as far as Australia and PNG's new government was concerned. Thorough environmental impact assessments and costly compensation/environmental preservation measures were also never really considered because of the large driving pressures to bring the mine to full operations as soon as possible.

The relationship between the mine operators, the PNG colonial administration before independence, the Australian government, and the PNG government after independence can therefore be said to be a more intimate and "cozy" relationship that put the development of the mine above any issue that could cause delay or constrain the profitability of the mine. In a book chronicling the Panguna mine debacle, Donald

Denoon has found indications that the Bougainville Copper Agreement passed in 1969 was unduly generous towards CRA Ltd and included a three-year tax holiday with no requirements to monitor or mitigate environmental damage.<sup>83</sup> Furthermore, PNG police were involved in incidents against rioters and protesting landowners, and assisted CRA Ltd in evicting landowners in 1969 to make way for BCL construction crews.<sup>84</sup>

The types of environmental impact of the Panguna mine are very similar to what occurred at Ok Tedi, albeit more severe. With no mandate to store mine tailings in an environmentally safe manner, the Jaba River near the Panguna mine was subject to over a billion tons of waste discharge during the operating lifetime of the mine (1972-1989).<sup>85</sup> Descriptions of the damage to the Jaba River and its surrounding ecosystem involve words, such as “moonscape” and “complete devastation”.<sup>86</sup> It is documented that the discharge caused the river to flood more frequently and even change course as it became choked with waste. The deposition of sediment eventually caused the destruction of more than 4,000 hectares of land and the death of nearly all life in the river.<sup>87</sup>

Social impacts to the local area also hold similarities with the impacts to the inhabitants near the Ok Tedi mine. Bougainville is a sparsely populated island that was even less developed than PNG. The establishment of the mine required the building of a small town, an airfield, port, numerous roads, a power plant, and other facilities. The native inhabitants, the Nasioi and Nagovisi people, were accustomed to a subsistence economy and were not familiar with western customs and culture.<sup>88</sup> Likewise, PNG officials from the capital and CRA Ltd representatives from Australia and Europe were not familiar with Nasioi and Nagovisi culture. For example, the Nasioi are a matriarchal society in which women hold important positions of authority, a fact that was difficult for western-bred negotiators to grasp and led to many misunderstandings.<sup>89</sup>

The introduction of a cash-based economy and the required influx of temporary and permanent workers from Australia, Europe, and the New Guinea mainland rapidly turned the pre-mine lifestyle upside down. An Australian journalist visiting the site in 1969 as construction began on the mine and associated facilities, described it as “a cross between a war-time invasion beachhead and a south pacific slum”.<sup>90</sup> A rough and tumble mining town developed rapidly as the mine began operations. Increasing rates of prostitution forced the closure of numerous girls' schools in the area while young men left their traditions and villages behind in droves to become truck drivers and house boys.<sup>91</sup>

Company response to the concerns of villagers involved justificatory rather than proactive measures. Before the mine was constructed, BCL employees conducted local meetings with villages for the purpose of conducting intense propaganda campaigns. The meetings were not negotiations, as it was already decreed that the mine would go forward. CRA and BCL employees were thus not charged with consulting

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83. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 92-93.

84. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 2.

85. Christopher Williams, *Environmental Victims*, (London: Earthscan Publications 1998), 101.

86. *Environmental Victims*, 101.

87. *Environmental Victims*, 101.

88. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 10.

89. *Environmental Victims*, 104.

90. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 165.

91. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 166.



over the mine with the villagers; they were instead tasked with explaining what the possible impacts of the mine would be and to persuade the villagers to accept or at least tolerate the opening of the mine.<sup>92</sup>

There are numerous examples of the company's clumsy and slow responses to solving environmental and social issues caused by the mine. Compensation was offered by BCL to landowners before the mine was built, but at a limited rate based on "occupying" the land; the landowners refused and had to be forcibly evicted. Regular and systematic payments for the ongoing environmental damage and social upheaval were not formalized until 1980 but were quickly overcome by poor management and corruption.<sup>93</sup>

Some of the lessons that PNG learned from the Panguna mine disaster can be seen in the legal agreements and political actions that happened at Ok Tedi. First and foremost, the Ok Tedi Mining Act of 1976 required that a mine tailings dam be built to store mine waste instead of discharging it into the nearby rivers. This could be attributed to the result of first-hand experience from the Jaba River devastation caused by the Panguna mine. Interestingly, after the dam collapsed in 1986, the PNG government in a subsequent agreement mandated the study of an alternative method for storing dam tailings, but that mandate was dropped in 1990 after BHP complained of cost and the Panguna mine closed. The closure of the Panguna mine, PNG's largest mine, and the loss of hundreds of millions in annual tax and mine revenue may have played a role in acquiescing to BHP's cost-related complaints.

The social impacts for Ok Tedi and Bougainville parallel each other closely as the type of economy and civilization that existed before the mines came were similar for each location. They illustrate the wrenching changes that accompanied the development of the mines and helped lead to confusion, animosity, and anger for both populations. The great difficulty with the introduction of a new economy and new structures of tradition and culture are incredibly delicate; monetary compensation, which is acceptable in a cash-based society, can be considered foreign to a people who are not accustomed to attributing value to inherently valueless paper or metal.

Government and company responses in both cases follow a similar path. OTML may have been more assertive in providing compensation to some villagers but they failed, much as CRA Ltd did, to recognize the extent of the environmental damage and the number of people who would be affected and feel deserving of increased compensation. The lack of response in Bougainville was enough to trigger a civil war that caused 15,000 people to lose their lives. In the case of Ok Tedi, the local community was fortunately able to find a voice through international NGOs and an Australian law firm that likely prevented violence from occurring.

## 7. Impact on BHP

The impacts BHP invoked were severe but took many years to fully manifest. The advantage of mining in a remote area is that information about the practices and general situation of the mine are easy to suppress. In the case of BHP, the brunt of pain coming from the Ok Tedi situation came during and immediately after the lawsuit (1994-1996), and during the period that it prepared for and eventually

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92. *Getting Under the skin: the Bougainville copper agreement and the creation of the Panguna Mine*, 83.

93. David Hyndman, 3 March 2010, "Digging the mines in Melanesia", *Cultural Survival*, (3 March 2010), accessed on April 20, 2013, <http://www.culturalsurvival.org/publications/cultural-survival-quarterly/papua-new-guinea/digging-mines-melanesia>.

withdrew from the mine (2001). Impacts also came from different locations: PNG where BHP was operating and Australia where the company was based.

The missteps of BHP were recorded at first by a trickle of anthropologists conducting research with the villages surrounding the Ok Tedi mine. The papers published by these visiting researchers began to attract international interest, and by the early 1990s international NGOs had begun to organize the protesting villagers and set in motion the events that would lead to the lawsuit of 1994.<sup>94</sup> A flurry of academic research, in the two years before the lawsuit was filed, indicates that knowledge of the devastation caused by the Ok Tedi mine was being rapidly disseminated in Australia and around the world.<sup>95</sup>

BHP's reputational loss is understandably more difficult to quantify than its financial losses but it can be determined to a certain extent, and can be indirectly linked to financial losses. In PNG, BHP's reputation is not based on the more than hundred-year history of the company, but instead on the interactions that it had within the country and especially the Ok Tedi region since its arrival in 1976. BHP's image and reputation with regards to the Ok Tedi inhabitants' perspectives was built through interactions with the local community over the lifetime of the mine. BHP's reputation therefore rested on how well it was able to deliver social goods and avoid social harm to the area around the mine's operations.

BHP did deliver many goods and services in conjunction with OTML: Hospitals, clinics, schools, community centers, an airport, port, many roads, and was responsible for improving the education and material welfare of the PNG citizens it employed and their families.<sup>96</sup> However, there was a constant aura of distrust concerning the allocation and amount of compensation, along with anger arising from the pollution entering the rivers. Roadblocks, marches, and the eventual lawsuit resulted after petitions and written complaints were not adequately addressed.<sup>97</sup> What can be concluded is that BHP's reputation in PNG was mixed, and could only get worse as the pollution piled up and protests were ignored. By the end of 2001, when BHP decided to pull out of the mine, it had already been defeated in one lawsuit and was in a continuous fight with others, some of which arose out of the fact that BHP was leaving the mine and revoking its environmental obligations.<sup>98</sup>

In BHP's home country of Australia, however, the situation was quite different. For Australians, there was much to like about the company: It was the country's largest corporation, and as such was considered Australia's face to the world. It had become such a large company because mining was a very important business to Australia. In 1986, it was the first Australian company to declare \$1 billion AUD in net profit<sup>99</sup> and during this time BHP was running a successful PR campaign as "The Big Australian", invoking a semblance of national pride and fashioning the company as tough, prepared, and willing to tear down obstacles to achieve its goals, an image that resonated well with the Australian character.<sup>100</sup>

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94. Dallas Hanson and Helen Stuart, *Failing the reputation management test: The case of BHP; The Big Australian*, Corporate Reputation Review Vol. 4, No. 2, (2001), 128-143, 137.

95. *Failing the reputation management test*, 137.

96. *The Ok Tedi Copper Mine*, 251.

97. *Indigenous movements and the risks of counter globalization*, 305.

98. *Indigenous movements and the risks of counter globalization*, 309.

99. BHP Billiton Chronology, BHP Billiton (2013),

[http://www.bhpbilliton.com/home/aboutus/ourcompany/Documents/2013/BHP\\_Chronology\\_March%202013.pdf](http://www.bhpbilliton.com/home/aboutus/ourcompany/Documents/2013/BHP_Chronology_March%202013.pdf).

100. *Failing the reputation management test: The case of BHP; The Big Australian*, 130

Although many negative articles had been written about the mine before 1994, the lawsuit thrust BHP's mismanagement of the Ok Tedi mine into the middle of the political and media spotlight. There were many reasons why this was so, beyond that fact that the defendant was Australia's most well-known company. The lawyers for the Ok Tedi villagers were from the prominent Melbourne-based firm Slater & Gordon, which had previously fought and won in landmark cases against large companies. The lawsuit also took place within the Victorian Supreme Court in the capitol city of Melbourne. Unfortunately for BHP, the lawsuit came at a time of heightened environmental awareness in Australia, and the public easily sided with the plaintiffs against BHP.<sup>101</sup> BHP consistently denied responsibility for the environmental destruction, and even blamed the villagers for seeking undeserved compensation.<sup>102</sup> Matters only became worse for BHP when news of its attempt to criminalize the plaintiffs in PNG during the lawsuit reached the court, for which the firm was held in contempt of court for a brief period.<sup>103</sup> The aggressive behavior of BHP during the court proceedings on top of their destruction of the environment likely failed to garner the company any favors from a critical Australian public.

The first acts of international pressure came from international NGOs which acted in their home countries to influence the shareholders of OTML to relinquish their shares. From Germany, the consortium of German metal companies and Lutheran churches that owned 20% of OTML commissioned an independent study by the Starnberg institute that uncovered the true severity of the mine's social and environmental impacts. The study pushed the German consortium to sell its shares to BHP in 1993.<sup>104</sup> In the United States, a concerned Wall Street metals trader organized forums for Ok Tedi representatives and environmental organizations in New York and Washington, DC with the aim of deterring American companies (such as Amoco Minerals, which had a 30% stake) from investing in OTML. In 1993, Amoco Minerals did withdraw, citing strategic reasons, but it is presumed that the mounting problems at Ok Tedi were partially to blame.<sup>105</sup>

Worldwide, BHP's reputation continued to suffer through the efforts of the Ok Tedi community and international NGOs. Activists testified against the mine at the International Water Tribunal in The Netherlands in 1992, earning BHP a stern condemnation from the tribunal. The German consortium also invited Ok Tedi representatives before the Bundestag to tell their story, and the German government passed a resolution declaring that BHP had to adhere to Western environmental rules and pay appropriate compensation to affected groups.<sup>106</sup> After the lawsuit was settled in 1996, even prominent personalities, such as Ralph Nader, commented on BHP's egregious environmental mistakes and brutal court fight.<sup>107</sup> The effect of this negative worldwide opinion damaged the BHP brand abroad, especially in places where it desired to invest. When the indigenous Dene Nation of Canada was approached by BHP for a diamond mine, they invited Ok Tedi representatives and NGOs to assist them in deciding how to regulate the mine and BHP. There is even one case in which BHP lost the rights to a copper mine in the

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101. *Failing the reputation management test: The case of BHP; The Big Australian*, 128.

102. *Failing the reputation management test: The case of BHP; The Big Australian*, 136.

103. *The Ok Tedi Lawsuit in retrospect*, 157.

104. *Failing the reputation management test: The case of BHP; The Big Australian*, 137.

105. *Indigenous movements and the risks of counter globalization*, 306.

106. *Indigenous movements and the risks of counter globalization*, 306.

107. *Indigenous movements and the risks of counter globalization*, 307.

Dominican Republic because of the damage to its international reputation.<sup>108</sup>

The financial losses to BHP were equally stinging. The first loss that could be attributed to the lack of a tailings dam would conceivably be the compensation payments that BHP was already providing to the communities along the river. These compensation payments likely would have been lower if there was less pollution, but the cost of building and maintaining the mine tailings dam might have offset such savings. Therefore, the most direct losses attributable to the environmental destruction would be the settlement agreed upon by BHP and the Ok Tedi villagers as a result of the lawsuit and the loss of its investment in the mine as a result of the write-off of BHP's shares in 2001. Indirect losses would include losses in share value, the loss of opportunity to mine in other areas because of the negative reputation Ok Tedi gave BHP, and other losses related to court costs and efficiency losses.

After the two-year court case, BHP entered into negotiations with the Ok Tedi villagers and their legal representatives to find an out-of-court settlement. They eventually came to the agreement that BHP would pay \$500 million split three ways: cash payments to all the villagers involved in the class action lawsuit, a transfer of shares to a PNG government-run trust, and funding a large-scale study that would lead to a serious examination of mine tailings storage options.<sup>109</sup>

When it became clear in 1999 that the environmental damage was out of control, BHP initially decided to completely close the mine, but well aware of what that decision would cost PNG in the form of lost tax revenue, export earnings, mine revenue, and the Ok Tedi regional economy, the central government didn't allow BHP to implement that decision. Instead, BHP was forced to write off their shares (worth more than \$400 million USD) and transfer complete ownership of the mine to PNG.<sup>110</sup> Therefore, taking into account the settlement costs and the loss of their share of OTML, direct monetary losses to BHP likely amounted to more than \$900 million.

“[C]learly we made a mistake at Ok Tedi in respect of not having fully understood all the communities that we needed to satisfy. The groups where sedimentation was the worst hadn't been sufficiently clearly in our sights as we worked down this long river system... we hadn't listened to them [the villagers] carefully enough.”<sup>111</sup> –Jerry Ellis, then CEO of BHP, speaking regarding the settlement

Indirect monetary losses are numerous but difficult to extrapolate from the situation that developed at Ok Tedi. BHP shares had been strong throughout the early 1990s as a result of high copper prices, but fell precipitously from \$20 to \$12 in 1998 in apparent fallout from the lawsuit.<sup>112</sup> BHP also had to pay a public-relations firm for an advertising campaign to spruce up its image<sup>113</sup> during and after the lawsuit, but the advertising blitz could not overcome BHP's negative reputation and caused it to lose access to at least one large mining concession in the

108. *Indigenous movements and the risks of counter globalization*, 307.

109. *The Ok Tedi Copper Mine*, 252.

110. John McCarthy, “BHP quits troubled Ok Tedi mine”, *Courier-Mail* (9 February 2002), accessed on April 5, 2013. <http://global.factiva.com.proxyau.wrlc.org/ha/default.aspx>.

110. *The Ok Tedi Lawsuit in retrospect*, 144.

112. *Failing the reputation management test: The case of BHP; The Big Australian*, 128.

113. *Failing the reputation management test: The case of BHP; The Big Australian*, 136.

Dominican Republic.<sup>114</sup> Finally, there were opportunity costs to BHP's decision to pull out from OTML. The mine was slated to continue operations until 2010 at the time of the decision but that date has now been pushed back to beyond 2013.<sup>115</sup> Had BHP managed the wastes from the beginning of the mine, it would be in a position to reap the rewards of more than 10 years of revenue, as the net profit from the Ok Tedi mine between 2002-2010 averaged \$524 million USD per year.<sup>116</sup>

## 8. Analysis

BHP's involvement in Ok Tedi has given the company a black eye in terms of reputation and put a significant dent in the profits that it could have enjoyed to this day. There are a number of key components in the Ok Tedi mine case that can be extracted, and those factors are: BHP's corporate mindset, BHP's failure to address cultural differences between itself and the Ok Tedi residents, BHP's failure to adequately assess and address the environmental impact of the mine, BHP's failure to address the compensation requirements of all groups affected by the mine, the close relationship between PNG and BHP, PNG's weak governance, and the lack of long-term economic development.

### 8.1. BHP Corporate Mindset

In the commodity world of market fluctuations and uncertainty BHP's overwhelming goal, especially during the initial stages of the Ok Tedi mine, was to profit from the mine as quickly as possible. In order to profit from the mine in such a quick order, some sacrifices had to be made. In this case, the sacrifice was the Ok Tedi and Fly Rivers. BHP was forced by the Ok Tedi Mining Act of 1976 to build a tailings dam that would prevent most of the damage done to the Ok Tedi/Fly Rivers soon after the dam became operational. The dam collapsed halfway through its construction because of a landslide and, after complaining about the cost and effort of making a second attempt, the company was not required to try again. However, there is evidence that indicates BHP did not commission a proper analysis of the geological structure of the area before it began construction of the dam in the first place.<sup>117</sup>

Although not a determination that the company intended for the dam to fail, it is an indicator of the ad hoc and dismissive approach the company took towards anything that would not help the mine achieve profitability as soon as possible. If a proper study had been undertaken that would have identified the safest location for the dam, it might have been the best \$100,000 to \$200,000 that the company could have spent during the operating life of the mine.

The corporate mindset at BHP was more than a fixation on the bottom line. BHP was a company of engineers and project managers much more than a company of marketers and cultural scientists. The "Big Australian" was strong in sectors concerning hard science and ingenuity but perhaps not as well equipped to deal with the art-form of cultural awareness, communication, and effective brand management.

BHP insisted as late as 1996 that the damage done to the rivers were not its fault, even stating that the

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114. *Indigenous movements and the risks of counter globalization*, 306.

115. Business Advantage, *Mystery remains over possible new ownership structure for Ok Tedi mine*, Business Advantage PNG, (27 March 2013), accessed April 1, 2013, <http://www.businessadvantagepng.com/mystery-remains-over-possible-new-ownership-structure-for-ok-tedi-mine/>.

116. Ok Tedi Mining Ltd., "Annual Reviews", (2013), accessed on March 26, 2013,

[http://www.oktedi.com/index.php?option=com\\_content&view=category&layout=blog&id=45&Itemid=100](http://www.oktedi.com/index.php?option=com_content&view=category&layout=blog&id=45&Itemid=100).

117. "Assessing an Assessment: The Ok Tedi Mine", 20.

reasons why they were forced to settle was because of the way the negative Australian media didn't allow BHP to get its side of the story across.<sup>118</sup> If BHP was so resistant to accepting responsibility, even after hearing complaints from villagers for the better part of a decade and the damning results of more than 40 independent studies,<sup>119</sup> it is easy to believe that they shrugged off the numerous petitions and calls for increased compensation payments based on the steady degradation of the Ok Tedi and Fly Rivers.

## 8.2. Cultural Differences

Another reason why the company was reluctant to listen to the villagers regarding the environmental devastation that they were witnessing is due to the extreme cultural differences between the groups. As mentioned previously, the villagers of the Ok Tedi and Fly River and the corporate executives were not familiar with one another's customs of authority, value, spirituality, and even morality. The Ok Tedi villagers were not a single tribe or group but a panoply of different peoples, each with a unique history and worldview that BHP devoted little attention to and could not have fully understood.

## 8.3. Environmental Degradation

The critical element of BHP's failure at Ok Tedi is the environment, and can be linked to the rush of the company to develop the mine quickly and become profitable. The environmental impact study undertaken by OTML was constrained by resources and significantly underestimated the future environmental impact of the mine. For instance, a serious omission in the EIS studies concerned what would happen if a mine tailings dam was not built. With the dam in place it was expected that only 180 million tons of waste would enter the Ok Tedi and Fly River system between 1981 and 1998.<sup>120</sup> However, without the dam the actual discharge of waste that occurred during that same period was 680-800 million tons.<sup>121,122</sup>

The collapse of the dam and BHP's vociferous complaints about the cost of any alternative waste storage scheme allowed it to dump more than six times the expected amount of waste into the river than the EIS studies had predicted and that the Ok Tedi inhabitants were prepared for. The company also did not do much in the way of environmental remediation during the life of the mine except for removing cyanide from the tailings and establishing a monitoring program for certain parts of the rivers until it was ordered by the court to begin dredging in 1998. Finally, BHP consistently refused to accept accountability for the damage done to the rivers until its own report acknowledged the severity and extent of its responsibility in 1999.

This author found that OTML did not conduct any research of its own initiative and only responded to requirements stemming from the "agreements" that governed the mine. And yet there were dozens of independent studies and OTML's own employees that spoke of disastrous consequences should a mine tailings storage facility not be constructed.<sup>123,124</sup> The offices of OTML also received many letters of

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118. *Failing the reputation management test: The case of BHP; The Big Australian*, 138.

119. *Failing the reputation management test: The case of BHP; The Big Australian*, 137.

120. "Assessing an Assessment: The Ok Tedi Mine", 12.

121. "Mining for the Future Appendix H: Ok Tedi Riverine Disposal Case Study", 12.

122. "Assessing an Assessment", 12.

123. *Failing the reputation management test: The case of BHP; The Big Australian*, 136-137.

124. *The Ok Tedi Lawsuit in retrospect*, 145.

complaint from the local villagers themselves speaking directly from observation of how trees, gardens, and crops were being destroyed. It can never be guaranteed that a single scientific study will be accurate, but the acceptance of these other studies in conjunction with some respect for local knowledge and experience might have allowed BHP and OTML to realize the extent of their environmental mismanagement and be prepared to ameliorate conditions without facing international ridicule and heavy financial losses.

#### 8.4. Inadequate Compensation

Without an understanding of the real environmental impacts, BHP was incapable of entering into honest negotiations with the residents of the rivers regarding proper compensation. The original scheme for compensation only involved the landowners where the mine and its associated facilities would be built, a total of almost 1,000 Ok Tedi villagers. There was no compensation plan created for villagers living next to and downstream from the mine as it was expected that the dam would prevent environmental damage from occurring.<sup>126</sup> This scheme was not altered when the tailings dam was struck from the agreement. As the pollution became worse, the ire of the villagers living downstream from the mine in rivers increased and contributed to the political actions mentioned in this article. It is estimated that 25,000 local residents had the right to demand compensation from OTML.<sup>127</sup>

According to the capitol logic model by Rolf Gerritsen and Martha McIntyre, mining companies inevitably frustrate local communities. Like big-men managing their lesser allies, mines hold their constituents at arm's length, spending to solve problems as they arise.<sup>125</sup>

In 1991, two other vehicles for compensation distribution was the Development Fund and the Development Trust, each targeting a specific group of villages. Working together, they were meant to invest in key village infrastructure and service projects rather than serve as an instrument for direct compensation. For direct compensation, affected groups had to appeal directly to OTML and the local PNG government office.<sup>128</sup> Some appeals were accepted and some were denied, but it seemed as though villagers were forced to wrestle with OTML to receive payments that they felt they deserved. The two funds also were instituted seven years after the mine began dumping waste into the rivers, which indicate reluctance on the part of OTML and only happened after the violence at the Bougainville mine took place over the same issue.

#### 8.5. Relationship between BHP and PNG

The intimate relationship between PNG and BHP is also identifiable as a factor in this case. PNG's Ministry of Minerals and Energy was the holder of the Government's stake in the mine, but it was also the body that regulated the mine based on the Ok Tedi Mining Act of 1976 and its subsequent agreements. This shareholder-regulator balance induces a profit bias that prevented firm regulation of the Ok Tedi Mine, which could have prevented the devastation and social maladies that prevailed. Shareholders expect a return on their investment, but copper is a commodity that can fluctuate in price

125. *Is Ok Tedi a precedent? Implications of the lawsuit*, 119.

126. *West side story: the state's and other stakes in the Ok Tedi mine*, 64.

127. *West side story: the state's and other stakes in the Ok Tedi mine*, 66.

128. *West side story: the state's and other stakes in the Ok Tedi mine*, 68-70.

rapidly. This unpredictability placed unnecessary pressure on the PNG government to relax their environmental regulations when prices for copper were low. A look at historical prices for copper indicate that in the critical period when the dam failed, copper prices were at their lowest ebb since 1932 and worth half of what they were when BHP received permission to mine Mt. Fubilan.<sup>129</sup> It is a distinct possibility that the possibility of low returns may have given BHP the leverage it needed to scare the government by claiming that to re-build a mine tailings dam would effectively bankrupt the operation.

A shareholder is not keen to see an investment slip away, but a regulator that is accountable and rigorous would not yield to company pressure. Commodity prices go up and down constantly, and if BHP had not been able continue with Ok Tedi, in a few years there would be a plethora of mining companies yearning to invest. The bias of the government is made apparent by actions not taken: even after copper prices climbed it did not require any new regulations regarding mine tailings storage, and the nine supplemental agreements that followed the Ok Tedi Mining Act let the company essentially regulate itself.<sup>130</sup> PNG was also complicit in allowing BHP to help draft legislation that would make it illegal for the river residents to file lawsuits against BHP. Fortunately, the law was scrubbed after its dubious ethics were exposed and the PNG government instead passed a slightly weaker law prohibiting citizens from filing lawsuits outside of PNG.<sup>131</sup>

## 8.6. Weak Governance

The more than cordial relationship between BHP and PNG can be attributed to the weak and ineffectual government that controlled the country. Having only achieved independence six years before construction on the mine began PNG was young, poor, and untested in negotiating with a large multinational. Political tension and conflict riddled the legislature, and corruption was rampant. The country was desperate for revenue from Ok Tedi, but it did not have the financial, organizational, or technical assets with which to provide sufficient oversight. The Department of Environmental Conservation had a staff of only 220 and a budget of less than \$1 million,<sup>132</sup> and the Department in charge of regulating mines was also sorely lacking in competent personnel and financial resources.<sup>133</sup>

For many local services the population was dependent on OTML far more than the local government. As the area was devoid of any modern development and infrastructure, in order for BHP to have any basis to operate the mine it was required to build the appropriate facilities and the government did not have the resources to do so. In order to attract workers and attempt to appease local villagers, OTML became involved in delivering transportation, education, and medical services, some even free of charge for those that lived within the township of Tabubil.<sup>134</sup> The vacuum of authority that the government left OTML severed it from the responsibility that a government has in providing certain public goods to its citizens. There may be nothing wrong with a corporation providing such services, but the for-profit

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129. U.S. Geological Survey, "Copper Statistics", (16 November 2010), accessed on April 10, 2013, <http://minerals.usgs.gov/ds/2005/140/copper.pdf> (April 10 2013).

130. Stuart Kirsch, "Litigating Ok Tedi (Again)", *Cultural Survival*, (31 Aug 2002), accessed on March 26, 2013, <http://www.culturalsurvival.org/publications/cultural-survival-quarterly/papua-new-guinea/litigating-ok-tedi-again>.

131. "*Indigenous movements and the risks of counter globalization*", 307.

132. *Terra nugax and the discovery paradigm*, 50.

133. "Assessing an Assessment: The Ok Tedi Mine", 23.

134. *West side story: the state's and other stakes in the Ok Tedi mine*, 64.



nature and lack of accountability of corporations render them less likely to consistently provide public goods unconditionally and for a long-term period, which becomes especially acute for a mining company that has no reason to be in the area once the ore is depleted.

### **8.7. Long-Term Economic Development**

The dependency upon OTML for much of the region's economic vitality and development became a critical sticking point when it came time in 1999 for BHP to decide what to do with the mine. There had been no long-term plan to make the region economically viable without the Ok Tedi Mine. The local government that was the only entity able to take over OTML's job in providing services and jobs to the area was woefully unequipped and unprepared to do so. This was a major reason why the central government prohibited BHP from closing the mine and forced it to write off its shares so that the government, as sole owner, could keep the Ok Tedi Mine open for at least another decade.

## **9. Recommendations and Conclusion**

There is no easy way to dig a gaping hole in the Earth's crust, forcibly remove particles of ore or mineral from it, heat it, smash it, compress it or cool it, and then send it off to the rest of the world. Concurrently, there is an obvious lack of companies who mine that are able to say, with conviction, that they are keeping the environment intact. Waste and pollution will always be a part of mining, and mining will always create waste. That being said, there is a right way to mine and a wrong way.

The Ok Tedi Mine created winners and losers. It should not be discounted that BHP brought about a leap in education and health to thousands of villagers living near the mine and in the township of Tabubil, but at the same time, it ruined the livelihood and property of thousands of villagers living downstream who endured decades of waste in their river. Fundamentally, BHP's complete lack of environmental responsibility towards villagers in the Ok Tedi/Fly River system eroded what positives it had created.

However, with some humility and cognizance, there are important lessons to extract from the disaster that happened at Ok Tedi:

1. Predicting the impact of a mining project is difficult; it should take place from many different perspectives and should not place the burden of proof solely on the mining company.
2. Mining companies working in remote areas must pay close attention to the unique needs of those impacted and provide more compensation appropriate to their cultural context.
3. Limiting environmental damage to the fullest extent possible is cost-saving and reputation-enhancing in the long-term.
4. Countries that are home to multinational mining companies have some responsibility for the actions of such companies abroad, and at a minimum should provide a legal avenue for victims of environmental and/or social injustice to seek redress.
5. The relationship between host country and company should minimize potential conflicts of interest.

An Environmental Impact Statement (EIS) is now a necessary part of creating a mine, and its importance

should not be understated. But there are ways that an EIS can be undermined, as was proven in the Ok Tedi mine case. It would be preferable for not only one EIS to be conducted, but enough to create the most accurate possible prediction of what could occur regarding ecosystem impacts. It is a scientific principle that an experiment should be tested and re-tested, and that principle could provide much needed rigor for mining projects that have serious impacts and can stretch one hundred years into the future. It is also important that the company not be the only entity charged with conducting the EIS. Independent studies are the only way to ensure that a study is objective and verifiable. They could be commissioned either by the government or the company, but it is imperative that the researcher be a third party with no stake in the mining project.

Mining companies such as BHP are successful in their home countries because they are able to solve business and engineering challenges, but when they begin to operate in developing nations that are home to peoples with extremely different cultures and values a new approach must be taken. This approach requires the employment of anthropologists and other competent personnel who are able to comprehend and cultivate deep relationships with the groups of people that the mining company will need to interact with in order to be successful. The case of Ok Tedi points out that grievous mistakes in communication between local residents and the company can lead to unanticipated events; in Bougainville, it helped lead to a rebellion, and in Ok Tedi, it led to a legal challenge. If BHP's corporate awareness had been heightened by the input of employed academics that were able to bridge the gap early on, at the very least BHP may not have been the target of anthropologists who helped the Ok Tedi villagers take on the corporation.<sup>135</sup>

Limiting environmental damage to the fullest extent should not be avoided. Mining projects are normally profitable if they are able to last a long time, and even small environmental effects can accumulate to catastrophic proportions over that time. There will be a cost associated with building and maintaining facilities and structures designed to hold wastes and prevent unnecessary damage to the local ecosystem. In a fluctuating market environment, there may be times when building such infrastructure is untenable, but the potential cost to the company and more importantly, to the local community, make it so that this type of protection should never be avoided. One possibility would be to create a national or international environmental protection fund that would act as insurance if there are strong financial reasons for why the company cannot protect the environment but for some other reason needs to begin mining operations (as was the case with Ok Tedi). Mining companies should also join a sustainability-oriented organization such as the International Council on Mining and Metals in order to learn from other companies and make progress towards sustainability goals as determined by the sustainability organization.

Mining takes place all over the world, and it can take place in countries that have weak and ineffectual governments. Mining companies such as BHP have exploited this to their advantage for decades, and have actively contributed to an unjust political and social atmosphere within many of these nations. If the government of the host country does not have the ability or will to serve as the protector of its own people and environment, that duty should fall to the state in which the corporation is headquartered. BHP mined in Australia for almost a century without serious incident, but in their first move abroad it

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135. "A Short History of Mineral Development Policies in Papua New Guinea, 1972-2002", 98

was to an impoverished nation where it built a mine that severely degraded an entire river ecosystem and negatively impacted the lives of tens of thousands of people.

Australia eventually was the site for some kind of justice for the Ok Tedi villagers, but only after an arduous legal battle. Countries that are the home of multinational mining corporations should be the force to hold them responsible and accountable wherever they operate, just as if they were operating within home borders. Within the Australian courts, the Ok Tedi villagers finally found relief after many years of discontent. If this valve had not been opened for them, the tension could have reached a point of conflict that the Panguna mine case proved could happen. A similar avenue available to any victim(s) of environmental negligence should be open at each nation that is the home of a mining multinational. This would prevent weak host-country governments from ceding their power of regulation over to companies, and would reign in companies that run roughshod over the host country government. If the credible threat of legal action is present, multinationals would be more likely to take the higher ground regarding environmental standards and go beyond the minimum standards required by the host country laws. But as the Ok Tedi case helps to demonstrate, Mining companies should realize on their own that better due diligence and environmental safeguards beyond what the host country specifies would, in the long run, save financial resources and strengthen the reputation of the company in question.

Finally, the conflict of interest issues that arise out of a government that acts as a stakeholder but also serves as a regulator should be minimized. In the case of Ok Tedi, the same government department that owned 20% and then 30% of OTML was also charged with regulating OTML. If a different department had owned the shares, or a semi-independent organization, it would have greatly reduced the conflict of interest and still have been able to provide the advantages that a government could seek in this arrangement. PNG finally did take steps in this direction, but only after BHP had withdrawn. Since the PNG takeover of the mine in 2001, a special economic sustainability fund was created that holds 60% of the new OTML.<sup>136</sup> The fund is distinct from any government agency and will use profit from the mine to reinvest into the region, which promises to provide much more resources than any previous development fund that was dependent on contributions from BHP.

The Ok Tedi Mine case has not been the first, nor is it likely to be the last case of a resource-extraction project that results in serious harm to the local riparian environment. What the case shows is that despite the short-term frame of mind that prioritizes profit and expedience, what the world and the people of the host country remember is not how much gold or copper a company could extract from the soil, nor what its net revenue was. Instead, what is remembered are the long-term social and environmental impacts the company caused for all stakeholders involved. This case study shows that even in a world before instant and omnipresent communication, a large corporation could be hounded by accusations of environmental negligence and lose. The net result of circumventing environmental protection to BHP was a loss of reputation, financial resources, and missed future opportunities. It is hopeful that other mining corporations can learn from its fate.

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136. "Ok Tedi Mine: Unearthing Controversy", 195.

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# Newmont Ghana Gold Limited

Managing the displacement of people and a cyanide spill

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## Abstract

Newmont Mining Corporation, the United States-based parent company of Newmont Ghana Gold Limited has a mixed international reputation for both environmental and social best practices, as well as controversy. For the 2006 initiation of their operations in Ghana, the Ahafo Mine was responsible for displacing nearly 10,000 people living in the agricultural center of the country. Just three years later a tailings pool overflow caused a cyanide spill that killed hundreds of fish and compromised drinking water safety in the Yaakyi water body. Newmont paid the Ghanaian government a \$4.9 million penalty for the spill and nearly \$14 million in direct compensation for the displacement. Although both the parent company and its subsidiary endured reputation damage, no clear evidence of economic losses were found. In fact, Newmont Ghana Gold Limited has continued project expansion since the two controversies.



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## Acronyms

BMP	Best Management Practices
CFR	United States Code of Federal Regulations
DJSWI	Dow Jones Sustainability World Index
ECMG	the External Compliance Monitoring Group
EHS	Environmental Health and Safety
EITI	Extractive Industries Transparency Initiative
EPA	Environmental Protection Agency
ICMC	International Cyanide Management Code
IFC	International Finance Corporation
INSEAD	Institut Européen d'Administration des Affaires (European Institute of Business Administration)
MSME	Micro, Small, and Medium Enterprise
NGGL	Newmont Ghana gold Limited
NGOs	Non-Governmental Organizations
NYSE	New York Stock Exchange
OD	World Bank Operational Directive
OHS	Occupational Health and Safety
OP	Operating Procedure
PACI	Partnering Against Corruption Initiative
PAG	Potentially acid-generating rock
RAP	Resettlement Action Plan
RNC	Resettlement Negotiation Committee
SEC	United States Securities and Exchange Commission
TSX	Toronto Stock Exchange
WACAM	Wassa Association of Communities Affected by Mining

## 1. Introduction

The mining sector has enjoyed immense profits while suffering tragic loss of life, human health, and environmental resources. Gold mining in particular is easy to characterize negatively because it is seen as a luxury item that its miners will never be able to purchase. As a result, companies may be perceived as agents of exploitation and greed. This case study examines the workings of Newmont Ghana gold Limited (NGGL) to evaluate whether its practices are careless or even unethical. It is important to note that mining, by nature, is dangerous, socially disruptive, and environmentally risky. Given the reality that resource-rich developing countries have few alternatives to jumpstart their economies, the case study will not scrutinize the ethics of the existence of mining as a whole. Instead, it will evaluate the firm's policies and practices within the context of a dangerous industry.

## 2. Company Background

Newmont Mining Corporation was established in 1921 as a holdings company and through several acquisitions has shifted to focus primarily on gold mining. It is headquartered in Nevada and Colorado, USA. Newmont operations span most of the world's continents. They operate in North America, South America, Asia/Pacific, and Africa.

Combined, Newmont owns reserves of 98.8 million ounces of gold and 31,500 square miles of land (roughly the size of the US state of South Carolina), as of December 2011. It is publically traded on the New York Stock Exchange (NYSE), Toronto Stock Exchange (TSX), and the S&P 500. Its non-gold operations primarily involve copper extraction in the Asia Pacific region.<sup>1</sup> One of its subsidiaries, Newmont Mining Corporation of Canada, is listed on the TSX.<sup>2</sup>

In 2009, Newmont employed roughly 14,500 direct workers and another 15,900 contractors. It was the only gold mining company that is both a Fortune 500 and S&P 500 member. Gold is the primary source of their revenue, accounting for 83% of revenue in 2009. Thirty-two percent of the consolidated gold sales were to North America, 32% to South America, 28% to Asia Pacific, and 8% to Africa. The majority of the revenue comes from selling gold in the international market. Newmont's final product is doré bars, which contain small amounts of silver and other metals. Once sold, the bars are sent to refineries that produce bullion made of 99.95% gold, the market standard.<sup>3</sup>

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<sup>1</sup> "Profile: Newmont Mining Corp (NEM)," *Reuters*, Accessed February 21, 2013  
<http://www.reuters.com/finance/stocks/companyProfile?rpc=66&symbol=NEM>.

<sup>2</sup> United States Securities and Exchange Commission (SEC). "Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009: Newmont Mining Corporation." Form 10-K, Washington, DC, 2009, 38.

<sup>3</sup> United States Securities and Exchange Commission (SEC). "Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009: Newmont Mining Corporation." Form 10-K, Washington, DC, 2009, 2, 9, 38.

### 3. Newmont in Ghana

The Ahafo project in Ghana is a result of the merger of NGGL with Normandy Mining Limited and purchase of Moydow Mines International, Inc.’s interests in Rank Mining Ltd. in 2003.<sup>4</sup>

Ghana’s Parliament voted unanimously to approve the investment agreement between Newmont and the federal government in 2003. Under the agreement, laws and fiscal arrangements are fixed. For example, NGGL pays corporate income tax to the federal government at a statutory rate of 25%, not to exceed 32.5%. In 2011, when the Ghanaian Minister of Finance proposed to increase corporate income tax to 35% and a separate 10% windfall tax, Newmont was excluded because of this agreement. NGGL also pays fixed gross royalties on gold production at a 3% rate or 3.6% if it is produced from forest reserve areas. The federal Government of Ghana receives an additional 10% of project net cash flow. Ghana may acquire up to 20% of shares in the company at market value once the company has been operating for fifteen years in the country. The agreement also includes local employment training, community development, local purchasing, and environmental protection.<sup>5</sup>

In 2009 Ahafo was operating in three open pits (there was no underground mining in Ghana at that point), with reserves in seventeen additional pits. The fourth pit, Amoma, went into operation in October 2010.<sup>6</sup> The Newmont mines in Ghana account for roughly 19.7% of Newmont’s global reserves.<sup>7</sup>

### 4. Newmont Impact Assessments and Regulatory Framework

By 2005 Newmont completed an Environmental and Social Impact Assessment. It is divided into three parts. Human impacts are commonly known as social impact. Environmental impacts are split into biological impact and physical impact categories. Although they are divided, many of the potential impacts and control measures have overlapping implications.

4.1. Table 1: Human Impacts		
	Potential Impact	Control Measures
Social & Economic	<ul style="list-style-type: none"> <li>• Agriculture to cash economy</li> <li>• Displacement/Resettlement</li> <li>• Impeded access to communities near project site</li> <li>• New residents of different cultures and related tension</li> </ul>	<ul style="list-style-type: none"> <li>• Relocation plan</li> <li>• Crop loss compensation</li> <li>• Minimizing mine footprint</li> <li>• Restricting mine to rural areas</li> <li>• General infrastructure improvements: transportation, sanitation, waste,</li> </ul>

<sup>4</sup> Newmont Ghana Gold Ltd. “Environmental and Social Impact Assessment.” Accra, Ghana, 2005, S-1.

<sup>5</sup> United States Securities and Exchange Commission (SEC). “Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009: Newmont Mining Corporation.” Form 10-K, Washington, DC, 2009, 27, 31.

<sup>6</sup> United States Securities and Exchange Commission (SEC). “Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009: Newmont Mining Corporation.” Form 10-K, Washington, DC, 2009, 27.

<sup>7</sup> “Profile: Newmont Mining Corp (NEM),” *Reuters*, Accessed February 21, 2013 <http://www.reuters.com/finance/stocks/companyProfile?rpc=66&symbol=NEM>.

	<ul style="list-style-type: none"> <li>• Disease spread</li> <li>• Improved housing for resettlement</li> <li>• Employment opportunities</li> <li>• Increased income</li> <li>• Poverty Reduction</li> <li>• Training/education</li> <li>• Drinking water access, quality, &amp; quantity</li> <li>• Social/societal problems</li> <li>• Inflated housing costs</li> <li>• Waterborne disease</li> <li>• Cyanide and other chemical exposure</li> </ul>	<p>electricity, and telecommunication</p> <ul style="list-style-type: none"> <li>• Resettlement village</li> <li>• Financial management training program</li> <li>• Community water and sanitation management training</li> <li>• Introduce insect-eating fisheries to Subri Reservoir</li> <li>• Waterborne disease education and monitoring</li> </ul> <p>Already done:</p> <ul style="list-style-type: none"> <li>• Resettlement logistics</li> <li>• Rental allowances</li> <li>• Resettlement in groups/neighborhoods similar to originals</li> <li>• Transportation allowances</li> <li>• Malaria prevention program</li> <li>• HIV/AIDs standards &amp; guidelines</li> </ul>
Cultural	<ul style="list-style-type: none"> <li>• Artifact loss</li> <li>• Historical/archaeological information loss</li> <li>• Disturbance of graves</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural survey to identify shrines &amp; cemeteries</li> <li>• Partnership with national museum when culturally/historically-significant elements are found</li> </ul>
Physical Quality of Life: Visual, Noise, & Vibration	<ul style="list-style-type: none"> <li>• Landscape modification</li> <li>• Noise &amp; vibration near mine</li> </ul>	<ul style="list-style-type: none"> <li>• Blend waste rock disposal facilities into surrounding topography</li> <li>• Land reclamation &amp; re-vegetation once used</li> <li>• Blasting times pre-advertised</li> <li>• Controlled blasting technology to minimize vibration</li> <li>• Buildings within 500m of mine relocated</li> <li>• Noise monitoring program to ensure Ghana EPA standards</li> <li>• Blasting demonstrations for public to watch</li> </ul>
<p>Source: Adapted from Newmont Ghana Gold 2005, S-41-47.<sup>8</sup></p>		

Although the human impact of the Ahafo mine project is thoroughly presented, some elements in the assessment are problematic. For example, the restriction of mines to rural areas is an effort to displace the smallest number of people possible. Unfortunately, this puts a larger strain on environmental resources. Furthermore, the potential of disruption of agricultural resources was realized through the construction of the mines. Crop loss compensation cannot account for all of the indirect effects of

<sup>8</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-41-47.

destruction of farms such as inflated food prices. It is important to note that cyanide exposure was anticipated in this section of the impact assessment as well.

NGGL has formed a Resettlement Negotiation Committee (RNC) composed of affected households, traditional authorities, non-governmental organizations (NGOs), government officials, and NGGL. The Ahafo South Resettlement Action Plan (RAP) is in accordance with World Bank Operational Directive (OD) 4.30 and the Equator Principles—voluntary environmental and social risk management standards.<sup>9</sup>

**4.2. Table 2: Biological Impacts**

	Potential Impact	Control Measures
Flora	<ul style="list-style-type: none"> <li>• Weed invasion from ground disturbance &amp; vehicular traffic</li> <li>• Loss of crops, trees, &amp; other plants</li> <li>• Loss of timber production on un-reclaimed land</li> <li>• Increased population density plus agriculture reduction</li> </ul>	<ul style="list-style-type: none"> <li>• Noxious weed monitoring &amp; control plan</li> <li>• Land reclamation</li> </ul>
Fauna	<ul style="list-style-type: none"> <li>• Death or disruption of displaced species</li> <li>• Species mortality from habitat destruction</li> <li>• Chemical ingestion may threaten some species</li> <li>• Nesting, eggs, bush baby, and Bosman’s potto threatened with tree removal</li> </ul>	<ul style="list-style-type: none"> <li>• Fencing/ditching around mine pit rim</li> <li>• Habitats can be developed on some reclaimed waste rock disposal facilities</li> <li>• Restrict hunting on mining properties</li> <li>• Some species can use pit lake for drinking water</li> <li>• Reclamation of tailing storage facility to support crop production</li> <li>• Reclamation takes habitat rebuilding into account for protected species</li> </ul>
Forest Reserves	<ul style="list-style-type: none"> <li>• Indirect impacts from workers in the area</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity Management Program</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>• Mine drainage in wetlands</li> <li>• Wetland reduction downstream</li> <li>• Sediment increase from soil disturbance</li> </ul>	<ul style="list-style-type: none"> <li>• More wetland increase than loss expected due to creation by water storage facility &amp; control dams</li> <li>• Surface-disturbing activities done in accordance w/project sediment control guidelines/BMPs &amp; approved Construction Management Plan</li> <li>• Water diversion channels into natural drainages</li> </ul>

<sup>9</sup> Newmont Ghana Gold Ltd. “Environmental and Social Impact Assessment.” Accra, Ghana, 2005, S-11.

Aquatic Organisms	<ul style="list-style-type: none"> <li>• Stream flow distortion effects on fish and aquatic insects</li> <li>• Increased breeding habitat for mosquitoes and snails that carry malaria and bilharzia, respectively</li> <li>• Abandoned pit lakes could potentially sustain fish</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize natural drainage disturbance</li> <li>• Water diversion channels into natural drainages</li> <li>• Water quality and/or flow rates measured routinely</li> </ul>
<p>Source: Adapted from Newmont Ghana Gold 2005, S-41-47.<sup>10</sup></p>		

In mine construction and operation, the loss of crops, trees, and other vegetation is inevitable. Land reclamation and habitat rebuilding are not instant fixes. If properly executed, they can take years or decades, thus producing permanent effects for the people of the present generation.

Bosumkese Forest Reserve and the Amama Shelterbelt Forest Reserve, two of 282 reserves in Ghana, are in the vicinity of the Ahafo South project. Part of the Bosumkese forest is significantly degraded, but is undergoing a reforestation program. The Ahafo South project impact assessment states that those areas will not be directly impacted. Although it acknowledges that future projects and indirect impacts are possible, the assessment concludes that this project is in accordance with the International Finance Corporation (IFC) Natural Habitats Policy OP 4.04.<sup>11</sup>

Additionally, the routine measurement of water quality is critical in any habitat of aquatic organisms near a mine. Given the possibility of chemical spills, these checks should be a minimum requirement.

NGGL's policies are in accordance with the International Cyanide Management Code (ICMC) for the Manufacture, Transport, and Use of Cyanide in the Production of Gold. The pillars of the code are prevention, response, and coordination. For prevention, signatories agree to adopt U.S Code of Federal Regulations (CFR) 49 Rules to create an auditing system. The response agreement requires a contingency plan. Coordination involves a security and emergency response capacity. Additionally, the process plant and tailings storage facilities were planned to be constructed considering the fragility of biodiversity and human health. Specifically, the policy recognizes 50 mg/l WAC cyanide concentration at the threshold of danger. Additionally, they planned to build temporary barriers to prevent wildlife from harming itself if concentrations exceed that level.<sup>12</sup>

<sup>10</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-41-47.

<sup>11</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-13.

<sup>12</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-24, 29, 31.

**4.3. Table 3: Physical Impacts**

	Potential Impact	Control Measures
Air Quality	<ul style="list-style-type: none"> <li>• Fugitive dust from blasting, hauling grading, and backfilling</li> <li>• Dust from transfer, grinding, milling, and stockpiling</li> <li>• Dust from increased vehicle travel</li> <li>• Emissions from mine equipment &amp; vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Water application, chemical binders, or wetting agents</li> <li>• Re-vegetation</li> <li>• Speed limits for vehicles</li> <li>• Continuous maintenance of haul roads</li> <li>• Dust suppression sprays and dry dust collection</li> <li>• Maintenance of equipment for emissions</li> </ul>
Surface Water	<ul style="list-style-type: none"> <li>• Degraded surface water quality</li> <li>• Accidental chemical spills</li> <li>• Natural drainage blocks and diversions</li> <li>• Sediment load increases to drainages during road crossings construction</li> <li>• Topography changes that modify watershed characteristics of sub-basins</li> <li>• Increased overland runoff from vegetation removal &amp; steeper slopes</li> <li>• Water captured for facilities not released to downstream water users</li> <li>• Increased stream flow from mine pit dewatering</li> </ul>	<ul style="list-style-type: none"> <li>• Water diverted to environmental control dams</li> <li>• French drain system allowing flow beneath waste rock; low permeability layer constructed above drain system</li> <li>• Excess water at tailing storage facility recycled to process water ponds</li> <li>• Monitoring of quality &amp; flow</li> <li>• Closure includes dam breaching &amp; sediment removal</li> <li>• No settlement placement below tailing storage facility</li> <li>• Emergency response plans, backup systems, and treatment methods developed for chemical spills</li> <li>• Diversion channels for runoff</li> <li>• Placement of waste rock disposal facilities on low permeability layer &amp; covered with growth medium to reduce infiltration</li> <li>• Encapsulation of Potentially acid-generating rock (PAG)</li> <li>• Inspections of waste rock disposal facilities quarterly &amp; after heavy rain</li> <li>• Only Ghanaian EPA-approved quality water will be discharged</li> <li>• Roads constructed with ditches &amp; culverts for runoff</li> <li>• Implement Best Management Practices (BMP) to stymie increased sediment loads in streams</li> </ul>



		<ul style="list-style-type: none"> <li>• Water/chemical solution recycle system to support prohibition discharge of water containing cyanide or other chemicals</li> <li>• Operate storage facility for potable water</li> </ul>
Ground Water	<ul style="list-style-type: none"> <li>• Drawdown surrounding pits</li> <li>• Groundwater quality</li> </ul>	<ul style="list-style-type: none"> <li>• Lake pits form after mining cessation</li> <li>• Encapsulation of PAG rock</li> <li>• Geomembrane liners and leachate collection; ROM pad constructed on low permeability clay material</li> <li>• Tailing storage facility constructed with low permeability base, geomembrane liner beneath supernatant pond, and underdrain collection system</li> <li>• Reclamation of tailing storage facility</li> <li>• Groundwater monitoring wells installed</li> <li>• Monitoring of boreholes and potable water for quality and levels</li> <li>• Recharge of ground water with good quality water from storage facility</li> </ul>
Soil	<ul style="list-style-type: none"> <li>• Reduced fertility, productivity, structure, and water holding capacity</li> <li>• Erosion from vegetation removal</li> <li>• Relocated population relocate crops in previously uncultivated areas</li> </ul>	<ul style="list-style-type: none"> <li>• Salvage soil used in reclamation</li> <li>• Brush barriers, sediment ponds, small check dams, sediment fences to fight erosion</li> <li>• Sediment control guidelines/BMPs &amp; Construction Management Plan</li> <li>• Regarded areas ripped and scarified to reduce soil compaction</li> <li>• Land clearance and deforestation will bit limited as much as possible</li> </ul>
<p>Source: Adapted from Newmont Ghana Gold 2005, S-41-47.<sup>13</sup></p>		

Chemical spills are mentioned again as a potential biological impact. Emergency response plans, backup systems, and treatment methods are listed as means to control such events. This implies that, while not frequent or inevitable, they are fairly likely to occur. Based on that assumption, development of a predetermined plan for compensation that exceeds treatment would improve the company's practices.

In 2006, the World Bank's IFC loaned Newmont \$125 million for the Ahafo mine project to provide expertise and guidance for environmental and social issues.<sup>14</sup> The loan from the IFC amounts to

<sup>13</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-41-47.

<sup>14</sup> Earthworks, Wassa Association of Communities Affected by Mining (WACAM). "Denver-based Newmont Mining Co. fined millions for cyanide spill at Ghanaian mine," *Earthworks* (Washington, DC), Jan. 21, 2010.

approximately 21% of the cost to initiate the Ahafo mines.<sup>15</sup> Directly attached to this significant loan are several stipulations for NGGL to follow.

**4.4. Table 4: IFC Safeguard Policies and Standards**

<b>Policy</b>	<b>Description</b>
OD 430 – Involuntary Resettlement	One of the most efficient and comprehensive sets of international standards to protect the rights of involuntarily resettled people
OP 4.37 – Safety of Dams (September 1999 draft)	Restricts dam design and building to professionals. Dams taller than 15 feet are subject to independent reviews and safety inspections. This covers mine tailings dams and water storage dams
Open Pit Mining/Milling (1995)	Includes tailing disposal, liquid effluent discharge, air pollution control, erosion & sediment control, reclamation, sewage management, noise, confined space, hazardous materials, sanitation, worker safety, employee training, record keeping, and reporting guidelines
World Bank Environment, Health, and Safety Guidelines (1995)	Tailings disposal, liquid effluents, air quality, erosion & sediment control, reclamation, sewage, solid waste, noise, confined space, hazardous materials, health & safety, training, record keeping, and reporting guidelines
Disclosure Policy (1998)	For accountability and transparency in the development process
General Environmental Guidelines (1998)	Covers pollution prevention and seeks to minimize resource consumption; air emissions, liquid effluents, hazardous chemicals & wastes, solid wastes, and ambient noise
Hazardous Materials Management Guidelines (2001)	To determine characteristics and threshold quantities for hazardous materials, and community awareness
IFC Environmental Guidelines for Occupational Health and Safety (2001)	Provisions for ensuring an organizational framework to support the occupational health and safety program, a hazard prevention program, performance monitoring, and evaluation

*Source:* Adapted from Johnson et al. 2009, 13; 16.<sup>16</sup>

The Minerals and Mining Law is Ghana’s legal framework for mining. Although the mining company must compensate owners and occupiers for surface damage, buildings, works or improvements, livestock, crops, or trees, they are not obligated to compensate for the land itself. Instead, land compensation agreements are negotiated by relevant parties with the approval of the Land Valuation Board. In addition to Ghana’s legal constraints, Newmont adheres to the Newmont Five Star Land Access and Acquisition Standard.

<sup>15</sup> World Business Council for Sustainable Development “Newmont: Supporting local economic growth in Ghana” (Case Study, Geneva, Switzerland, 2009), 1.

<sup>16</sup> William J. Johnson, Stafano Robaudo, Daniel Messmer, Giovanni De Franchi, Lori Ann Conzo, “Report of the External Compliance Monitoring Group (ECMG)” (Report, Ghana, 2009), 13, 16.

The crop compensation process was planned to be uniform, systematic, and timely. No evidence was found to indicate that the execution deviates from this plan. This process takes 32 to 60 days:

- Step One - Field Assessment (5-15 days)
- Step Two - Processing for Payment - Community Relations (10-15 days)
- Step Three - Processing for Payment - Accounts (10-20 days)
- Step Four - Payment (7-10 days)
- Step Five - Monitoring (ongoing)<sup>17</sup>

## 5. Controversy: Displacement and Relocation of People for Ahafo Mine

The Ahafo mine is located in a farming region, the breadbasket of the country, which is responsible for about 30% of Ghana's food. The mine displaced 9,500 people, 95-97% of whom were subsistence farmers.<sup>18</sup> Cash crops in the Ahafo region are cocoa, palm oil, citrus, and coffee. Crops used locally for food are maize, cassava, plantain, cocoyam, yam, rice, and other vegetables. The average farm size is 0.34 hectares (0.84 acres)<sup>19</sup>

NGGL has split the Ahafo Mine Project into two parts, Ahafo South and Ahafo North. Only the Ahafo South Project will be discussed here, as the Ahafo North mines are still in planning and development phases. The structures involved in the Ahafo South mine project give it a footprint of 13.6 sq miles or 8,718 acres and include the following:

- Open mine pits
- Waste rock disposal sites
- Mill and ore processing plant
- Tailing storage facility
- Water storage facility
- Environmental control dams
- Bypass roads
- Safety zone (500 meters around disturbance areas)
- Resettlement villages.<sup>20</sup>

As of August 2005, four months before the mines began operation, NGGL had dispersed \$920,694 to those that lost their homes; and another \$12,878,990 for farmers whose land was reallocated. The affected people were placed in resettlement villages built by Newmont. Kenyase 2 and Ntotorso are the location of the resettlement villages.<sup>21</sup>

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<sup>17</sup> Newmont Ghana Gold Ltd., "Guide to Land Acquisition and Compensation for Exploration Activities at the Newmont Ghana Gold Ltd. Ahafo Project." (Report, Accra, Ghana, 2005), 1, 6, 12.

<sup>18</sup> Earthworks, Wassa Association of Communities Affected by Mining (WACAM). "Denver-based Newmont Mining Co. fined millions for cyanide spill at Ghanaian mine," *Earthworks* (Washington, DC), Jan. 21, 2010.

<sup>19</sup> Newmont Ghana Gold Ltd., "Guide to Land Acquisition and Compensation for Exploration Activities at the Newmont Ghana Gold Ltd. Ahafo Project." (Report, Accra, Ghana, 2005), 6.

<sup>20</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-11.

<sup>21</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-9-11.

## 6. Controversy: Cyanide Spill from the Ahafo Mine

On October 8, 2009 Newmont was responsible for spillage of cyanide into Yaakyi, a tributary/stream of the Subri River in the Asutifi District of Ghana. Sodium cyanide is an ingredient in gold ore processing solution. One teaspoon of 2% solution could kill an adult. During a heavy rain, one of the environmental control (tailings) dams overflowed despite the fact that there was an electric monitoring device. The Brong Ahafo Regional director of the Environmental Protection Agency (EPA) faulted Newmont for the spill. On the other hand, he stated that the socio-economic impact of the spill was nominal. The spill was contained to the Yaakyi before it could pollute the Subri River (the Yaakyi is identified as a stream, a tributary, or river depending on the source). Newmont communications personnel call the spill a “minor chemical overflow.” Newmont’s initial response consisted of stymying and neutralizing the spill, sending out crews in boats to collect the resulting dead fish, and supplying affected communities with potable water.<sup>22</sup>

**Tailings** are the byproduct of pulverized rock and processing solution, used in mineral mining. Tailings dams are built to contain ponds that the waste from the gold mine is contained in.

Source: United States Environmental Protection Agency Office of Solid Waste, “Technical Design and Evaluation of Tailings Dams” (Report, Washington, DC, 1994), 1-2.

Newmont claims to have neutralized the water with sodium hypochlorite, commonly known as liquid bleach. The overflow was contained with sandbags. The Regional Communications manager of Newmont released a statement saying that a 20 parts per million (ppm) concentration of sodium cyanide in fresh water is dangerous to humans. Tests were conducted at multiple downstream locations after a heavy rain, reportedly resulting in measured concentrations of 0.25 ppm<sup>23</sup>.

One local farmer noticed dead fish (mostly tilapia and mudfish) in the Yaakyei on the way to his farm on October 9, 2009. Newmont was telephoned and sent out four officials led by a member of the community relations unit. The officials later returned with the Community Relations Manager, who

Newmont uses **two different methods to mine gold**--heap leaching and milling. Milling is usually done for higher grade oxide ores. The process of milling requires the ore to be ground into powder, mixed with water to become slurry, passed through a carbon-in-leach circuit, then pumped to processing facilities that remove the gold. Heap leaching for lower grade oxide ores requires stacking crushed or run-of-mine ore on impermeable pads. A cyanide solution is applied to the surface to dissolve the gold. Finally, the remaining solution is pumped to processing facilities to extract the gold. More than 99% of the gold mined by Newmont in Ghana is extracted through the mill process.

Source: United States Securities and Exchange Commission (SEC), “Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009” (Annual Report, Washington, DC, 2009), 3, 9.

<sup>22</sup> “Cyanide Spillage, Newmont Was Negligent - EPA,” *Accra Mail* (Accra, Ghana), Oct. 13, 2009.

<sup>23</sup> Market News Publishing “Moydow Mines International Inc. (MOY-T) - Speculation,” *Market News* (Vancouver, BC), Oct. 19, 2009.

admitted that the spillage originated from the processing plant. On the following day, October 10, the farmer noticed a boat with Newmont workers clearing dead fish out of the Yaakyei. Other farmers corroborated this report. Contrary to an October 13 press release from Newmont stating that the cyanide overflow was limited to its mine site, a team of journalists visiting affected areas discovered that the spill affected thirteen areas, including Kantinkakrom, which comprised about 74 villages and hamlets.

There was also an issue of Newmont failing to immediately notify government. Newmont claims that their initial assessments incorrectly determined that the overflow was contained within their process plant area. Skeptics believe that this was an attempt at a cover-up. Inhabitants of the affected communities were the ones who noticed dead fish and expressed concern. Newmont's Senior Vice President for African Operations emphasized that Newmont accepted responsibility for the matter.<sup>24</sup>

NGGL calls the cyanide spill of October 2009 an overflow. The Minister of Environment, Science, and Technology formed a panel to assess the damage and determine the appropriate level of compensation and penalties. The panel found that Ghana did not have a sufficiently strong regulatory framework to systematically penalize the company, but came up with a penalty of 7 million Ghanaian Cedes (or about \$4.9 million) for community compensation and other unspecified government uses.<sup>25</sup>

## 7. Newmont Accused of Poor Practices

In general, NGGL had not been subject to significant criticism of their resettlement practices. However, in 2008 the German chapter of FIAN International, an international human rights organization known at that time as FoodFirst Information and Action Network, produced a documentary entitled *Ghana's Gold Rush: The Case of the Newmont Ahafo Gold Mine*. It captured the complaints and frustrations of the people directly affected by the construction of the Ahafo mine. The main grievances were inadequate compensation for people who were not resettled. Destruction of trade relationships between resettled villages and the ones left behind caused further economic damage not accounted for in social impact assessment. In some cases farms close to the mine zone were destroyed by Newmont, but the farmers' homes were not. Since compensation funds eventually ran out, former farmers were left with no sustainable source of food. Finally, there were many complaints of dust from the mines, in spite of the control measures designed by the environmental impact assessment<sup>26</sup>. Though NGGL is lauded for its resettlement efforts, the increased vulnerability of the communities bordering newly deserted areas was an important oversight.

On the other hand, in the case of the cyanide spill, there was massive outcry in the media mainly stemming from civil society organizations. The amount of negative press surrounding the spill created characterized the public image of a massive spill.

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<sup>24</sup> Daniel Nonor, "Newmont to Finalize Compensation for Overflow Accident," *Ghanaian Chronicle* (Accra, Ghana), Jan. 20, 2010.

<sup>25</sup> United States Securities and Exchange Commission (SEC), "Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009" (Annual Report, Washington, DC, 2009), 167.

<sup>26</sup> FIAN Germany, *Ghana's Gold Rush: The Case of the Newmont Ahafo gold mine*, Documentary, (2008), Video.

Isaac Osei, Brong Ahafo Regional Director of the EPA, faulted Newmont for the spill for relying solely on machines to monitor the rate of water flow into their environmental control dams<sup>27</sup>. During and after heavy rains such as the one that caused the cyanide spill, NGGL should make it policy to send out personnel to supplement the automatic monitoring devices.

According to Earthworks, a Washington, DC-based global environmental advocacy organization, the Ghanaian Ministerial Panel charged with the task of determining adequate compensation for the spill recommended that Newmont pay \$4.9 million in damages. The panel concluded that Newmont operated multiple water ponds simultaneously and delayed notifying regulatory authorities and several downstream communities. There was also *no duplicate sampling* of the water. An EPA report concluded that the spill could have been avoided using preventative measures. The report found that Newmont violated their permit requirement by not having preventative measures to detect and contain a spill of the cyanide process effluent.<sup>28</sup> Although there was a plan for preventive measures in place, it proved inadequate in that it did not detect or prevent the spill.

A local environmental NGO, Nature Aid Ghana, put public pressure on the EPA to release reports of the details one month after the Ahafo cyanide spill. They also appealed to the Ministry of Environment, Science and Technology to enforce the safety rules of the environmental impact assessment they conducted years before. Nature Aid Ghana strongly condemned Newmont after the spills, accusing the company of distorting facts and making light of the impact.<sup>29</sup>

A human rights, environmental, and patriotic activist group, Youth for Action Ghana, criticized Newmont for using media to downplay the severity of the spill. The group cited previous disasters caused by Newmont, as evidence that they continued in their negligent practices. For example, there was a mercury spill in Yanacocha Mine in Peru in June 2000—before Newmont established operations in Ghana. In Indonesia, Newmont was accused of dumping mine waste into Buyat Bay killing fisheries<sup>30</sup> and causing people to develop a skin condition and neurological disorders from arsenic and mercury.<sup>31</sup>

In Grass Valley, California, the company was sued for allegedly sending toxic water to the city's sewerage treatment plant. Youth Action Ghana argues that Ghana's laws are not strong enough to hold Newmont accountable for damages as the small town in California was able to do.<sup>32</sup>

Newmont's global reputation has been scarred as a result of their questionable involvement in the two aforementioned controversies, and outside organizations have taken notice. The Public Eye on Davos is a ceremony organized by two environmental NGOs, Bern Declaration and Greenpeace Switzerland, that

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<sup>27</sup> "Cyanide Spillage, Newmont Was Negligent - EPA," *Accra Mail* (Accra, Ghana), Oct. 13, 2009.

<sup>28</sup> Earthworks, Wassa Association of Communities Affected by Mining (WACAM). "Denver-based Newmont Mining Co. fined millions for cyanide spill at Ghanaian mine," *Earthworks* (Washington, DC), Jan. 21, 2010.

<sup>29</sup> "Punish Newmont Now, EPA Told," *Ghanaian Chronicle* (Accra, Ghana), Nov. 19, 2009.

<sup>30</sup> "Youth for Action Condemns Newmont Cyanide Spillage," *Public Agenda* (Accra, Ghana), Oct. 30, 2009.

<sup>31</sup> "Spillage of Cyanide into Creek," *Ghanaian Chronicle* (Accra, Ghana), Oct. 20, 2009.

<sup>32</sup> "Youth for Action Condemns Newmont Cyanide Spillage," *Public Agenda* (Accra, Ghana), Oct. 30, 2009.

publicly shames companies infamous for their ethical and environmental missteps. It is held at the same time as the World Economic Forum, in protest. The infamous distinction of 2009 went to Newmont for destroying unique natural habitats, forcing the displacement of local people, and polluting rivers and soil, according to The Public Eye.<sup>33</sup>

## 8. Newmont's Best Practices

In emerging markets, mining activity can play a crucial role in the economic viability of the country. Although it is risky and disruptive, the net effects can be positive if properly managed—even at the level of the minority of the country's citizens who are directly affected.

In spite of the controversy associated with the Newmont brand, several benefits have been attributed to its direct investment in Ghana. As of 2011, the Ahafo mine project, alone, accounted for 1.3% of Ghana's entire GDP (the entire mining sector contributed 6.33%). In 2009, 9% of Ghana's merchandise exports came from NGGL's Ahafo project—totaling \$582 million. Between 2006 and 2010, the company paid Ghana's federal government \$62 million in royalties and injected \$162 million into the economy without accounting for capital expenditure. Total capital expenditure from that period in Ghana amounted to \$1 billion, \$882 million of which was to support the Ahafo mine. Meanwhile, NGGL directly employed 1,579 workers, 3,056 contractors, and created many more indirect jobs—based on the assumption of the typical multiplier of four indirect jobs created per direct job.<sup>34</sup>

Businessweek Africa cites an independent study by Professor Ethan Kapstein of the INSEAD Business School in Paris concluding that NGGL has spent approximately \$269 million in Ghana—49% of its gross earnings. Kapstein laments that the perpetual criticism of NGGL, by local civil society, is inconsistent with the views of members of the host community. He argues that there is a disconnect between the sentiments of the people directly affected and NGO advocates. Of NGGL's work force, 35.53% is indigenous to the ten host communities. Of the remaining workers, 60.48% are from different parts of Ghana; only 4.05% are expatriates.

NGGL has also put several programs in place to compensate for relocation and agricultural disruption, including Newmont Ahafo Development Foundation, Ahafo Social Responsibility Forum, Agriculture Improvement and Land Access Program, a Vulnerable Peoples Program, a LEAP to Skills Development for Income Improvement Program, the Ahafo Linkages Program, and an Ahafo Agribusiness Growth Initiative.<sup>35</sup>

Before NGGL's entry, 95-97% of the area's households were farmers, with a total of 6% earning actual salaries. NGGL committed to 100% local hiring for unskilled labor. In 2004 they established the National

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<sup>33</sup> Gustavo Capdevilla, "World Economic Forum: Davos Under Fire," *Inter Press Service (IPS) News Agency*, (Johannesburg, South Africa), Jan. 30, 2009, Accessed February 21, 2013 <http://www.ipsnews.net/2009/01/world-economic-forum-davos-under-fire/>.

<sup>34</sup> Toma Imirhe, "Newmont Charts Its Course to the Top of Ghana's Mining Industry," *Businessweek Africa*. Issue 415 (2012), Accessed February 21, 2013 [http://www.mybusinessweekafrica.com/features\\_detail.php?ID=48](http://www.mybusinessweekafrica.com/features_detail.php?ID=48).

<sup>35</sup> Toma Imirhe, "Newmont Charts Its Course to the Top of Ghana's Mining Industry," *Businessweek Africa*. Issue 415 (2012), Accessed February 21, 2013 [http://www.mybusinessweekafrica.com/features\\_detail.php?ID=48](http://www.mybusinessweekafrica.com/features_detail.php?ID=48).

Technical Vocational Training Center in Yamfo to train potential employees and had graduated over 600 students within the first 1.5 years of operation for semi-skilled labor.<sup>36</sup>

The 2009 Report of the External Compliance Monitoring Group (ECMG) evaluated Newmont's handling of the October cyanide spill favorably. In this case, the IFC General Environmental Guidelines, IFC Environmental and Social Guidelines for OHS, and EHS Guidelines for Mining and Milling were in question. Although the spill was the catalyst of major operational changes and containment infrastructure, it was not considered non-compliance as ECMG asserts that Newmont handled the situation appropriately. Furthermore, the emergency response team was reported to have performed well in the situation.<sup>37</sup>

By 2009, Newmont was selected for its third consecutive year as part of the Dow Jones Sustainability World Index (DJSWI). The DJSWI independently evaluates 2,500 companies from fifty-eight different sectors on criteria such as environmental management and performance, community relations, and transparency. Only the top 10% (250 firms) are publicly recognized. Newmont states that it owes some of that success to its Ahafo Linkages program. By mid-2009, they had awarded roughly \$10 million in contracts to 125 local enterprises. Additionally, the Newmont Ahafo Development Foundation is funded with \$1 per ounce of gold mined, plus 1% of Newmont's net profit. (With gold prices increasing, profits naturally rise along with contributions to the foundation).

**The Ahafo Linkages program** The Ahafo Linkages program is a partnership with the IFC that seeks to enrich the local market in mining-related and non-mining related economic activities. The goal is to develop sustained incorporation of entrepreneurs, in the affected area, into the formal economy. The Ahafo Linkages Program covers twelve communities in the region. Results from an evaluation were favorable. At initiation in 2006, the Ahafo mine contracted 25 local micro, small and medium enterprise (MSME) suppliers for a total procurement value of \$1.7 million. In 2007, such linkages increased to fifty-two suppliers at \$4.2 million. The following year yielded 125 at \$4.5 million. Additionally significant increases in adoption of formal business practices, bank credit, and meeting of tax obligations were reported.

Source: World Business Council for Sustainable Development, "Newmont: Supporting local economic growth in Ghana" (Case Study, Washington, DC, 2009), 14-15.

The Ahafo Social Responsibility Forum, made up of elected governmental and community representatives, is the body that decides on the use of the funds allocated to the foundation. Ghana's Parliamentary Select Committee on Poverty Reduction reportedly recognized the positive impact of Newmont's programs in September of 2009.<sup>38</sup> Newmont is the first gold mining company both to be listed on the Dow Jones Sustainability Index and to be completely Cyanide Management Code-certified as of the end of 2009.<sup>39</sup>

Some international conventions that Newmont participates in or commits to include the following:

<sup>36</sup> Newmont Ghana Gold Ltd. "Environmental and Social Impact Assessment." Accra, Ghana, 2005, S-9.

<sup>37</sup> External Compliance Monitoring Group (ECMG), "Report of the ECMG Sixth site visit (completion audit)," (Audit Report, Accra, Ghana, 2009), 13, 16.

<sup>38</sup> "Newmont Wins Dow Jones Sustainability World Award Again," *Public Agenda* (Accra, Ghana), Oct. 5, 2009.

<sup>39</sup> United States Securities and Exchange Commission (SEC), "Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009" (Annual Report, Washington, DC, 2009), 8.



- the Extractive Industries Transparency Initiative (EITI),
- Partnering Against Corruption Initiative (PACI)
- the Voluntary Principles on Security and Human Rights
- the Global Compact
- the Sullivan Principles and the International Council on Mining and Metals' Sustainable Development Principles<sup>40</sup>

The Global Business Coalition, a worldwide coalition of corporate organizations, recognized Newmont for its outstanding workplace program for HIV/AIDS and malaria. The HIV/AIDS program involves peer education, testing, counseling, and condom distribution for workers, contractors, suppliers, and local communities. Bed net distribution, indoor residual spraying, and education programs have reduced malaria cases from 8% of NGGL workers to 1.8% from 2006 to 2009. Both programs are executed through a partnership with the Ghana Health Service.<sup>41</sup>

## 9. Direct Economic Effects of the Spill

Despite the volume of negative press that NGGL received from the resettlement of 2005-2006 and the cyanide spill of 2009, there is no evidence of significant financial damage to the parent company or subsidiary. It is difficult to determine whether this has been the result of shrewd crisis management or an over-exaggerated account of the disasters.

It should be noted that gold prices were at all-time highs, based on the London Bullion Market, when the cyanide spill happened. Also, operations in Ghana only account for 7% of Newmont's revenue. In 2009, Newmont sold 546,400 ounces of gold from Ahafo. With \$972 per ounce as the average price in 2009, that's \$531,100,800 in sales in just one year. This puts fines of \$4.9 million into perspective. Average share prices had increased over the course of 2009 and were highest in the fourth quarter, when the cyanide spill occurred. Between 2008 and 2009, sales increased by 5%. Production costs increased by 9% due to higher labor, contractors, increased maintenance and electricity cost, and slightly increased fuel prices.<sup>42</sup>

Furthermore, NGGL has since expanded its Ahafo South mines and has completed construction of the Ahafo North mines. Additionally, construction of the Amoma mines in a different region of Ghana was initiated in 2010.

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<sup>40</sup> "Newmont Wins Dow Jones Sustainability World Award Again," *Public Agenda* (Accra, Ghana), Oct. 5, 2009.

<sup>41</sup> John Chadwick, "Great Mines: Newmont Ghana," *International Mining*, May 2001 (Hertfordshire, England), 14-15.

<sup>42</sup> United States Securities and Exchange Commission (SEC), "Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 21, 2009" (Annual Report, Washington, DC, 2009), 3, 27, 38, 68.

## 10. Conclusion

Construction of new mines sites, locally; and steadily-increasing share prices globally suggest that if there was not a notable negative economic impact to the company. Tightened practices involving tailings pools and the well-promoted success of the Ahafo development initiatives support the idea that the company continues to adapt as it learns from its mistakes and responds to outside pressure and public shaming.

Newmont's reputation in Ghana is difficult to ascertain, for a few reasons. Elapsed time makes it difficult to understand whether opinion has evolved over the years. The displacement of people for the Ahafo mine was completed by 2006 and the cyanide spill happened in 2009. Since then, there has not been a major controversy. Secondly, organized groups such as NGOs have far more capacity and a stronger voice in the media than affected populations in rural areas. It is unclear whether their views represent the concerns of the people most directly affected by the company's operations. On the other hand, the business community and government have even greater access to media. It is possible that their message may inaccurately cast the company in a more positive light for strategic benefits.

It is important to note that mining is dangerous and disruptive no matter the location, conditions, and measures taken to minimize impact. Mining companies like Newmont acknowledge that fact and work on ways to minimize the impact. Some companies do it well, and others fail. The bottom line is that all mining activities will damage some habitat, be it human, flora, or fauna. Most governments, especially those in emerging economies, cannot afford to eliminate that form of foreign direct investment. Economically sustainable companies, like Newmont, will do the minimum not to break the law of the host country and drive up costs associated with compensation for regular and expensive mishaps. Beyond that, the onus is on those governments to ensure the best-case scenario through appropriate regulations coupled with strict enforcement. Many developing countries lack the legal framework necessary for appropriate regulations. Others may not have the capacity for proper enforcement. This weakness creates potential for companies to strategically invest in countries with a high volume of resources and relatively weaker regulatory capacity. In the case of the Ahafo cyanide spill, both the US Securities and Exchange Commission and Ghanaian Chronicle reported that Ghana did not have a pre-constructed legal mechanism to determine the compensation amount.

Another issue is whether governments' penalties for policy violations are meant to be punitive or merely to compensate for damages. Penalties designed to punish the company for its mistakes, beyond compensating for destruction, would be significantly more costly. More expensive fines could act as a strong deterrent for negligent practices. However, governments should be careful to make them reasonable, lest they forgo the entire investment.

Brands are worth money. Newmont's brand has been damaged to some extent by the controversy, although the damage does not appear to be lasting or severe. Strong management, sound compliance, and creative policies that exceed legal requirements are important elements of corporate social responsibility—factors that can make a media firestorm irrelevant to corporate accountants. Newmont's

economic losses were marginal because their best practices outweighed their environmental and social missteps—in the context of a very risky industry.

## 11. Recommendations

In foreign direct investment, the most important actor is the company. They have the most decision-making power in the relationship, and stand to gain the most from the partnership. It is important for such actors to conduct business, balancing the upmost responsibility and financial feasibility. In ventures that involve resettlement of people, companies must compensate appropriately. Sometimes moving people off of their land may do more than disrupt their daily economic activity. For example, large cash transfers did not fully compensate for the long-term effects of farm destruction in the case of NGGL. With the increase of food prices and subsistence farmers losing land, thousands were forced into the formal economy. Additionally, locations bordering dislocated people and farms are negatively affected in indirect ways, such as lost local trading partners. The company should develop programs to facilitate smooth transitions between the two different ways of economic life.

Furthermore, compensatory programs should develop a participatory approach to decision-making. Situations in which people are forced off of their land rob them of their agency. Some of that power could be returned if structures are set up for affected people to help decide which development projects will be implemented for their benefit.

In anticipation of emergencies, mining companies can always improve their practices. Increasing the evaluation frequency and rigor of emergency response plans may have saved Newmont from the brand damage and compensation for the cyanide spill of 2009. Moreover, such controversies require proactive communication with the affective communities. NGGL misinformed the people that the spill was contained to the mine site, leading the public to accuse them of an attempted cover-up. Finally, mining companies and host governments should work together to predetermine mechanisms to quickly and appropriately compensate when disaster does actually happen. It took the Ghanaian governments several months to decide on the \$4.9 million compensation. The lack of capacity on the part of Ghana created a prolonged period of speculation and negative coverage for the local subsidiary as well as its parent multinational corporation.

In summary, if companies operate above minimum required standards, they will realize economic benefits in the long run. Firms with strong environmental and social practices will be able to grow with the least amount of resistance and missteps, in the host country and the international community.

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# Aligning Profit and Purpose

Starbucks' C.A.F.E. Practices Program in Latin America

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## Abstract

From 1998 to the present, Starbucks and Conservation International (CI) have partnered to improve the social and environmental impacts of Starbucks' coffee purchases. Evolving from a commitment to purchase shade-grown coffee to the Coffee and Farmer Equity Practices (C.A.F.E. Practices) purchasing standard, carbon offsets, and credit extension for small farms, the partnership has improved sustainability outcomes throughout Starbucks' supply chain. This case study demonstrates that when a major multinational company joins forces with a non-governmental organization (NGO), it can proactively address sustainability risks and secure brand reputation. Starbucks proves that profit and purpose can be achieved in tandem.

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## Acronyms

CI	Conservation International
EU	European Union
FY	Fiscal Year
ICA	International Coffee Agreement
ILO	International Labor Organization
NGO	Non-governmental organization
VRS	Verified Reporting System

## Definitions

### **C.A.F.E. Practices**

Coffee and Farmer Equity (C.A.F.E.) Practices program is Starbucks' comprehensive purchasing standards program for improving the environmental, social and economic impacts of coffee procurement. The C.A.F.E. Practices were developed in conjunction with the environmental non-governmental organization Conservation International.

### **Large Farm**

A farm that is 125 acres or more.

### **PSO**

Producer support organizations (PSOs) are organizations such as cooperatives, associations or networks of farms that supply coffee to centralized processing facilities. These organizations help small farms organize, facilitate or deliver coffee.

### **Small Farm**

A farm that is 25 acres or less.



## 1. Introduction

Every day, 2.5 billion cups of coffee are consumed globally, making coffee the world's most widely traded tropical agricultural commodity. Moreover, coffee is the second most valuable traded good after petroleum; \$15 billion worth of green coffee is exported each year, leading some to call coffee "black gold."<sup>1</sup> The nickname "black gold" implies that someone or something earns great wealth from participating in the coffee trade. Historically, coffee wealth has accrued to wealthy corporations (roasters, consumer goods companies and specialty shops) in the Global North with little of the wealth shared with coffee farmers in the Global South. Over the last decade, however, the benefits of coffee trade have gradually been shared more equitably, and steps have been taken to reduce the environmental impacts of coffee production. Starbucks, with the help of Conservation International, is helping lead this industry shift.

Since 1998, Starbucks and Conservation International (CI) have partnered to make Starbucks' coffee procurement program more sustainable, most notably through the Coffee and Farmer Equity (C.A.F.E.) Practices program. C.A.F.E. Practices evaluates environmental, social and economic factors at farms that supply coffee beans to Starbucks. Points are assigned for each sustainability indicator met, and farms that reach a high enough score become preferred suppliers. Though not without its critics, the C.A.F.E. Practices program has brought environmental and social benefits to farmers in Latin America that grow coffee for Starbucks, as well as tangible brand improvement and risk mitigation to Starbucks itself. The program is a positive case study for taking proactive measures to manage business risk and increase customer loyalty, while at the same time making a positive impact on communities and ecology.

## 2. Background

### 2.1 Starbucks Profile

Founded in 1971 in Seattle, Washington, the coffee company Starbucks rapidly expanded and become a multinational presence. In 1987, current chairman and CEO Howard Schultz purchased the company and brought it public in 1992. By 2002, there were more than 5,500 Starbucks stores, 4,000 in the United States and 22 internationally.<sup>2</sup> By 2014, Starbucks plans to have 20,000 stores on six continents.<sup>3</sup> This rapid growth has led to continuous revenue growth. In its 2012 annual report, Starbucks reported \$13.3 billion in revenues, its highest ever (Figure 1).<sup>4</sup>

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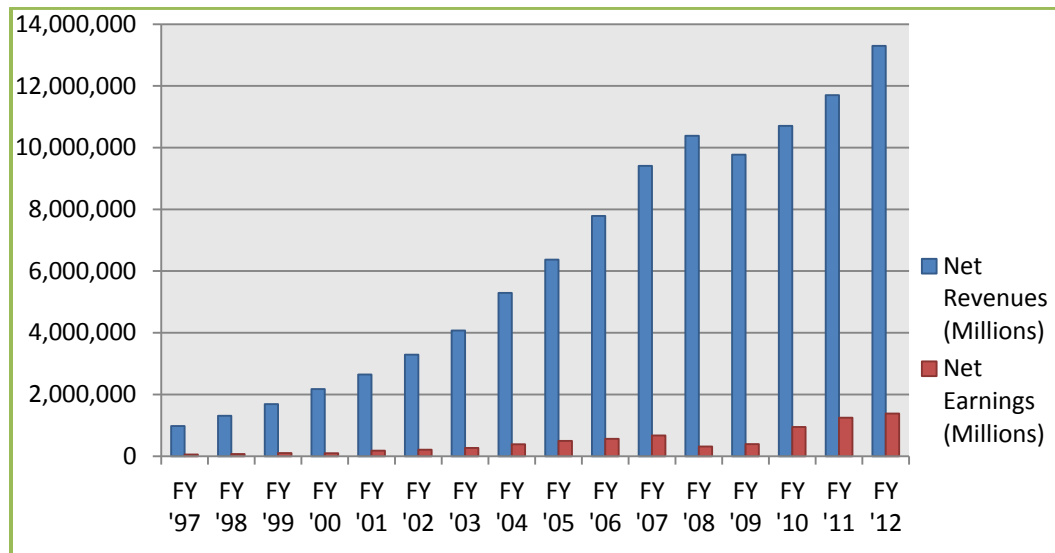
<sup>1</sup> Dan Charles, "How Coffee Brings the World Together," NPR, April 22, 2013, accessed April 23, 2013, [http://www.npr.org/blogs/thesalt/2013/04/22/177975138/how-coffee-brings-the-world-together\\_](http://www.npr.org/blogs/thesalt/2013/04/22/177975138/how-coffee-brings-the-world-together_)

<sup>2</sup> James E. Austin and Cate Reavis, "Starbucks and Conservation International," Harvard Business School Case Study, May 1, 2004, accessed January 23, 2013, <http://hbr.org/product/starbucks-and-conservation-international/an/303055-PDF-ENG>.

<sup>3</sup> Starbucks Corporation Fiscal 2012 Annual Report, last modified 2013, accessed April 28, 2013, <http://investor.starbucks.com/phoenix.zhtml?c=99518&p=iro-l-reportsannual>.

<sup>4</sup> Starbucks 2012 Annual Report.

**Figure 10: Starbucks Corporation Net Revenues and Net Earnings, 1997-2012** <sup>5</sup>



Since its creation, Starbucks has completely changed the way coffee is consumed in the United States. By creating a café-like atmosphere, Starbucks invited Americans – and now global consumers – with disposable income to consume coffee outside of home or work, which was a novel experience.<sup>6</sup> It also opened up additional opportunities for revenue-making. Most of Starbucks’ profits come from drink add-ons like syrups, steamed milk and the overall café ambiance that customers have come to expect, not from the coffee itself.<sup>7</sup>

## 2.2 Conservation International Profile

Founded in 1987, Conservation International is an environmental non-governmental organization (NGO) focused on allowing communities to conserve ecology and biodiversity while earning livelihoods for themselves. CI is one of the largest environmental NGOs in the world, with more than 900 employees in nearly 25 countries.<sup>8</sup> In 2011, CI had \$140,766,897 in revenue from membership dues, fundraising, foundations, government grants and more. That same year it spent \$119,557,506, leaving a surplus of \$21,209,391. CI ended 2011 with net assets of \$248,736,089.<sup>9</sup>

CI often partners directly with multinational corporations to meet the goal of helping communities gain economic opportunity while living harmoniously with nature. Unlike many other NGOs, CI will take corporation contributions, and in 2010, corporate donations comprised 20% of CI’s revenue intake.<sup>10</sup> In

<sup>5</sup> Annual Reports 1999-2012, last modified 2013, accessed April 28, 2013, <http://investor.starbucks.com/phoenix.zhtml?c=99518&p=irol-reportsannual>.

<sup>6</sup> Benoit Daviron and Stefano Ponte, *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development*, (London: Zed Books, 2005), 78.

<sup>7</sup> Benoit Daviron and Stefano Ponte, *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development*, 77.

<sup>8</sup> “Verde Ventures 2,” Conservation International, accessed April 28, 2013, <http://www.conservation.org/global/verdeventures/vv2/pages/default.aspx>.

<sup>9</sup> FY2011 Form 990, Conservation International, last modified 2012, accessed April 28, 2013, [http://www.conservation.org/about/annual\\_report/Documents/CI\\_FY11\\_Form\\_990.pdf](http://www.conservation.org/about/annual_report/Documents/CI_FY11_Form_990.pdf)

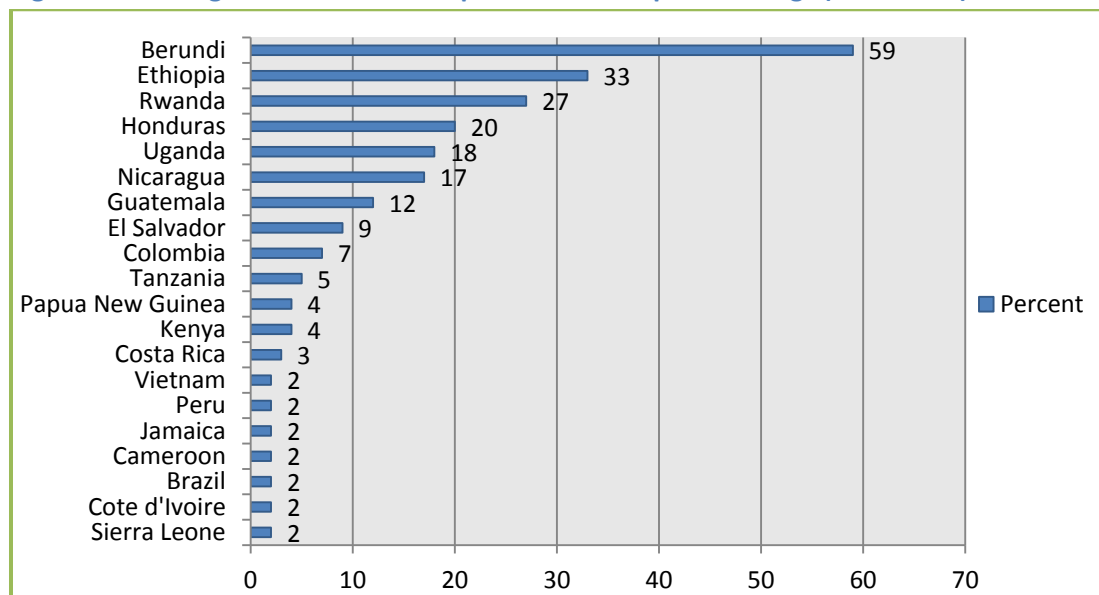
<sup>10</sup> Conservation International Annual Report 2010, accessed April 28, 2013, [http://www.conservation.org/SiteCollectionDocuments/CI\\_AnnualReport10.pdf](http://www.conservation.org/SiteCollectionDocuments/CI_AnnualReport10.pdf)

addition to working with Starbucks on coffee sustainability, CI has other notable corporate partners; it is working with Disney to reduce carbon emissions, McDonald’s to educate children about species preservation, and Nestle to end deforestation in its operations.<sup>11</sup> These close ties between industry and an environmental nonprofit sometimes leave environmentalists skeptical of CI’s efficacy and objectivity, but this case study shows that, in the case of Starbucks and CI, the company-NGO model has been beneficial to people and planet.

### 2.3 The Coffee Industry and Its Crisis

Coffee plants thrive in warm weather and high altitudes, which means most of the world’s coffee production occurs in tropical regions in Latin America, Southeast Asia, and Africa.<sup>12</sup> Often, coffee accounts for a disproportionately large percentage of exports for countries in the Global South, making local economies vulnerable to changing international coffee commodity prices (Figure 2). Despite having comparatively less of their total export earnings come from coffee sales, Brazil and Vietnam are, respectively, the first and second largest producers of coffee worldwide.<sup>13</sup>

Figure 11: Average share of coffee exports in total export earnings (2000-2010)<sup>14</sup>



Global coffee producers struggled in the decade before and the early years of the Starbucks-CI partnership. Through 1989, the International Coffee Agreement (ICA) maintained global coffee prices through a quota system that put export limits on coffee-growing countries. In 1989, the agreement broke down due to disagreement between ICA members. Without the ICA, coffee production spiked and prices fell precipitously. By the end of 2001, coffee commodity prices had hit a 30-year low, and the

<sup>11</sup> “Corporate Partnerships,” Conservation International, accessed April 28, 2013, <http://www.conservation.org/how/partnership/corporate/Pages/nestle.aspx>.

<sup>12</sup> Dan Charles, “How Coffee Brings the World Together.”

<sup>13</sup> “Fair Trade and Coffee,” Fair Trade Foundation, last modified May 2012, accessed April 28, 2013, [http://www.fairtrade.org.uk/includes/documents/cm\\_docs/2012/F/FT\\_Coffee\\_Report\\_May2012.pdf](http://www.fairtrade.org.uk/includes/documents/cm_docs/2012/F/FT_Coffee_Report_May2012.pdf).

<sup>14</sup> “World Coffee Trade,” International Coffee Organization, accessed April 28, 2013, [http://www.ico.org/trade\\_e.asp](http://www.ico.org/trade_e.asp).

world's more than 25 million coffee farmers were selling their beans at a loss. Oxfam adjusted the coffee bean prices for inflation and determined that in real terms, beans were selling at a 100-year low.<sup>15</sup>

Most coffee was (and continues to be) grown by small-scale farmers, and the depressed global prices impacted them quickly and severely. Acute hunger plagued coffee producers and their families, prompting emergency World Food Program actions in Central America; **European Union (EU) and USAID** warnings about farmers in Ethiopia; and farmers in Vietnam being categorized as “pre-starvation.”<sup>16</sup> Children were pulled out of school and governments lost revenue needed to provide healthcare.<sup>17</sup> Impacts of the crisis were most severe for the laborers who grew and picked coffee on someone else's land. Even before the coffee crisis, these seasonal workers earned meager wages and often lived onsite with other workers, without clean water or adequate sanitation. As coffee prices plunged during the crisis, many of these workers, including at least 600,000 in Central America, were let go.<sup>18</sup>

Against this backdrop, Starbucks came under pressure from customers and fair trade organizations to be a more socially- and environmentally-minded company, and it responded through its partnership with CI.

## 2.4 The Partnership

Because of the sheer volume of trade, coffee companies have significant influence over economic, social and environmental impacts in coffee growing communities. Consumers and nonprofit organizations concerned about environmental and social outcomes recognized major coffee companies' coffee procurement programs as an effective point of intervention. Beginning in the 1990s, Starbucks, as one of the most globally recognized coffee brands, faced pressure – both internally and externally – to act for the betterment of sustainability factors in its coffee supply chain. As a result of NGO and customer pressures and a strong business case for action, Starbucks launched a partnership with CI in 1998 that continues to this day.

The three-part partnership includes a coffee sustainability certification program (C.A.F.E. Practices), the crux of the partnership and this case study, as well as newer endeavors into carbon markets and small loans to farmers. The partnership brought measurable environmental and social improvements to coffee farms and farmers, improved Starbucks' public image, and made Starbucks' supply chain more reliable. The partnership not only improved coffee's sustainability, but it also made business sense for Starbucks. The program can be expected to continue into the future.

CI, concerned for some time about how coffee production was destroying biologically diverse areas of the world, approached Starbucks about a partnership. According to CI, 16 of the world's 34 biodiversity

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<sup>15</sup> “Mugged: Poverty in Your Coffee Cup,” Oxfam, last modified 2012, accessed April 28, 2013, <http://www.oxfamamerica.org/files/mugged-full-report.pdf>.

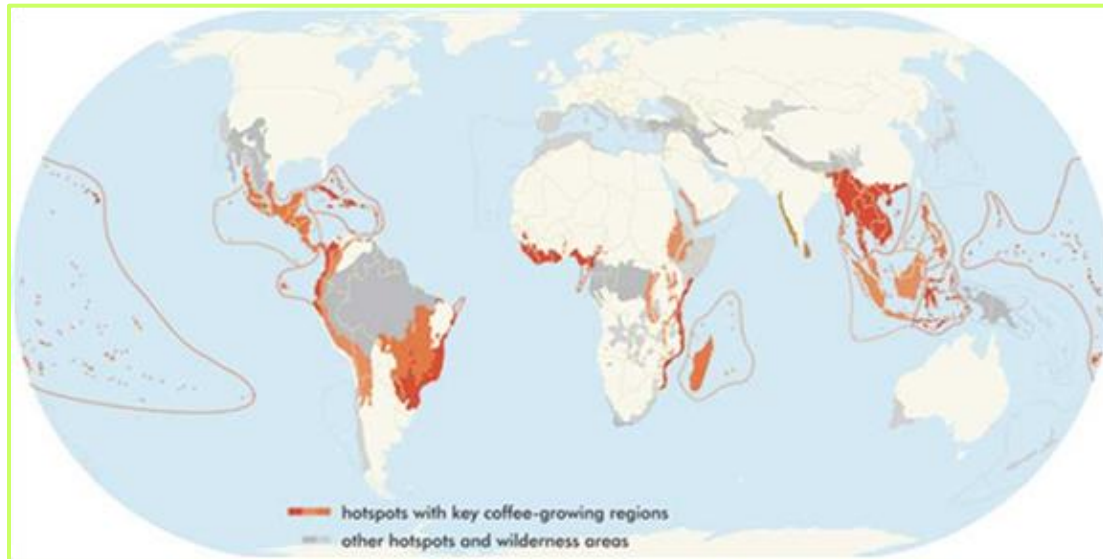
<sup>16</sup> “Mugged,” Oxfam.

<sup>17</sup> “Mugged,” Oxfam.

<sup>18</sup> “Mugged,” Oxfam.

hotspots were also coffee production regions (Figure 3).<sup>19</sup> Many of these regions were threatened by deforestation as trees were cleared to make room for large coffee production fields. CI knew that traditional, shade-grown coffee could stave off deforestation and protect biodiversity. Initially, however, shade-grown production was not economically viable compared to sun cultivated coffee, which was cheaper in the short-term and had higher yields.

**Figure 12: Strong Overlap Between Coffee Producing Regions and Biodiversity Hotspots**<sup>20</sup>



The first stage of the partnership ran from 1998 to 2003. It began with Starbucks agreeing to purchase shade-grown coffee from a project CI was running in Chiapas, Mexico. CI chose Chiapas for its Conservation Coffee Program because it abuts the El Triunfo Biosphere Reserve, whose rainforests and cloud forests house incredible biodiversity:

Located in the highest ridges of the Sierra Madre, the reserves' 120,000 hectares (approximately 300,000 acres) of pristine rain and cloud forests harbored one of the most diverse areas of trees in all of Central and North America. The research provided a habitat for numerous rare and threatened species, including the Pavón and Quetzal birds, jaguars, tapirs and over 100 other species of mammals and nearly 1,000 of flora. The Sierra Madre range was a critical habitat for migratory birds. The forest reserve was among the country's highest rainfall areas and therefore a major water source for the adjacent and distant Pacific Coast farms as well as the nearby hydroelectric dams, which were a major source of electricity for southern Mexico and exports to Central America. Standing forests helped regulate the region's climate.<sup>21</sup>

<sup>19</sup> "Coffee Comes from the Hotspots," Conservation International, last accessed April 28, 2013, [http://www.conservation.org/campaigns/starbucks/Pages/hotspots\\_and\\_coffee.aspx](http://www.conservation.org/campaigns/starbucks/Pages/hotspots_and_coffee.aspx)

<sup>20</sup> "Coffee Comes from the Hotspots," Conservation International

<sup>21</sup> James E. Austin and Cate Reavis, "Starbucks and Conservation International."

Approximately 14,000 coffee farms grew beside the research site and served as important buffer zones, protecting the biodiversity hotspot in the El Triunfo Biosphere Research. To entice the farmers not to convert their farms into large, sun fields but rather to continue using shade-grown coffee techniques, CI's Coffee Initiative offered the farmers on-the-ground assistance to improve growing techniques, coffee quality, and marketing. Making shade-grown coffee economically rational for farmers, however, required CI to find a dedicated specialty coffee buyer, and that is the role that Starbucks initially played.

At the time that CI approached Starbucks about becoming a dedicated shade-grown coffee purchaser, Starbucks had already been receiving a growing number of customer inquiries about purchasing shade-grown coffee and protecting the rainforest. Thus, CI had a receptive audience. Not only did Starbucks already have clearly defined sustainability principles guiding its governance process, but it was also starting to face pressure from its customers to make more sustainable purchases.

In the first year of the partnership, Starbucks purchased 76,000 pounds of shade-grown coffee, a small portion of its total purchases, from cooperatives in CI's program. By 2002, Starbucks purchased 1.5 million pounds of shade-grown coffee.<sup>22</sup> Both parties deemed the initial stage of the partnership successful, and it quickly grew. Within just the first year of the partnership in Chiapas, there was 30% growth in the number of participating farmers, and the farmers' average incomes grew by 40%.<sup>23</sup>

Whereas the first stage of the partnership focused exclusively on shade growing techniques, the second stage expanded focus to environmental, social and economic factors through a newly developed coffee certification program. Starbucks developed an initial coffee certification scheme around 2001, but in 2004 formally launched the Coffee and Farmer Equity (C.A.F.E.) Practices program with CI. The C.A.F.E.

#### **Shade-grown Coffee 101**

Shade-grown coffee is coffee that is produced under a canopy of trees, as opposed to coffee that is grown in large, plantation-style fields with full sun exposure. Shade-grown coffee may have lower yields than sun-grown coffee does and is initially more expensive for coffee farmers, but it has economic and ecological benefits that make it an important component of sustainable coffee supply chains. Whereas sun-grown coffee production leads to soil nutrient depletion, soil erosion, and chemical fertilizer dependence, shade-grown coffee helps combat climate change and maintain rich soil and clean water by leaving forests intact. Moreover, it provides alternative revenue sources to coffee farmers who can sell fruits from canopy trees. This alternative revenue stream shelters farming families from coffee price fluctuations. Finally, shade-grown coffee picks up taste characteristics that are unique to each coffee growing region. This means that coffee companies can sell shade-grown coffee to coffee connoisseurs at a premium. Shade-grown coffee is a win for the environment, farmers, and major companies.

<sup>22</sup> James E. Austin and Cate Reavis, "Starbucks and Conservation International."

<sup>23</sup> "Starbucks Coffee Company," Conservation International, accessed April 28, 2013, <http://www.conservation.org/how/partnership/corporate/Pages/starbucks.aspx>.

Practices program integrates sustainability factors into all of Starbucks' coffee purchases and allows the company to rapidly scale up its positive impact on conservation, livelihoods and product quality.

Farms, mills and producer support organizations (PSOs) are rated as compliant, non-compliant, or non-applicable based on a series of 249 indicators used to assess triple bottom line factors.<sup>24</sup> Environmental considerations seek to protect the sensitive and biodiverse regions that frequently grow coffee. Social considerations contain a range of rights from workplace safety to quality of life. Economic considerations seek to provide financial accessibility to small-scale farmers, reward high performers, and ensure that procured coffee meets Starbucks' quality standards (Table 1).

**Table 1: C.A.F.E. Practices Considerations**

<b>C.A.F.E. Practices Indicator Categories</b>		
<b>Environmental</b>	<b>Social</b>	<b>Economic</b>
Wages	Soil	Equitable payments
Benefits	Waste	Receipts/invoices
Education	Water use and conservation	Green coffee preparation
Medical care	Shade canopy	Cup quality
Living conditions	Energy	Long-term viability
Human rights	Agro-chemical use	Farm traceability
	Wildlife	

Starbucks continues to increase the volume of C.A.F.E. Program-verified coffee purchases each year, and the C.A.F.E. growing programs have expanded from Mexico to Colombia and Guatemala, and now to three continents (Latin America, Africa and Asia). In 2012, 93% of Starbucks coffee was ethically sourced (including 90% that was C.A.F.E. Program-certified), and the company plans to purchase 100% of coffee from certification systems, including C.A.F.E. Practices, by 2015.<sup>25</sup>

To measure progress toward meeting C.A.F.E. Program standards in these environmental, social and economic categories, Starbucks and CI conduct annual results assessments globally, and they have

<sup>24</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10," last modified March 2012, accessed April 28, 2013, [http://www.conservation.org/global/celb/Documents/2012.03\\_CAFE\\_Practices\\_Assessment\\_FY08-FY10.pdf](http://www.conservation.org/global/celb/Documents/2012.03_CAFE_Practices_Assessment_FY08-FY10.pdf).

<sup>25</sup> "Ethically Sourced Coffee Goals and Progress," Starbucks, accessed April 28, 2013, <http://www.starbucks.com/responsibility/sourcing/coffee>.

conducted field studies in Colombia and Guatemala. For these field studies, CI developed surveys for farmers to assess and evaluate C.A.F.E. implementation.

Meanwhile, relationships built during the first stage of the partnership in Mexico continued into the second. In Chiapas, more than 200,000 tree seedlings have been planted to help restore forest cover and return to shade-growing practices, and more than 23,000 carbon offsets have been sold.

### 3. Project Impacts

The C.A.F.E. program brought environmental and social benefits to coffee growing communities and made financial sense for Starbucks. The section below presents the social, environmental and financial impacts of the program, as reported by Starbucks and CI.

#### 3.1 Impact Reporting Methodology

The partners report on project impacts biennially in robust and transparent reports. Reported data is third-party verified, a best practice for corporate sustainability projects, by SCS Global Services.<sup>26</sup> During Fiscal Year (FY) 2008 and FY 2010, third party-accredited verifiers reviewed practices at farms and mills and helped input the data into Starbucks' Verified Reporting System (VRS). Data in the VRS was combined with data from Starbucks' agronomy database to create a final dataset for review and publication. CI worked with Starbucks on data review, making corrections if needed. The results are generated by a randomly-selected sample of small and medium farms, and a review of all large farms. Results were culled from 3.9 percent of C.A.F.E. farms in FY08, 1.7 percent in FY09, and 4.4 percent in FY10.<sup>27</sup> In FY10, 103,521 farms, the majority of which were small farms, totaling 479,309 acres, were included in the C.A.F.E. Program (Table 2).<sup>28</sup>

**Table 2: Small, Medium and Large Farm Participation in C.A.F.E. Program**

Farm Size	Farm Count		
	FY08	FY09	FY10
Small	139,513	166,946	101,809
Medium	1,048	1,595	1,193
Large	412	688	519
All	140,973	169,209	103,521

<sup>26</sup> "Starbucks C.A.F.E. Practices: Ensuring the Ethical Sourcing of Coffee," SCS Global Services, accessed April 28, 2013, <http://www.scsglobalservices.com/starbucks-cafe-practices>.

<sup>27</sup> Bambi Semroc et al., "Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>28</sup> Bambi Semroc et al., "Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."



### 3.2 Social

Overall, the C.A.F.E. Practices program provides benefits to coffee farmers that they may not otherwise have. While there are still improvements that could be made, Starbucks is using its substantial purchasing power in ways that generally benefit producers and their communities.

#### 3.2.1 Jobs

Historically, the coffee economy has been characterized by a tendency to produce temporary, low-wage, and thus insecure, jobs. While farms following C.A.F.E. Practices are not suddenly free from the pressure to rely on low-wage labor, there are signs of improvement, and there are indications that having a dedicated buyer interested in social outcomes is improving job opportunities for coffee farmers. In FY10, the more than 800,000 coffee jobs at farms following C.A.F.E. Practices broke down as shown below (Table 3).<sup>29</sup>

**Table 3: Coffee Jobs by Employment Type and Farm Size, FY10**

Worker Type	Small Farm	Medium Farm	Large Farm	All
Full-time	10,466	4,183	16,938	31,587
Part-time	5,524	168	337	6,029
Temporary	588,966	126,981	84,257	800,204
Total	604,956	131,332	101,532	837,820

Clearly, temporary labor still comprises too large a share of the coffee workforce to provide a steady economic situation for the majority of C.A.F.E Practices farm laborers. Nonetheless, some trend lines are moving in an encouraging direction. Large farms employed more than 7,800 more full-time workers in FY10 than they did in FY08. (Across all years sampled, large farms provided the most full-time jobs).

#### 3.2.2 Labor Rights and Compensation

Several of the C.A.F.E. Practices indicators related to labor rights are considered zero-tolerance. Starbucks will lower its volume of coffee purchases from farms that do not meet the following minimum standards:

- Full-time, part-time and temporary workers receive the national or regional minimum wage;
- No one under age 14 is employed;
- Anyone older than 14 can only be employed if their job does not keep them out of school;
- Farm management follows non-discrimination as defined in International Labor Organization (ILO) Convention 111; and
- There is no “forced, bonded, indentured, involuntary or convict labor.”<sup>30</sup>

<sup>29</sup> Bambi Semroc et al., “Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10.”

<sup>30</sup> Bambi Semroc et al., “Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10.”

In FY10, 1.6 percent of C.A.F.E. farms were found to be in violation of these zero-tolerance indicators. This was a nearly twofold improvement from FY08, when 3.1 percent of farms were found to be in violation.<sup>31</sup> Farms that are in violation of the indicators tend to rectify the situation. Farms in Papua New Guinea, Nicaragua, Guatemala, Colombia and Costa Rica were found in FY08 to not be paying minimum wage to workers, but by FY10, 100% of all farms in these countries met minimum wage standards.<sup>32</sup> That same year, 67% of large farms, 70% of medium farms, and 72% of small farms paid workers above minimum wage.<sup>33</sup>

At the minimum, C.A.F.E. works to weed unacceptable labor practices out of Starbucks' supply chain and insulate it from labor risk. Once a minimum threshold of labor rights is established, other social benefits can be provided.

### 3.2.3 Other Benefits

While Starbucks and CI see steady jobs with decent wages as the foundation for better lives for farmers and workers in the coffee supply chain, they recognize that other benefits are crucial to social wellbeing as well. The C.A.F.E. Practices program also includes indicators related to health, wellness and child development.

Paid sick leave and paid annual leave, or vacation days, are generally benefits only afforded to full-time or permanent workers. Temporary workers, who are the majority of workers especially on small farms, do not receive paid leave. From FY08-FY10, 85 to 95% of full-time workers at medium and large farms received paid sick leave, but when small farms were added to the calculation, only about half of full-time workers earned paid sick days.<sup>34</sup> Being able to take a sick day without fear of losing a vital day of income is an important component of job security. Thus, it will be important to expand these benefits in the future. Paid vacation days also provide quality of life improvements to workers. In FY10, 90% of large farms and 75% of medium farms provided workers with at least ten days of paid vacation.<sup>35</sup> Again, these benefits are not generally provided at small farms, and Starbucks does not require or measure these paid leave indicators for small farms. These indicators should be expanded in future iterations of the program.

Starbucks and CI also look to make sure that coffee production is not preventing children from attending school. Similar to other benefits, the expectations placed on small farms under the C.A.F.E. Practices program are different than those placed upon medium and large farms. Small farms are required to verify that children have the opportunity to attend school and that no school-aged children work on the farm during school hours. One hundred percent of small farms with children ensured that students attended school in FY10.<sup>36</sup> Starbucks and CI are now collecting data to learn how many children live on small-scale farms and are impacted by this indicator. If formal educational institutions are not readily

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<sup>31</sup> Bambi Semroc et al., "Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>32</sup> Bambi Semroc et al., "Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>33</sup> Bambi Semroc et al., "Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>34</sup> Bambi Semroc et al., "Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>35</sup> Bambi Semroc et al., "Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>36</sup> "Ethical Coffee Sourcing and Farmer Support," Starbucks, last updated March 2012, accessed April 28, 2013, <http://www.starbucks.com/assets/6e52b26a7602471dbff32c9e66e685e3.pdf>.

accessible, medium and large scale farms are asked to provide onsite educational opportunities to children. In FY10, 17% of these farms “were in areas that lacked sufficient access to primary schools, but 97% managed to provide on-site access to primary educational instruction, facilities, and materials that meet national requirements for the children in their community.”<sup>37</sup> At the secondary education level, 86% of medium and large farms provided educational opportunities for children when public facilities were not available.<sup>38</sup> One hundred percent compliance with education indicators should be a goal for successive years of the program.

Finally, similar requirements to those for education are in place for access to medical care. Small farms are exempt from this requirement. Forty-four percent of medium and large farms provided financial support for medical centers for farm workers, and 87% of full-time workers and 71% of all workers received pricing offsets to help with healthcare.

Providing secure, well-paying jobs with benefits is a change for the coffee industry, and there will be learning curves for Starbucks, CI, and the farms themselves. To help with some of the costs of transitioning to C.A.F.E. Principle standards, participating farms are awarded a one-year \$0.01/pound increase on all shipments.<sup>39</sup>

Some critics contend that the Starbucks system undercut cooperatives that had sprung up among small farms to protect them against powerful coffee trading companies, which are often the only buyer of beans in town. In Mexico, for example, Starbucks required participants in its shade-grown program to work with AMSA, the local branch of multinational company ECOM Trading.<sup>40</sup> In doing so, it undermined the cooperative system that was created to challenge AMSA’s local market power. This critique is reminiscent of a general thread of criticisms against CI and Starbucks that the program is too top-down and proscriptive for small farms. These concerns seem to be being addressed through producer support organizations in C.A.F.E. Practices and through the care that Starbucks and CI take to set more attainable standards for small farms than for large farms. It serves as a good reminder to a large multinational company and large international NGO that they wield quite a bit of power over local communities and should listen to communities’ concerns whenever possible.

### 3.3 Environmental

From the beginning of the partnership, CI and Starbucks were concerned about biodiversity protection in and around coffee farms. Under C.A.F.E., more environmental factors were considered. None of the 108 environmental indicators are zero-tolerance indicators, but nine of them must be met to receive any other points in the scoring category.

#### 3.3.1 Biodiversity

At the time that CI began its initial pilot project in Chiapas, Mexico in 1996, the biggest threat to habitat was deforestation. C.A.F.E. Practices and the partnership between Starbucks and CI kept essentially all

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<sup>37</sup> Bambi Semroc et al., “Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10.”

<sup>38</sup> Bambi Semroc et al., “Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10.”

<sup>39</sup> Daniele Giovannucci and Stefano Ponte, “Standards as a New Form of Social Contract? Sustainability Initiatives in the Coffee Industry,” *Food Policy* 30 (2005): 296.

<sup>40</sup> Marie-Christine Renard, “In the Name of Conservation: C.A.F.E Practices and Fair Trade in Mexico,” *Journal of Business Ethics* 92 (2010): 293.

(at least 99%) of the participating farms from converting any forest habitat into sun coffee production.<sup>41</sup> Relatedly, participating farms set aside 108,632 hectares (ha) for conservation in FY10.<sup>42</sup> Large farms tended to set aside five percent of their land for conservation; small farms do not need to do so for C.A.F.E. Practices indicator points.<sup>43</sup>

To protect biodiversity, the early partnership focused on shade-grown coffee, and FY10 data indicates that shade-grown practices are not widespread among C.A.F.E. Practices farms. More than 80% of farms of all sizes had shade on at least 10 percent of their farms. Beyond 10 percent shade cover, the number of farms in compliance dropped quickly. Just over 40% of large farms shaded 40% of their properties.<sup>44</sup> Small farms were not evaluated against the 40% shade metric. Notably, Starbucks and CI delineate the quality of shade cover that is preferable. C.A.F.E. Practices indicators ask whether 75% of shade trees are native species, whether the canopy has at least 10 species that provide conservation benefits, and whether the canopy has two distinct layers.<sup>45</sup> Some studies cast doubt on the benefit of shade-grown coffee for protecting biodiversity, but this is generally when there are no market incentives for farmers to continue to use shade-grown techniques.<sup>46</sup> Starbucks and CI's program seems to straddle somewhere in the middle of this. With their incentives forested land is not being put into production, but shade-grown continues as a small percentage of C.A.F.E. Practices farm production.

In field surveys of specific sites, the biodiversity benefits of C.A.F.E. conservation requirements are evident. A 2009 field survey of 582 farmers (some C.A.F.E. Practices participants, and some not) in the Huehuetenango and Jalapa regions of Guatemala found statistically significant increases in species diversity and presence at C.A.F.E. Practices farms compared to non-C.A.F.E. farms. Around Huehuetenango, 20% of respondents in the control group reported an increase in species observed, compared to 43% of C.A.F.E. Practices participants who reported seeing more species. Around the Jalapa area, seven percent of the control group reported seeing more bird and other species compared to 42% of C.A.F.E. Practices participant farmers who reported seeing an increase in fauna diversity.<sup>47</sup>

### 3.3.2. Water

Farms of all sizes are asked to establish "riparian zones to protect water bodies from sedimentation, nutrient runoff, agrochemical application and waste disposal," and large farms generally performed best on this indicator.<sup>48</sup> Ninety-seven percent of farms preserved a two-meter riparian zone along 25% of water bodies. Eighty-eight percent preserved a two-meter riparian zone along 50% of water bodies, and 66% set aside a two-meter riparian zone along all water bodies.<sup>49</sup> The majority (61%) of these buffer zones were planted with native, woody vegetation, and small farms outperformed the others in this

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<sup>41</sup> "Ethical Coffee Sourcing and Farmer Support," Starbucks.

<sup>42</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>43</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>44</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>45</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>46</sup> Cesar Tejeda-Cruz et al., "Why Shade Coffee Does Not Guarantee Biodiversity Conservation," *Ecology and Society* 15 (2010): 1-13.

<sup>47</sup> Teresa Castillejos, Elizabeth Baer and Bambi Semroc, Guatemala Field Survey Report, Conservation International, last modified December 21, 2010, accessed April 28, 2013, [http://www.conservation.org/global/celb/Documents/2011.04.06\\_Starbucks\\_Guatemala\\_Report.pdf](http://www.conservation.org/global/celb/Documents/2011.04.06_Starbucks_Guatemala_Report.pdf).

<sup>48</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>49</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

regard. Sixty-one percent of small farms used native vegetation in all riparian zones; 52% of medium farms and 45% of large farms did the same.<sup>50</sup> Related to planting buffer zones, farms are also evaluated on whether they avoid applying chemicals near water sources. Eighty-one percent of farms of all sizes said they did not apply any agrochemicals within ten meters of water, and essentially all (96%) farms did not apply the pesticide for ringworms within 20 meters of water.<sup>51</sup>

### 3.3.3. Soil

Another set of indicators evaluated soil management techniques, with particular attention to preventing soil erosion. Requirements for slope management ratchet up in tandem with the severity of a slope. A severe hill with a greater than 30% incline had significantly more requirements than one with a ten degree slope, for instance, and farms with the steepest of hills were asked about landslide risk mitigation. Nearly 60% of all farms protected slopes that were 10-20% inclines. Large farms performed the best on this indicator, nearly 80% of them protecting hills of this incline. Small farms performed the worst; 60% of them protected low-grade hills against erosion.<sup>52</sup> Approximately 60% of farms of all sizes protected hills that were 20-30% inclines against erosion at all size farms.<sup>53</sup> Nearly 80% of all farms protected hills that were steeper than 30 percent inclines against erosion.<sup>54</sup>

Soil quality is also maintained through the use of cover crops and nitrogen-fixing trees, both of which are awarded points under the C.A.F.E. Practices program. Starbucks and CI encouraged participating farms to use cover crops and/or spread decaying matter over coffee producing areas. Doing so helped maintain soil nutrient vitality and prevent erosion. Nearly 80% of large farms used either cover crops or decaying matter. Around 60% of small farms and medium farms did so.<sup>55</sup> One of the benefits of cover crops is that certain varieties can naturally restore nitrogen to soils. Nitrogen is one of the key nutrients coffee plants need to thrive, and planting leguminous trees that naturally restore nitrogen to soils can minimize or negate the need for artificial nitrogen fertilizer applications. In FY10, just shy of 40% of large and small farms had planted trees that restore nitrogen to the soil, and nearly 60% of medium farms had done so.<sup>56</sup> There is room to combine capacity building on shade-grown techniques with capacity building on leguminous trees in future iterations of the program.

## 3.4 Financial

In the past 40 years, Starbucks has invested \$70 million into sustainable sourcing initiatives, including its C.A.F.E. Practices work with CI.<sup>57</sup> When companies make that level of investment, it generally means there is a strategic value to the company in doing so. In Starbucks' case, though it does seem genuinely interested in doing what is right for the environment and people that produce coffee, it also receives

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<sup>50</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>51</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>52</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>53</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>54</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>55</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>56</sup> Bambi Semroc et al., Assessment of the Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices Program FY08 - FY10."

<sup>57</sup> "Starbucks Expands \$70 Million Ethical Sourcing Program With New Global Agronomy Center," Starbucks, last modified March 18, 2013, accessed April 28, 2013, [http://news.starbucks.com/article\\_display.cfm?article\\_id=762](http://news.starbucks.com/article_display.cfm?article_id=762).

tangible business benefits. Namely, it manages risk in its supply chain and improves its brand loyalty. Both of these are fundamental to the business bottom line.

### 3.4.1 Supply Chain

A consistent and high-quality supply of coffee is necessary for Starbucks to prosper. The C.A.F.E. Practices program helps Starbucks to formalize its coffee supply chain and make it more predictable. For example, producer support organizations (PSOs) were established to support networks of small farms. Nearly 95% of PSOs implemented tracking systems to trace coffee from the point of purchase to the point of export. At least 87% of PSOs provided small-scale farmers with receipts for coffee purchases.<sup>58</sup> These small but effective changes give Starbucks visibility into its own supply chain, a feat that is difficult for many large companies with multi-layered supply chains. This visibility will enable Starbucks to make planning decisions that are optimized for business success and sustainability.

In addition to PSOs and receipts, incentives are offered to suppliers who perform at the highest level of C.A.F.E. Practices and those suppliers that demonstrate continuous improvement. This system of incentives ensures that Starbucks has a consistent, quality supply of coffee. It is also in line with general best practices for other multinational companies dealing with potential challenges in their supply chains. Originally, companies might have immediately ceased working with a supplier that was found to have labor or environmental violations, but in the last decade, companies have learned that it is often more impactful to incentivize low performers to improve instead.

Finally, the work that Starbucks does to improve the environmental impacts of coffee production helps – to the extent possible – ensure a stable and consistent supply of beans. In 2012, higher input costs, mostly from increased coffee bean prices, cost Starbucks \$214 million in operating income.<sup>59</sup> These losses serve to remind Starbucks of the financial hit that the company takes when there are disruptions in its supply chain, and the company knows that it is in its best interest to manage risk factors in its supply chain. Again, the C.A.F.E. Practices program helps it do so.

### 3.4.2 Brand Management

The second economic benefit, brand management, also allows Starbucks to charge a higher-than-average price for its beverages. Having a sustainability program in place helped Starbucks respond to anti-globalization campaigns in the late 1990s and early 2000s, and to insulate itself from other activist campaigns throughout the 2000s. As a globally recognizable brand, Starbucks was a prime target, along with other major brands such as Nike, of the anti-globalization sentiment that erupted in 1999.<sup>60</sup> Because the company had launched a sustainability program and was ramping up its work with CI, allegations of abuses such as the use of child labor in its supply chain did not stick or permanently

“We’ve had a long history with Conservation International. We are driven by our common goal – to help coffee farmers treat the land and their businesses in ways that benefit local and global communities now and long into the future.”  
Howard Schultz, Chairman, President and CEO of Starbucks  
(Conservation International Annual Report, 2010)

<sup>58</sup> “Ethical Coffee Sourcing and Farmer Support,” Starbucks.

<sup>59</sup> Starbucks 2012 Annual Report.

<sup>60</sup> Nick Carbone, “Top 10 American Protest Movements,” *TIME*, October 12, 2011, accessed April 28, 2013, [http://www.time.com/time/specials/packages/article/0,28804,2096654\\_2096653\\_2096684,00.html](http://www.time.com/time/specials/packages/article/0,28804,2096654_2096653_2096684,00.html).

tarnish its brand.<sup>61</sup> Similarly, campaigns by U.S. Labor Education in the Americas Project and Oxfam did not have a big impact on most consumers' perceptions of Starbucks, in part because Starbucks had such a well-crafted sustainability program.<sup>62</sup> This sustainability program, which includes the C.A.F.E. Practices program, is interwoven into company marketing in a way that feels genuine to most consumers. Its "Commitment to Origins" campaign is good for public relations, but works because it makes sustainability standards such as C.A.F.E Practices, shade-grown and fair trade authentic extensions of the Starbucks brand.<sup>63</sup>

Today's consumers demand that the companies they support be socially and environmentally conscious. Consumers tend to pay the most attention to the sustainability attributes of products that they eat, drink or wear, which means coffee is a product top of mind for sustainability-minded customers. There are 43 million American consumers, or 18% of the U.S. adult population, that make purchasing decisions based on the sustainability attributes of a product or brand.<sup>64</sup> These conscious consumers also tend to have more disposable income and be better educated, making them a target consumer segment for Starbucks, which sells products for consumers with extra disposable income. These consumers demand sustainability from businesses, and Starbucks has answers for them.

#### 4. Response

Starbucks and CI have renewed and expanded their partnership several times since the start of their relationship. They have expanded the scope of their work, but have not lost sight of the primary focus on C.A.F.E. Practices and raising standards throughout the coffee value chain.

The partnership continues to bring the C.A.F.E. Practices program to ever more coffee-producing regions. In 2011, Starbucks committed \$3 million to expand the C.A.F.E. Practices program and expand efforts in new markets, including Brazil, through 2013.<sup>65</sup> The expansion of the partnership into Brazil was important because Brazil is the world's largest producer of coffee, and much of Brazil's coffee is grown in large sun fields that have much room for sustainability improvements.

Starbucks and CI also now provide mechanisms for teaching and capacity building. This follows multinational company supply chain best practices whereby companies do not just dictate requirements, but help suppliers come into compliance as well. Farmer Support Centers exist in Costa Rica (also provides support to Honduras, Nicaragua, El Salvador, Panama, Guatemala, Mexico, and South America), Colombia, Rwanda, Tanzania and China. Founded between 2004 and 2013, these Centers place agronomists and other experts on-the-ground to help local farmers with cost control, quality

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<sup>61</sup> Randall Frost, "Anti-Globalists v. Big Brands: Who is Going to Win?," *Brand Channel*, December 2, 2012, accessed April 28, 2013, [http://www.brandchannel.com/features\\_effect.asp?pf\\_id=134](http://www.brandchannel.com/features_effect.asp?pf_id=134).

<sup>62</sup> April Linton, "Partnering for Sustainability: Business – NGO Alliances in the Coffee Industry," *Development in Practice* 15 (2005): 604; "Oxfam versus Starbucks," *Economist*, November 7, 2006, accessed April 28, 2013, <http://www.economist.com/node/8129387>.

<sup>63</sup> April Linton, "Partnering for Sustainability: Business – NGO Alliances in the Coffee Industry," 604.

<sup>64</sup> Gwynne Rogers, "LOHAS Consumers... Beyond Healthy Food & Beverage Choices," Natural Marketing Institute, accessed April 28, 2013, <http://www.nhiondemand.com/expertspectives/article.aspx?id=318>.

<sup>65</sup> "Starbucks and Conservation International Extend Longstanding Partnership," Conservation International, last modified September 8, 2011, accessed April 28, 2013, <http://www.conservation.org/global/celb/news/Pages/starbucks-and-conservation-international-extend-longstanding-partnership.aspx>.

control, and yield questions and addressing challenges such as fungus infections.<sup>66</sup> In March 2013, Starbucks announced it was opening a new research and development center in Costa Rica as part of its sustainable sourcing work. (Starbucks declined to disclose how much money it was investing into the center). The Global Agronomy Center will be based on a 240-hectare farm, and in addition to expanding the C.A.F.E. practices program to Costa Rica, the center will also help develop new coffee varieties.<sup>67</sup> It will complement the Farmer Support Center already established in Costa Rica.

Since 2008, the partners have helped farmers in Chiapas, Mexico and Sumatra, Indonesia conserve forests and restore native habitats so that they can sell carbon credits in addition to coffee beans internally. While the Sumatra program is still in the pilot phase, the initial results in Chiapas show: 92,547 seedlings produced for reforestation activities; 13 communities with developed farm plans; 8 technicians to help with climate adaptation and mitigation; and 5,042 tons of carbon dioxide sold.<sup>68</sup> While the future of this project depends on international carbon markets and prevailing global sentiments toward offsets, the salient point is that CI and Starbucks seek to provide ecologically-sound additional revenue streams for farmers.

Finally, the partnership now includes a loan program to provide much needed capital to smallholder farmers. CI has a program called Verde Ventures, for which Starbucks is now a primary sponsor. Verde Ventures invests in small and medium-sized businesses in regions with rich biodiversity that is threatened. Oftentimes, these businesses overlap with farmers who are already in the C.A.F.E. Practices program. Through Verde Ventures, Starbucks “has helped over 30 coffee enterprises in five countries — affecting over 14,000 farmers and their families and has directly conserved nearly 19,500 hectares (almost 46,960 acres) of land.”<sup>69</sup> Starbucks pledges to invest \$20 million in loans for farmers and their communities by 2015, and is on track to meet this goal. In 2011, it made nearly \$14.7 million in loans.<sup>70</sup>

## 5. Analysis

The C.A.F.E. Practices program meets the objectives that Starbucks and CI have made for it. The standards encourage continual progress on environmental and social indicators and make the coffee supply chain more transparent and predictable. Moreover, the program is structured in a way that makes business sense for Starbucks. Specifically, in creating the C.A.F.E. Practices program, Starbucks did three things that were very smart for its business.

First, Starbucks created its own proprietary sustainability rating system. In doing so, it came out ahead of criticisms that began in the 1990s that it was not doing enough for workers or the environment. Momentum would have pushed the company to adopt some form of sustainability purchasing standards eventually. By proactively creating its own standards, Starbucks did not have to adopt some of the more

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<sup>66</sup> “Farming Communities,” Starbucks, accessed April 28, 2013, <http://www.starbucks.com/responsibility/community/farmer-support>.

<sup>67</sup> “Starbucks Expands \$70 Million Ethical Sourcing Program With New Global Agronomy Center,” Starbucks.

<sup>68</sup> “Coffee + Carbon,” Conservation International Center for Environmental Leadership in Business, last modified December 2010, accessed April 28, 2013, [http://www.conservation.org/global/celb/Documents/2010.12.10\\_CELB\\_Sbux\\_Carbon\\_Factsheet\\_LR.pdf](http://www.conservation.org/global/celb/Documents/2010.12.10_CELB_Sbux_Carbon_Factsheet_LR.pdf).

<sup>69</sup> “Conservation Beyond the Farm, in your Cup,” Conservation International, accessed April 28, 2013, <http://www.conservation.org/campaigns/starbucks/Pages/default.aspx>.

<sup>70</sup> “Goals & Progress: Farmer Support,” Starbucks, accessed April 28, 2013, <http://www.starbucks.com/responsibility/global-report/ethical-sourcing/farmer-support>.



stringent requirements of pre-existing rating systems, and it could tailor specifications of the program to its own unique business needs. While it is not the strictest of all the rating systems, it is the broadest and most comprehensive (Table 4). The C.A.F.E. Practices program helps shield Starbucks from risk incurred from social or environmental debacles in its supply chain.

**Table 4: Other Coffee Sustainability Certifications**

<b>Coffee Certification Options Abound</b>	
<b>Smithsonian Migratory Bird Center 'Bird Friendly'</b>	<b>Rainforest Alliance</b>
<ul style="list-style-type: none"> <li>• Promotes biodiversity through the planting of specified trees for habitat and shade cover</li> <li>• Requires organic certification first and then proof of forest cover and wildlife habitat<sup>71</sup></li> <li>• No explicit labor requirements</li> <li>• Approximately 10.4 million pounds of coffee sold in 2011<sup>72</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Covers social, environmental, economic and ethical aspects of coffee production</li> <li>• Began in 1992 in Costa Rica and now covers 25 countries<sup>73</sup></li> <li>• Standard used by many major buyers, including McDonalds, Nespresso and Green Mountain Coffee<sup>74</sup></li> <li>• 827 million pounds of Rainforest Alliance certified coffee grown in 2012<sup>75</sup></li> </ul>
<b>Fair Trade International</b>	<b>USDA Organic</b>
<ul style="list-style-type: none"> <li>• Focused on social outcomes</li> <li>• Price premium of \$0.20 per pound, which is shared at the community or organizational level<sup>76</sup></li> <li>• 790 million pounds grown in 2010<sup>77</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Focused on environment, though workers benefit from fewer chemicals</li> <li>• Approximately a \$0.255 premium per pound<sup>78</sup></li> <li>• 298 million pounds organic coffee grown in 2010<sup>79</sup></li> </ul>

Second, Starbucks partnered with an NGO. CI gave the C.A.F.E Practices program its legitimacy. Industry-created standards are often viewed with skepticism because self-regulation tends to be too self-serving to carry much weight.<sup>80</sup> By joining with an NGO to create C.A.F.E. standards, the program instantly gained trust and Starbucks hedged against brand criticisms. The program would undoubtedly be less

<sup>71</sup> "Bird Friendly Coffee," Ethical Coffee, accessed April 28, 2013, <http://www.ethicalcoffee.net/bird.html>.

<sup>72</sup> Dan Charles, "Coffee For a Cause: What Do Those Feel-Good Labels Deliver?," NPR, April 24, 2013, accessed April 28, 2013, <http://www.npr.org/blogs/thesalt/2013/04/24/177757797/coffee-for-a-cause-what-do-those-feel-good-labels-deliver>.

<sup>73</sup> "Rainforest Alliance Certified Coffee," Rainforest Alliance, accessed April 28, 2013, <http://www.rainforest-alliance.org/agriculture/crops/coffee>.

<sup>74</sup> "Rainforest Alliance Certified Coffee Reached 4.5% of Global Market," Environmental Leader, April 12, 2013, accessed April 28, 2013, <http://www.environmentalleader.com/2013/04/12/rainforest-alliance-certified-coffee-reached-4-5-of-global-market/>.

<sup>75</sup> Dan Charles, "Coffee For a Cause: What Do Those Feel-Good Labels Deliver?"

<sup>76</sup> "Coffee," Fair Trade International, accessed April 28, 2013, <http://www.fairtrade.net/coffee.html>.

<sup>77</sup> Dan Charles, "Coffee For a Cause: What Do Those Feel-Good Labels Deliver?"

<sup>78</sup> Dan Charles, "Coffee For a Cause: What Do Those Feel-Good Labels Deliver?"

<sup>79</sup> Dan Charles, "Coffee For a Cause: What Do Those Feel-Good Labels Deliver?"

<sup>80</sup> April Linton, "Partnering for Sustainability: Business – NGO Alliances in the Coffee Industry," 605.

successful than it is today if it had not been created jointly with an NGO. In addition to lending credibility, CI also brought specialty knowledge that complemented Starbucks' areas of expertise. Whereas Starbucks knew the economics and financial aspects of a successful purchasing program, CI provided guidance on the environmental and social factors that would make the program impactful. Further, CI pushed Starbucks to go beyond mere standards on a paper. CI put the "boots on the ground" to monitor how farming communities were implementing the standards. CI also helped expand the program beyond its initial conception as a purchasing scheme to its current iteration, which includes loans and carbon offsets as well. Related, Starbucks also enlisted a third-party auditor to measure and assess data. This gives the public confidence that the numbers reported about C.A.F.E. Practices programs' impacts are valid, and this credibility is vitally important.

Third and finally, Starbucks wisely chose a sustainability focus that aligned with its core business objectives. Savvy consumers and analysts trust sustainability programs that pair well with a company's core competencies more than sustainability programs that are disconnected from a business' core impacts and seem like "one-off" philanthropic programs. Starbucks could not have chosen a focus for its sustainability program that is more essential to its core business than coffee beans. The strong links between C.A.F.E. Practices and Starbucks' business model make the program authentic. It ensures that consumers, employees, investors and other interested parties understand intuitively why Starbucks would focus on social and environmental issues. Relatedly, because the program is directly tied to Starbucks' business success, there is more likely to be internal buy-in, which will help the program accelerate into the future.

While these three factors were smart for business, they did not always assuage Starbucks' critics (and as a globally-recognized brand, it has many). For many critics, the fact that Starbucks created its own purchasing rating system is problematic. A host of other coffee sustainability partnerships exist (Table 4). The proliferation of various coffee partnerships and certification schemes underscore the lack of common consensus around what sustainable coffee means. Moreover, the "marketing and promotion of partnerships – embedded into anecdotes of partner activities and keywords such as 'sustainability,' 'biodiversity protection,' and 'livelihood improvement' – fits into the 'boom' of differentiated coffees in coffee bars such as Starbucks that sell an ambiance and a lifestyle."<sup>81</sup> Some critics argue that the model of company-NGO partnerships on coffee sustainability give disproportionate power to coffee companies from the Global North, who use the partnerships primarily for marketing rather than for true sustainability.

To balance this power dynamic and ensure that partnerships are genuinely beneficial to farmers, experts suggest companies like Starbucks involve producers in standard setting processes. The C.A.F.E Practices program is reported to be hierarchical with "virtually no participation by workers or their organizations in either developing or implementing key social standards," which makes it difficult for the C.A.F.E. Practices program to truly empower producers.<sup>82</sup> C.A.F.E. Practices (and similar private standards) do

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<sup>81</sup> Verena Bitzer, Mara Francken and Pieter Glasbergen, "Intersectoral Partnerships for a Sustainable Coffee Chain," *Global Environmental Change* 18 (2008): 282.

<sup>82</sup> Kate Macdonald, "Globalizing Justice Within Coffee Supply Chains? Fair Trade, Starbucks and the Transformation of Supply Chain Governance," *Third World Quarterly* 28 (2007): 805.

not address structural disempowerment, and likely will not under their current iterations. Future iterations of the C.A.F.E. Practices program should look to engage with all impacted stakeholders, especially those involved with coffee production.

The C.A.F.E. Practices program is not without its critics, and there is room for improvement, as with any program. Overall however, the company shows a genuine interest in improving the lives of coffee farmers and their community members and minimizing the environmental costs of growing coffee, if only because doing so makes sense from a business perspective. Because Starbucks and CI continue to renew and deepen their collaboration, there will likely be many years ahead in which to course correct programmatic weaknesses and amplify strengths.

## **6. Conclusions and Recommendations**

Fifteen years ago, Starbucks and CI entered into a mutually beneficial partnership. Starbucks gained knowledge about how to improve its supply chain sustainability (and thus manage risk) and gained a credible partner to strengthen its brand reputation. CI initially gained a dedicated buyer for shade-grown coffee from Mexico. As the partnership evolved, CI gained a partner for promoting sustainability coffee production on three continents, helping farms capture carbon and extending credit to small farms.

The partnership also brought tangible benefits to small, medium and large farms in Latin America. Ninety-three percent of Starbucks' coffee was ethically sourced in 2012. By using its purchasing clout to pull the coffee market toward sustainability, Starbucks, with the help of CI, is improving the lives of coffee farmers and workers and reducing the ecological impacts of coffee production. The system is not perfect, and it will likely get stricter as it matures. In just shy of a decades work, the C.A.F.E. Practices program has completely changed the way Starbucks does business. More importantly, by being the first major coffee company to use sustainability guidelines for purchasing, Starbucks acted as an industry pacesetter. It set a new precedent, and today other multinational companies that source coffee, from Nestle to McDonalds, are also moving toward more sustainable sourcing.

As referenced above, in creating the C.A.F.E Practices program, Starbucks did three things that were smart for its business. First, it created a sustainability framework that was externally verified yet made sense for its business. Second, it partnered with an NGO and third-party verifier to provide credibility and rigor to the program. Third, it chose a sustainability focus that made intuitive sense with its business model and primary impacts.

Companies just beginning their sustainability journey can learn from Starbucks' successes. By drawing three primary lessons from Starbucks' work around sustainable coffee sourcing, other companies can begin to align their profit making goals with their power to do real and lasting good for people and environment.

### **6.1. Be Proactive**

The number one thing that Starbucks did well, and that other companies would benefit from modeling, was being proactive. Starbucks did not wait for a major scandal to hit the company before it started a sustainability program. Rather it saw the anti-globalization sentiment that was bubbling up in the late 1990s, and it anticipated a growing number of its consumers asking for ethically sourced coffee. Starbucks wisely read future trouble for its company if it didn't begin to address sustainability concerns in its supply chain. As a result of being proactive, criticisms of its global actions did not stick, and its brand reputation and profits soared throughout the last decade.

### **6.2. Engage Stakeholders**

C.A.F.E. Practices would not have been successful without CI. Starbucks likely would have eventually created purchasing standards on its own, but working with CI kick-started the process and made the final result stronger. CI encouraged Starbucks to be a first-mover on sustainability in the coffee industry, and that made all the difference for Starbucks' brand and business success. While its competitors are in the early stages of aligning sustainability goals with financial motives, Starbucks is already well on its way to synergy between these two aims. CI played a pivotal role in Starbucks' sustainability evolution. Many other businesses would benefit from similar collaboration with NGOs.

### **6.3. Take Care of the Resources That Make Business Possible**

C.A.F.E. Practices is all about making the human and ecological resources that go into coffee production more resilient. Starbucks realized that its business success fundamentally depended on productive coffee farms, and with CI's help, took steps to ensure the people that grow coffee benefited from the trade, and the environment was not hurt by coffee production. Moreover, Starbucks works with the farms in its supply chain to help them come into compliance with standards. Recognizing that the C.A.F.E. Practices are a departure from "business as usual" operations, C.A.F.E. Practices helps build capacity to comply through producer support organizations and farmer support centers. Other businesses can similarly take steps to ensure more positive outcomes for the human and ecological resources that make their businesses possible

Starbucks' businesses successes over the last decade show that proactively making a supply chain more sustainable can improve brand and help align profit and purpose. Companies that draw lessons from Starbucks can do the same.

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# Oil Palm's New Frontier

Lessons from Sime Darby in Liberia

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## Abstract

Sime Darby, one of the world's largest palm oil producers and the largest Malaysian multinational, has expanded its operations from Southeast Asia to West Africa since 2009. However, this new investment landscape has brought new challenges. When the company signed a \$US 800 million concession agreement with the Liberian government to lease 220,000 hectares (ha) of land, neither the Liberian government nor Sime Darby consulted directly with the people who depend on the land for subsistence and cash crop production. The company filled wetlands used for subsistence, undervalued payments for individual land plots, and razed sacred sites. The government ignored customary land rights in its contract with Sime Darby. The affected communities lodged a complaint with the Roundtable on Sustainable Palm Oil (RSPO) in late 2011. By late 2012, Sime Darby had negotiated an agreement with the affected communities and acknowledged its failures in obtaining free, prior, and informed consent (FPIC). As a result of the controversy, the company's planting and production has been delayed, and it must pay over \$1 million to the community. As of February 2013, it had already invested \$100 million into its project in Liberia.

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## Acronyms

ACS	American Colonization Society
CHC	Community Housing Complex
CPO	Crude palm oil
CSPO	Certified Sustainable Palm Oil
CSR	Corporate Social Responsibility
EITI	Extractive Industries Transparency Initiative
EPA	Environmental Protection Agency
ESIA	Environmental and social impact assessment
EWER	Early Warning Early Response
FDA	Forestry Development Authority
FDI	Foreign direct investment
FPIC	Free, prior, and informed consent
HCV	High conservation value
HDI	Human Development Index
LURD	Liberians United for Reconciliation and Democracy
MLME	Ministry of Land, Mines, and Energy
NGO	Non-governmental organization
NPP	New Planting Procedure
PAC	Project Affected Communities
PRS	Poverty Reduction Strategy
RSPO	Roundtable on Sustainable Palm Oil
SDPL/SDPLI	Sime Darby Plantation Liberia
SDPCL	Sime Darby Plantation Cameroon Ltd
SPI	Sustainable Partnership Initiative
SPO	Sustainable palm oil
UNMIL	United Nations Mission in Liberia
UNSC	United Nations Security Council
WWF	World Wildlife Fund

## 1. Introduction

Oil palm, the plant from which palm oil is derived, originates in West Africa. Brought to Southeast Asia, where it saw great commercial success, in the early 1900s, more than 80% of oil palm is cultivated today in Malaysia and Indonesia. Investments in palm oil and growing demand have contributed to the economic growth in these countries, as prices and demand increased in the 1990s. Oil palm is extremely efficient: it yields more oil per hectare (ha) of land than any other source of vegetable oil. It is widely used as a vegetable oil in food products as well in products such as beauty supplies. China, India, and Europe are among the greatest consumers of palm oil. Of the 51 million tons of palm oil consumed in 2010, 35% was used for household cooking, and another 31% by the food industry.<sup>1</sup> For instance, 25% of the palm oil imported by China is used in instant noodles.<sup>2</sup>

Nearly one-third of the forest loss in Malaysia and Indonesia, the top palm oil-producing and -exporting nations, over the past decade is due to oil palm plantations.<sup>3</sup> A major driver of palm oil investment in West and Central Africa is the increasing restriction on Southeast Asian oil palm production. The World Bank Group placed an 18-month moratorium on investments in oil palm plantations in 2009 to review its lending policies.<sup>4</sup> Indonesian President Susilo Bambang Yudhoyono signed a two-year moratorium on new concessions in primary forests and peatlands in 2011.<sup>5</sup> As of April 2013, Indonesia was drafting a regulation to limit new oil palm plantations' area to no more than 100,000 ha.<sup>6</sup> Malaysia, the other top-producing country, is expected to "exhaust its land supply" by 2016.<sup>7</sup> In light of the developing limitations to growing oil palm in Malaysia and Indonesia, including land availability and new laws, commercially grown palm oil is returning to its region of origin. The industry is expected to continue growing as demand increases.

There has been controversy around much of the investment in palm oil, however; in 2004 the global, multi-stakeholder Roundtable on Sustainable Palm Oil (RSPO) was established in response to civil society critiques of palm oil cultivation practices. Pressure on palm oil producers has continued; much of the outcry has been about the razing of old growth, high conservation value (HCV) forests, the loss of habitat for rare and endangered species, and the lack of consideration for local peoples' land ownership and human rights.

## 2. Background

### 2.1 Liberia: A Profile

Liberia, situated on the western coast of the African continent, is one of the least developed countries in the world. It is bordered by Sierra Leone to the northwest, Guinea to the northeast, and Côte d'Ivoire to

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<sup>1</sup> "The Journey Towards Sustainable Palm Oil: How your company can get started," WWF, accessed April 10, 2013, [http://awsassets.panda.org/downloads/wwf\\_palmoil\\_brochure\\_china\\_webversion.pdf](http://awsassets.panda.org/downloads/wwf_palmoil_brochure_china_webversion.pdf), 4.

<sup>2</sup> "The Journey Towards Sustainable Palm Oil: How your company can get started," WWF, 4.

<sup>3</sup> "The Journey Towards Sustainable Palm Oil: How your company can get started," WWF, 5.

<sup>4</sup> Christopher Doering, "World Bank lifts 18-month palm oil moratorium," *Reuters*, April 2, 2011, accessed April 16, 2013, <http://in.reuters.com/article/2011/04/01/idINIndia-56064820110401>.

<sup>5</sup> John Slette and Ibnu E. Wiyono, "Indonesia Forest Moratorium 2011," USDA Foreign Agricultural Service, June 8, 2011, accessed April 24, 2013, [http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Indonesia%20Forest%20Moratorium\\_Jakarta\\_Indonesia\\_6-8-2011.pdf](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Indonesia%20Forest%20Moratorium_Jakarta_Indonesia_6-8-2011.pdf).

<sup>6</sup> Michael Taylor and Yayat Supriatna, "Indonesia looks to limit size of new oil palm plantations," *Reuters*, April 24, 2013, accessed April 26, 2013, <http://www.reuters.com/article/2013/04/24/indonesia-palm-overseas-idUSL3N0DBBV420130424>.

<sup>7</sup> "RI to remain No. 1 palm-oil producer within next decade," *The Jakarta Post*, June 21, 2012, accessed April 24, 2013, <http://www.thejakartapost.com/news/2012/06/21/ri-remain-no-1-palm-oil-producer-within-next-decade.html>.

the east. Liberia is home to 43% of West Africa's remaining Upper Guinean tropical forests, which, at 4.3 million hectares, "host valuable timber species and significant biodiversity."<sup>8</sup>

From 1989 to 2003, Liberia was the site of a civil war in which more than 250,000 people were killed and nearly 80% of the population was displaced.<sup>9</sup> Much of the country's vital infrastructure was destroyed, and foreign investors fled the country. Liberia's Human Development Index (HDI), an internationally recognized measure of a country's development that takes into account variables measuring income, education, and health, ranks 174 out of 196, at 0.388.<sup>10</sup> Adult literacy was estimated to be just 60.8% in 2010, a statistic that is likely much worse in rural areas.<sup>11</sup> An entire generation has experienced large gaps in education: the civil war destroyed or damaged 75% of the country's educational infrastructure, and child soldiers were used intensively in Liberia's civil conflicts.<sup>12</sup> Immediately after the war ended in 2003, unemployment was as high as 80%.<sup>13</sup> As of 2012, 83.8% of the population lived on less than \$US 1.25 per day.<sup>14</sup>

Administratively, the country is divided into 15 counties. The capital, Monrovia, is located in Montserrado County and is home to one-quarter of the country's population of four million. While just five percent of the Liberian population is descended from the freed slaves of the United States and the Caribbean who founded the country, those descendants have remained primarily in the coastal areas since colonization. Ninety-five percent of the population consists of tribal peoples from 16 ethnic groups, who live primarily inland, in agricultural or forested areas.

## 2.2 Liberian Land Laws: 1821 to 1956

In order to fully understand this case, it is necessary to understand the contested history of indigenous land law in Liberia. The modern history of land rights in Liberia dates back to its colonization by American and Caribbean freed slaves in the early 1800s. With the support of the US government, associations of freed slaves—the first of which was the American Colonization Society (ACS)—set up colonies on the coast of modern-day Liberia. They set about purchasing land from natives, and the first Liberian land deed was issued to ACS on December 15, 1821, for land in Cape Mesurado (Montserrado).<sup>15</sup> In 1847, the Republic of Liberia was established, the territory consisting of land primarily on the coast (or in the "Littoral"), on 40% of modern-day Liberia's land area.<sup>16</sup>

The colonizers brought with them a system of Anglo-American property law;<sup>17</sup> settler associations purchased land in the Littoral from natives and allocated plots of that land to settlers.<sup>18</sup> While these associations purchased land in the Littoral by means of deeds and private land title, in the Hinterland –

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<sup>8</sup> "Forestry," Liberia National Investment Commission, accessed April 24, 2013, <http://www.nic.gov.lr/?opportunities/forestry.html>; U.S. Agency for International Development, "USAID Country Profile - Property Rights and Resource Governance: Liberia," November 2010, accessed February 5, 2013, [http://usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID\\_Land\\_Tenure\\_Liberia\\_Profile.pdf](http://usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Liberia_Profile.pdf), 3.

<sup>9</sup> U.S. Agency for International Development, "USAID Country Profile - Property Rights and Resource Governance: Liberia."

<sup>10</sup> United Nations Development Programme, "International Human Development Indicators," accessed March 18, 2013, <http://hdrstats.undp.org/en/countries/profiles/LBR.html>.

<sup>11</sup> United Nations Development Programme, "International Human Development Indicators."

<sup>12</sup> United Nations Environment Programme, *Desk Study on the Environment in Liberia*, (Nairobi: United Nations Environment Programme, 2004), 16.

<sup>13</sup> United Nations Environment Programme, "Desk Study on the Environment in Liberia," 22.

<sup>14</sup> World Bank, "World Development Indicators 2012," (Washington, D.C.: World Bank, 2012), accessed April 2, 2013, <http://data.worldbank.org/data-catalog/world-development-indicators>.

<sup>15</sup> Liz Alden Wily, "So Who Owns the Forest: An investigation into forest ownership and customary land rights in Liberia," (Monrovia, Liberia: Sustainable Development Institute/FERN, 2007), [http://www.rightsandresources.org/documents/files/doc\\_102.pdf](http://www.rightsandresources.org/documents/files/doc_102.pdf), 68.

<sup>16</sup> Alden Wily, "So Who Owns the Forest," 17.

<sup>17</sup> U.S. Agency for International Development, "USAID Country Profile - Property Rights and Resource Governance: Liberia," 2.

<sup>18</sup> Alden Wily, "So Who Owns the Forest," 107.

or the interior of modern-day Liberia – indigenous peoples continued to govern their land via customary rights systems.<sup>19</sup> Although the tribes in the Hinterland considered themselves the owners of their collectively occupied land, by the late 19<sup>th</sup> century they had started recognizing the Liberian government’s political authority.<sup>20</sup>

Laws to assert Monrovia’s territorial authority over the Hinterland began taking shape in the early 1900s. In 1905, the ‘Act Providing for the Government of Districts within the Republic Inhabited by Aborigines’ administratively organized each tribe into its own township.<sup>21</sup> The Public Lands Law of 1904 and the Administrative Regulations for Governing the Hinterland of 1905 made it possible for indigenous Liberians in both the Littoral and the Hinterland to purchase plots of land.<sup>22</sup> These lots were mostly one-quarter acre properties in towns or farms of up to 25 acres.<sup>23</sup> For individuals, the right to purchase land was restricted to those who were or became “civilized,” as voting rights were restricted to registered landowners.<sup>24</sup> The Hinterlands Law of 1905 also formalized recognition of customary rights as ownership rights: even where the land was not formally titled, it was recognized as belonging to the indigenous peoples who inhabited it.<sup>25</sup>

In 1923, the central government called tribal chiefs from the Hinterland to Monrovia for the first national conference, held at Suehn.<sup>26</sup> The laws and regulations resulting from the conference, which established a governance structure for the interior, were approved by President Charles D.B. King on March 29, 1923, and from 1949 have been known as “The Revised Laws and Administrative Regulations of the Hinterland.”<sup>27</sup> From approximately 1930, the government provided natives in the Hinterland with “the opportunity to formalize their customary collective territorial ownership under Aborigines Land [Deeds].”<sup>28</sup> The Hinterland Law of 1949 permitted indigenous peoples to title their land collectively as “Aborigines Land” and recognized collective customary ownership rights in the Hinterland.<sup>29</sup>

In the 1950s and 1960s, the government began merging Littoral and Hinterland land laws and governance. It simultaneously began demoting indigenous land rights. The 1956 Aborigines Law, while still recognizing customary land rights, weakened those rights from ownership to “possession” and usufruct rights.<sup>30</sup> After 1956, if communities wanted formal title to land, they had to effectively “buy back” land from the federal government, but this was unaffordable for most tribes.<sup>31</sup> “Government ceased to be the trustee of community owned lands (‘tribal land’) and became the owner” – tribal lands became, in effect, public lands owned by the State and used by tribes.<sup>32</sup> Previously, public land in the Hinterland had been considered customarily tribal land, with the government acting as “trustee.”<sup>33</sup> This policy enabled the government to create natural parks and reserves, as well as to grant concessions to large tracts of “public” land.

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<sup>19</sup> Alden Wily, “So Who Owns the Forest,” 75-76.

<sup>20</sup> Alden Wily, “So Who Owns the Forest,” 76.

<sup>21</sup> Alden Wily, “So Who Owns the Forest,” 83.

<sup>22</sup> Alden Wily, “So Who Owns the Forest,” 110.

<sup>23</sup> Alden Wily, “So Who Owns the Forest,” 110.

<sup>24</sup> Alden Wily, “So Who Owns the Forest,” 110.

<sup>25</sup> U.S. Agency for International Development, “USAID Country Profile - Property Rights and Resource Governance: Liberia,” 6.

<sup>26</sup> Alden Wily, “So Who Owns the Forest,” 84.

<sup>27</sup> Alden Wily, “So Who Owns the Forest,” 84.

<sup>28</sup> Alden Wily, “So Who Owns the Forest,” 19.

<sup>29</sup> U.S. Agency for International Development, “USAID Country Profile - Property Rights and Resource Governance: Liberia,” 6.

<sup>30</sup> Alden Wily, Liz, “So Who Owns the Forest,” 19, 120; U.S. Agency for International Development, “USAID Country Profile - Property Rights and Resource Governance: Liberia,” 6.

<sup>31</sup> Alden Wily, “So Who Owns the Forest,” 125.

<sup>32</sup> Alden Wily, “So Who Owns the Forest,” 121.

<sup>33</sup> Alden Wily, “So Who Owns the Forest,” 122.

### 2.3 The Complicated History of Concessions

President William Tubman ordered a commission to review how to join the Littoral and Hinterland in 1960; in 1964 a law replaced the two jurisdictions with nine counties (today 15), to be governed in the same manner.<sup>34</sup> The first concession was made as far back as 1926, when Firestone Tire and Rubber Company established the world's largest rubber plantation in Liberia, but it was under Tubman that much of Liberia would become "captured" by concessions.

During Charles Taylor's presidency in the early 2000s, revenue from diamond mining and timber concessions funded large-scale human rights abuses and conflict in Liberia and neighboring Sierra Leone. This prompted intervention by the United Nations Security Council (UNSC); on July 7, 2003, the UNSC passed Resolution 1478, which imposed sanctions on Liberian exports of logs and timber<sup>35</sup>. In October of that year, a UN Panel of Experts was formed to monitor the sanctions.

Laws affecting land rights and natural resource concessions are under review, given the government's history under Charles Taylor of funding conflict with logging revenues. During Taylor's presidency, a National Forestry Law in 2000 decreed forest resources to be under state ownership, effectively forbidding tribes from accessing the rich forest resources on their land.<sup>36</sup> In large part because of the abuses that occurred during the civil war, after President Ellen Johnson Sirleaf was sworn into office in January 2006, the government placed a moratorium on forest concessions and called for a review of the country's land laws.

### 2.4 Land Governance Reform: 2006 to the Present

Since her ascendance to the presidency in 2006, President Sirleaf's government has been courting international investors to return to the country. Attracting foreign direct investment (FDI) is a core focus of the country's Poverty Reduction Strategy (PRS). According to its contract with Sime Darby, "[T]he Government recognizes that foreign direct investment in the agricultural sector is a key component of its post-conflict rebuilding process."<sup>37</sup>

Laws have also been revised with this goal in mind. One of the focuses of President Sirleaf's administration has been to resolve questions around land rights, in part so it can return to granting concessions, which were an important source of government revenue before the war. Liberia established a Land Commission to review Liberia's land laws and resolve the question of customary land rights in 2009.<sup>38</sup> The government toured the country with the draft National Land Policy in early 2013.<sup>39</sup> In 2009, it also enacted a Community Rights Law; however, "there are still provisions in the National Forestry Reform Law, the Aborigines Law, and other laws that can undermine customary ownership."<sup>40</sup>

According to the World Bank, "taxes, royalties, rentals, administrative fees, and other contributions from mining, oil, forestry, and agriculture companies" totaled \$35.3 billion in 2009-2010, accounting for nearly ten percent of Liberia's 2010-2011 fiscal year budget of \$369 million.<sup>41</sup> Almost one-half of the

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<sup>34</sup> Alden Wily, "So Who Owns the Forest," 88.

<sup>35</sup> Alden Wily, "So Who Owns the Forest," 92.

<sup>36</sup> U.S. Agency for International Development, "USAID Country Profile - Property Rights and Resource Governance: Liberia," 1.

<sup>37</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, April 30, 2009, 2.

<sup>38</sup> U.S. Agency for International Development, "USAID Country Profile - Property Rights and Resource Governance: Liberia," 1.

<sup>39</sup> "Land Commission Ends Regional Consultations," Land Commission, April 8, 2013, accessed April 15, 2013,

[http://www.lc.gov.lr/2press.php?news\\_id=71&related=7&pg=sp](http://www.lc.gov.lr/2press.php?news_id=71&related=7&pg=sp).

<sup>40</sup> U.S. Agency for International Development, "USAID Country Profile - Property Rights and Resource Governance: Liberia," 2.

<sup>41</sup> Zachary A. Kaplan, Peter Kyle, Chris Shugart, and Alan Moody, *Developing Public-Private Partnerships in Liberia*, (Washington, DC: World Bank, 2012), 14.

government's earnings from concessions were from the agricultural sector.<sup>42</sup> In 2009, Liberia was home to 90,000 ha of oil palm plantations and 65,000 ha of rubber estates.<sup>43</sup> During 2009 and 2010, it granted concessions for palm oil production to multiple foreign palm oil companies, including Sime Darby, Golden Veroleum, and Equatorial Palm Oil.<sup>44</sup> Notably, Liberia Land Commission Chairman Dr. Othello Brandy has reported that some 57% of Liberia's total land area, 9.8 million ha, has been claimed by concessions.<sup>45</sup>

The government has limited capacity to monitor concessions and investment, and it has structural incentives to encourage concessions. In a way, it is outsourcing some traditional public services to its investors: the Sime Darby contract requires the company to build schools, build housing, provide drinking water supplies, and provide medical care for plantation employees. In 2010, a UNSC Panel of Experts report remarked that, while "agriculture suffers from the same governance weaknesses as other resource sectors, [it] has not undergone similar reforms."<sup>46</sup>

### 3. Investor Profile

#### 3.1 Sime Darby Berhad

Sime Darby Berhad is a Malaysian multinational conglomerate that operates six core businesses in the plantation, property, industrial, health, motors, and energy and utilities sectors in more than 20 countries. Founded in Malaysia by the Scottish William Sime and English Henry Darby as a rubber production company in 1910, in its current form, Sime Darby Berhad is the result of a 2007 merger between Kumpulan Sime Darby Berhad, Kumpulan Guthrie Berhad, and Golden Hope Plantations Berhad, all of which had plantation operations in Malaysia and Indonesia.<sup>47</sup> As of 2012, its total planted territory in Malaysia, Indonesia, and Liberia was 522,489 ha, and its land bank totaled 878,797 ha.<sup>48</sup> Approximately 80% of Sime Darby's plantation production is in oil palm; the other 20% is in rubber. The Malaysian government, which has funded initiatives to promote palm oil consumption since the 1970s via the Malaysian Palm Oil Board (MPOB) and Malaysian Palm Oil Council (MPOC),<sup>49</sup> holds a more than 30% stake<sup>50</sup> in Sime Darby via state-run asset manager Permodalan Nasional Berhad.<sup>51</sup>

As a result of the merger, Sime Darby Plantations is responsible for six percent of global crude palm oil (CPO) production, at 2.4 million tons per annum.<sup>52</sup> Today Sime Darby is the largest listed company on

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<sup>42</sup> Kaplan et al., *Developing Public-Private Partnerships in Liberia*, 14.

<sup>43</sup> "Sime back in Liberia after eight-year break," *New Straits Times (Malaysia)*, May 6, 2009, accessed January 30, 2013, LexisNexis Academic.

<sup>44</sup> Xan Rice, "Palm oil: Companies have trouble securing land," *Financial Times*, September 14, 2012, accessed February 1, 2013, <http://www.ft.com/cms/s/0/6d679244-f8f0-11e1-b4ba-00144feabdc0.html#axzz2SifiSwoe>.

<sup>45</sup> Anne Chaon, "Forest, mines, farmland: Liberia is for sale," *AFP*, January 20, 2013, accessed April 26, 2013, <http://www.google.com/hostednews/afp/article/ALeqM5jddn-klOdDybjllmUbv9NtCWdA?docId=CNG.90f9fb07ce2ae99e32344602df698eed.5f1>.

<sup>46</sup> United Nations Security Council Committee established pursuant to resolution 1521 (2003) concerning Liberia, *Final report of the Panel of Experts on Liberia submitted pursuant to paragraph 6 (f) of Security Council resolution 1961 (2010)*, (New York: United Nations, 2011), accessed April 29, 2013, [http://www.un.org/ga/search/view\\_doc.asp?symbol=S/2011/757\\_65](http://www.un.org/ga/search/view_doc.asp?symbol=S/2011/757_65).

<sup>47</sup> Angus Whitley and Soraya Permatasari, "Sime Darby, Guthrie, Golden Get Proposal, May Merge (Update 4)," *Bloomberg*, November 23, 2006, accessed March 4, 2013, <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aPRT.kqsn1ks>; "History," Sime Darby, last modified 2011, accessed January 25, 2013, <http://www.simedarby.com/History.aspx>.

<sup>48</sup> Sime Darby Berhad, *Sime Darby Annual Report 2012*, accessed March 6, 2013, [http://www.simedarby.com/downloads/pdfs/SDB/Annual\\_Report/Sime\\_Darby\\_AR2012.pdf](http://www.simedarby.com/downloads/pdfs/SDB/Annual_Report/Sime_Darby_AR2012.pdf), 90.

<sup>49</sup> Oliver Pye, "Palm Oil as a Transnational Crisis in South-East Asia," *Austrian Journal of Southeast Asian Studies* 2(2) (2009), accessed February 5, 2013, [http://www.seas.at/aseas/2\\_2/ASEAS\\_2\\_2\\_A5.pdf](http://www.seas.at/aseas/2_2/ASEAS_2_2_A5.pdf), 88.

<sup>50</sup> Sharen Kaur, "PNB finds buyer for Sime Darby's non-core assets," *New Straits Times*, April 30, 2013, accessed May 1, 2013, ProQuest AAT (1346671685) <http://proxyau.wrlc.org/login?url=http://search.proquest.com.proxyau.wrlc.org/docview/1346671685?accountid=8285>.

<sup>51</sup> Whitley and Permatasari, "Sime Darby, Guthrie, Golden Get Proposal, May Merge (Update 4)."

<sup>52</sup> "Plantation," Sime Darby, last modified 2011, accessed January 25, 2013, <http://www.simedarby.com/Plantation.aspx>.



the Malaysian Bursa with a market capitalization of \$17.92 billion as of February 2013.<sup>53</sup> Worldwide, the company has more than 100,000 employees.<sup>54</sup> Plantations make up the greatest area of profit for the company; in 2008, plantations accounted for 71.4% of Sime Darby's total profits, the result not only of company practices but also of high world prices for crude palm oil.<sup>55</sup>

As it was relisted on the Malaysian Bursa after the merger in late November 2007, Sime Darby unveiled its new vision: "Developing Sustainable Futures."<sup>56</sup> In March of 2008, it pledged to spend more than \$62 million over five years to achieve corporate social responsibility (CSR) goals in its plantation operations.<sup>57</sup> Also in 2008, the year in which the RSPO began issuing certification for palm oil, Sime Darby produced its first batch of fully traced sustainable palm oil (SPO).<sup>58</sup>

As the owner of Unimills BV, "the second largest diversified oil and fats blend manufacturer in Europe," Sime Darby has direct access to the European market.<sup>59</sup> Unilever, one of the world's largest multinational consumer goods companies and a major customer of the Rotterdam refinery, consumes three percent of global palm oil production.<sup>60</sup> As part of its commitment to "purchase all palm oil from certified sustainable sources by 2015,"<sup>61</sup> Unilever began purchasing segregated certified sustainable palm oil (CSPO) from Sime Darby in 2010.<sup>62</sup> Today, Sime Darby is the largest global producer of CSPO; 88% of its output is RSPO-certified.<sup>63</sup> While Sime Darby Plantation conducts downstream operations in 14 countries, its concession agreement in Liberia is its first foray into planting palm oil outside of Malaysia and Indonesia.

### 3.2 Roundtable on Sustainable Palm Oil

Conceived by the World Wildlife Fund (WWF) in 2001, the RSPO is a global, multi-stakeholder initiative to transform the market for palm oil. It was organized by the WWF in collaboration with companies and associations such as Aarhus United UK Ltd, Migros, the Malaysian Palm Oil Association, and Unilever.<sup>64</sup> Golden Hope Plantations, now integrated into Sime Darby, was one of the founders of the RSPO, which was formally established in 2004 and hosts a Secretariat in Kuala Lumpur, Malaysia, with an office in Jakarta, Indonesia and a seat in Zurich, Switzerland.<sup>65</sup> The RSPO is a membership-based organization consisting of oil palm growers; traders; environmental and social non-governmental organizations (NGOs); palm oil investors; oil processors; consumer goods manufacturers; and retailers.<sup>66</sup> Certified

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<sup>53</sup> Sime Darby Berhad, *Sime Darby Berhad Annual Report 2008*, accessed March 6, 2013, [http://www.simedarby.com/downloads/pdfs/SDB/Annual\\_Report/Sime\\_Darby\\_AR2008.pdf](http://www.simedarby.com/downloads/pdfs/SDB/Annual_Report/Sime_Darby_AR2008.pdf), 4.; "Corporate Information," Sime Darby, last modified 2011, accessed January 25, 2013, [http://www.simedarby.com/corporate\\_information.aspx](http://www.simedarby.com/corporate_information.aspx).

<sup>54</sup> Sime Darby Berhad, *Sime Darby Berhad Annual Report 2012*, 5.

<sup>55</sup> Sime Darby Berhad, *Sime Darby Berhad Annual Report 2008*, 48.

<sup>56</sup> Sime Darby Berhad, *Sime Darby Berhad Annual Report 2008*, 93.

<sup>57</sup> Sime Darby Berhad, *Sime Darby Berhad Annual Report 2008*, 94.

<sup>58</sup> Sime Darby Berhad, *Sime Darby Berhad Annual Report 2008*, 51.

<sup>59</sup> "How Unilever Palm Oil Suppliers are Burning Up Borneo," Greenpeace International, April 2008, accessed April 29, 2013, <http://www.greenpeace.org/international/Global/international/planet-2/report/2009/10/how-unilever-palm-oil-supplier.pdf>, 16.

<sup>60</sup> "How Unilever Palm Oil Suppliers are Burning Up Borneo," Greenpeace International, 16.

<sup>61</sup> "Our Targets," Unilever, last modified 2013, accessed April 26, 2013, <http://www.unilever.com/sustainable-living/sustainablesourcing/palmoil/ourtargets>.

<sup>62</sup> "How Unilever Palm Oil Suppliers are Burning Up Borneo," Greenpeace International; "Sime Darby ships first segregated palm oil to Europe," *The Star Online*, June 5, 2010, accessed April 29, 2013, <http://biz.thestar.com.my/news/story.asp?file=/2010/6/5/business/6406703&sec=business>.

<sup>63</sup> "Plantation," Sime Darby.

<sup>64</sup> "History," Roundtable on Sustainable Palm Oil, last modified 2012, accessed January 26, 2013, <http://www.rspo.org/en/history>.

<sup>65</sup> History," Roundtable on Sustainable Palm Oil.

<sup>66</sup> "Who is RSPO," Roundtable on Sustainable Palm Oil, last modified December 2012, accessed January 26, 2013, [http://www.rspo.org/en/who\\_is\\_rspo](http://www.rspo.org/en/who_is_rspo).

sustainable palm oil now makes up 14% of the global palm oil market.<sup>67</sup> Its standards, meant to reflect best environmental and social practices in the industry, are voluntary.

Members commit to meeting eight principles for their oil palm to be certified:

1. Commitment to transparency;
2. Compliance with applicable laws and regulations;
3. Commitment to long-term economic and financial viability;
4. Use of appropriate best practices by growers and millers;
5. Environmental responsibility and conservation of natural resources and biodiversity;
6. Responsible consideration of employees and of individuals and communities affected by growers and mills;
7. Responsible development of new plantings; [and]
8. Commitment to continuous improvement in key areas of activity<sup>68</sup>

New RSPO policies in 2010 mandate that each company follow the New Planting Procedure (NPP), which contains improved guidelines for obtaining free, prior, and informed consent (FPIC) from local stakeholders in newly established project areas. Sime Darby has filed NPP documents for its new plantings in Liberia, which are accessible on the RSPO website.

## 4. The Project

### 4.1 Local Livelihoods and Environmental Risk

In its official documents, Sime Darby recognizes that inhabitants of the plantation area rely on rubber and subsistence farming for their livelihoods. The project environmental and social impact assessment (ESIA) for 10,000 ha in Bomi and Grand Cape Mount Counties classified more than 90% of concession area residents as agriculturalists engaging in subsistence agriculture, hunting, and petty trade.<sup>69</sup> Area residents practice shifting agriculture to grow rice, cassava, okra, and other crops for subsistence uses, and many families grow cash crops such as cocoa, kola nuts, native oil palm, oranges, avocado, mango, and rubber to meet future cash needs and to pay for school fees and health care.<sup>70</sup> They also use the swamps and wetlands as a source of fish, “crabs, snails, crayfish, clams, and molluscs.”<sup>71</sup> Land in the affected area is mostly undeeded customary land, although some inhabitants hold deeded land.<sup>72</sup>

Customary governance authorities “[range] from the local village chief, to the Town Head, Clan Head, and then Paramount Chief.”<sup>73</sup> The paramount chiefs usually preside over a district of two or more clans.<sup>74</sup> Their traditional council consists of traditional elders as well as holy women called *zoes*.<sup>75</sup> Of the

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<sup>67</sup> “RSPO members need to match performance to promises to speed palm oil sustainability,” WWF, November 1, 2012, accessed April 20, 2013, <http://wwf.panda.org/?206603/rspo-members-need-to-match-performance-to-promises-to-speed-palm-oil-sustainability>.

<sup>68</sup> “Who is RSPO,” Roundtable on Sustainable Palm Oil, last modified December 2012, accessed January 26, 2013, [http://www.rspo.org/en/who\\_is\\_rspo](http://www.rspo.org/en/who_is_rspo); “RSPO Certification,” Sime Darby Plantation, last modified 2011, accessed January 26, 2013, [http://www.simedarbyplantation.com/RSPO\\_Certification.aspx#sthash.5CSSs48q.dpuf](http://www.simedarbyplantation.com/RSPO_Certification.aspx#sthash.5CSSs48q.dpuf).

<sup>69</sup> Tom Lomax, Justin Kenrick, and Alfred Brownell, “Conflict or Consent? The Palm Oil Sector at a Crossroads,” Forest Peoples Programme/Green Advocates Liberia, November 2012, <http://www.forestpeoples.org/sites/fpp/files/publication/2012/11/liberia-sime-darby-document-low-res.pdf>, 15.

<sup>70</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 3-4.

<sup>71</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacub and Julia Malail, Roundtable for Sustainable Palm Oil, October 4, 2011, accessed January 26, 2013, <http://www.forestpeoples.org/sites/fpp/files/publication/2011/10/sime-darby-complaint-liberia-affected-communities-oct-2011.pdf>.

<sup>72</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 4.

<sup>73</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 4.

<sup>74</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 4.

six jurisdictional areas governed by paramount chiefs in Grand Cape Mount County, two are in Sime Darby's area of operations: Garwula and Gola Konneh.<sup>76</sup>

Formal governance takes place at the district, county, and federal levels. Two elected senators represent each of the 15 counties in Liberia. Land deeds are overseen by a district land commissioner, country land commissioner, and county superintendent.<sup>77</sup> At the federal level, the Ministry of Lands, Mines, and Energy (MLME), Ministry of Agriculture, Ministry of Internal Affairs, Land Commission, Forestry Development Authority (FDA), and President's Office are concerned with issues of land ownership.<sup>78</sup>

The principle ethnic group of peoples affected by Sime Darby's operations in Grand Cape Mount County is the Vai tribe.<sup>79</sup> Large settlements in Liberia are classified as "towns," and many towns make up a "clan;" the 18 towns in the affected Garwula District make up the Vai "Manobah" clan.<sup>80</sup> Members of other ethnic groups have also been affected, as have internally displaced persons from the civil war, including ex-combatants from the Liberians United for Reconciliation and Democracy (LURD) rebel movement.<sup>81</sup> Many concession area residents subsist on revenue from rubber tapping at the Guthrie Plantation.

Conditions on the plantation have historically been poor; nearby inhabitants have little access to education or healthcare, in part due to the poor conditions of infrastructure and roads. From late 2000 to 2006, ex-combatants were informally in control of the Guthrie Plantation, threatening residents' safety and practicing rubber tapping with little knowledge of best practices. Due to significant violence and human rights abuses, the United Nations Mission in Liberia (UNMIL) deployed peacekeepers to secure the plantation in August 2006.<sup>82</sup> Subsequently, many of the ex-combatants left voluntarily because of decreasing rubber prices, although more than 500 remained.<sup>83</sup> The Minister of Agriculture appointed an Interim Management Team, which oversaw plantation operations managed by the Rubber Planters Association of Liberia from 2006 until it was turned over to Sime Darby in 2010.<sup>84</sup> Reports of mismanagement during this period abound.

Sime Darby's ESIA for its first 10,000 ha plot identified the area as primarily "agriculture degraded lowland forest," with "fringes of semi-primary forest located along the banks of the Lofa and Mahe rivers."<sup>85</sup> It also identified the presence of some species that are protected under Liberian law, such as the water chevrotain, the black ducker, and the royal antelope, as well as "a high diversity of bird species," including "the migratory Cattle egret African Fish Eagle, Palm-Nut Vulture, Yellow-Throated Tinker bird, Yellow-Spotted Barbet, [and] Vieillot's Barbet."<sup>86</sup>

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<sup>75</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 4-5.

<sup>76</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 4.

<sup>77</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 5.

<sup>78</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 5.

<sup>79</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 3.

<sup>80</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 3.

<sup>81</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 3; "Liberia: Ex-fighters making money from latex refuse to leave rubber plantation," IRIN, April 19, 2005, accessed April 29, 2013, <http://www.irinnews.org/printreport.aspx?reportid=53970>.

<sup>82</sup> UNSC, *Final report of the Panel of Experts on Liberia*, 67.

<sup>83</sup> UNSC, *Final report of the Panel of Experts on Liberia*, 67.

<sup>84</sup> UNSC, *Final report of the Panel of Experts on Liberia*, 67.

<sup>85</sup> GreenCons Inc. Consultants Liberia, *Social and Environment Impact Assessment (SEIA) Report & High Conservation Value Report: Sime Darby Plantation (Liberia)*, accessed February 2, 2013, [http://www.rspo.org/\\_v2/file/SEIA%20Liberia\\_Executive%20summary\\_final.pdf](http://www.rspo.org/_v2/file/SEIA%20Liberia_Executive%20summary_final.pdf), 3.

<sup>86</sup> GreenCons Inc. Consultants Liberia, *Social and Environment Impact Assessment (SEIA) Report & High Conservation Value Report: Sime Darby Plantation (Liberia)*, 6.

## 4.2 Establishment in Liberia

In 2009, Sime Darby incorporated Sime Darby Plantation (Liberia) Inc. (SDPL/SDPLI), a wholly owned subsidiary, to manage its projects in Liberia. Following 18 months of negotiation, Sime Darby and the Government of Liberia signed a concession agreement on April 30, 2009<sup>87</sup> permitting SDPL to lease 220,000 ha of land for 63 years in Bomi, Grand Cape Mount, Gbarpolu, and Bong Counties.<sup>88</sup> More than half of the land in the concession agreement had previously been leased by Kumpulan Guthrie Bhd., one of the companies with which Sime Darby merged in 2007, for development as a rubber plantation.<sup>89</sup> The original contract was signed by BF Goodrich on July 9, 1954 and was transferred to Kumpulan Guthrie Berhad in an amended concession agreement on November 22, 1985.<sup>90</sup> Kumpulan Guthrie Berhad only developed approximately 20,000 ha and abandoned the area in October 2001 during the civil war.<sup>91</sup> Until 2010, the government served as interim caretaker of the plantation, which had been occupied by ex-combatants in addition to long-time residents.

The first part of the concession area to be cleared by Sime Darby was the Matambo Estate in the Garwula District of Grand Cape Mount County. Construction began on the Matambo Estate Community Housing Complex (CHC) in February 2010 and was to be completed in 2013.<sup>92</sup> According to the company's 2012 annual report, Sime Darby has invested approximately \$1.35 million USD into the local economy by hiring construction companies and suppliers.<sup>93</sup> In Bomi County, it has cleared 956 ha of old rubber trees and planted 140 ha with oil palm plants.<sup>94</sup> Sime Darby reports clearing 4,956 ha, planting 3,350 ha with oil palm, and continuing rubber tapping on 6,696 ha in 2012.<sup>95</sup> The project expects to invest \$3.1 billion in Liberia by 2025.<sup>96</sup>

## 4.3 Contract and Development Plan

The effective date of the contract was January 1, 2010. Out of a gross concession area of 311,187 ha, the company may choose a concession area totaling 220,000 ha after conducting a survey, submitting an ESIA, and acquiring a permit from the Environmental Protection Agency (EPA).<sup>97</sup> The 220,000 ha that Sime Darby may develop consists of 120,000 ha leased under the previous concession agreement plus an additional 100,000 ha,<sup>98</sup> which was added to the concession agreement in light of Sime Darby's plan to build a palm oil refinery in Liberia.<sup>99</sup> Approximately 8,100 ha of the concession area already contain rubber trees planted 30 to 40 years ago.<sup>100</sup>

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<sup>87</sup> "Sime back in Liberia after eight-year break,"

<sup>88</sup> "Sime Darby take-over," Ministry of Agriculture, January 4, 2010, accessed February 18, 2013, [http://www.moa.gov.lr/press.php?news\\_id=119](http://www.moa.gov.lr/press.php?news_id=119).

<sup>89</sup> "Sime back in Liberia after eight-year break."

<sup>90</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 1.

<sup>91</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 1; Lomax, Kenrick, and Brownell, "Conflict or Consent?"

<sup>92</sup> Sime Darby Berhad, *Sime Darby Annual Report 2012*, 99.

<sup>93</sup> Sime Darby Berhad, *Sime Darby Annual Report 2012*, 99.

<sup>94</sup> Sime Darby Berhad, *Sime Darby Annual Report 2012*, 99.

<sup>95</sup> Sime Darby Berhad, *Sime Darby Annual Report 2012*, 99.

<sup>96</sup> "Liberia: Land grab or development opportunity?" *IRINnews*, February 22, 2012, accessed April 26, 2013, [http://article.wn.com/view/2012/02/22/LIBERIA\\_Land\\_grab\\_or\\_development\\_opportunity/#/fullarticle](http://article.wn.com/view/2012/02/22/LIBERIA_Land_grab_or_development_opportunity/#/fullarticle).

<sup>97</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 11.

<sup>98</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 2; "Sime back in Liberia after eight-year break."

<sup>99</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 2; "Sime Darby take-over."

<sup>100</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 5.

According to the terms of the contract, rubber trees are mature at seven to 30 years and oil palm at three to 25 years.<sup>101</sup> After the contract has gone into effect, the company is required to plant 75% of the concession area with “commercially viable” oil palms or rubber trees within 15 years, and 100% within 20 years.<sup>102</sup> When a tree has reached its “end of cycle” and is no longer “commercially viable,” Sime Darby is required to replant within one year.<sup>103</sup> Should it fail to do so, the Liberian government has the right to repossess the land.<sup>104</sup>

The language of the contract clearly shows that the government claimed not only to own the land, but also to have the power to ensure it was “free from Encumbrances” by the effective date.<sup>105</sup> Both the government and Sime Darby were aware that people were living on the land in the concession area, whether as part of the plantation development or the nearby towns. One clause states that the “Investor may by Notice to Government request that certain settlements be relocated if Investor can demonstrate to Government’s satisfaction that [they] would impede Investor.”<sup>106</sup> In such a case, in the terms of the contract, the government and Sime Darby would handle the situation jointly and establish a resettlement committee.<sup>107</sup> If Sime Darby cannot develop the land within a certain period of time because it is not “free from Encumbrances,” the government will not, by the terms of the contract, hold it responsible.<sup>108</sup>

The agreement also includes benefits for local residents and employees. In its official documents, Sime Darby recognizes that inhabitants of the plantation area rely on rubber and subsistence farming for their livelihoods. In consideration of the three to five years required for oil palm plants to mature, Sime Darby plans to leave the rubber trees at the former Guthrie plantation standing so that residents can continue tap rubber.<sup>109</sup> The company will maintain 20,000 ha of its 220,000 ha concession area as a rubber plantation.<sup>110</sup>

Once production has begun, the company is to pay a percentage of its sales, or five dollars per hectare, into an Oil Palm Development Fund, and there is also a Rubber Fund and Community Development Fund. Also included in the agreement is the development of a rubber and palm “outgrower scheme” on 44,000 ha for residents of the concession area.<sup>111</sup> The Liberian government expects Sime Darby to employ up to 22,000 people within the first ten years, and eventually the company expects to employ up to 35,000 Liberians.<sup>112</sup> The concession outlines a plan for the construction of one hospital, more than a dozen residence estates for plantation workers, and 15 schools for children of employees.<sup>113</sup>

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<sup>101</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 3.

<sup>102</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 21.

<sup>103</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 21.

<sup>104</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 21.

<sup>105</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 11, 16.

<sup>106</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 11.

<sup>107</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 12.

<sup>108</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 22.

<sup>109</sup> GreenCons Inc. Consultants Liberia, *Social and Environment Impact Assessment (SEIA) Report & High Conservation Value Report: Sime Darby Plantation (Liberia)*.

<sup>110</sup> GreenCons Inc. Consultants Liberia, *Social and Environment Impact Assessment (SEIA) Report & High Conservation Value Report: Sime Darby Plantation (Liberia)*.

<sup>111</sup> “Sime Darby take-over.”

<sup>112</sup> “Sime Darby take-over.”

<sup>113</sup> “Sime Darby take-over.”

## 5. Social & Environmental Impacts

Eight months after signing the concession agreement, the Liberian government turned over the former Guthrie Rubber Plantation to Sime Darby in January 2010.<sup>114</sup> On April 21, 2010, Sime Darby was granted its first permit, to plant 10,000 ha of oil palm in Bomi and Grand Cape Mount Counties.<sup>115</sup> Land clearing began and a nursery was established in Garwula District. In May 2011, Liberian Vice President Joseph Boakai planted the first oil palm seedling.<sup>116</sup> In a letter dated August 18, 2011, Green Advocates, a legal organization representing peoples affected by Sime Darby's concessions, expressed concerns to the Liberian Environmental Protection Agency about the company's practices in Grand Cape Mount County.<sup>117</sup> This letter also asked the EPA to deny Sime Darby a permit for 15,000 ha in Grand Cape Mount's Golakonneh and Garwula Districts.<sup>118</sup> Separately, the EPA sent a notice of non-compliance with the permit to Sime Darby on August 11, fining it \$10,000.<sup>119</sup>

The permit included the following conditions:

- Leave a belt of forest minimum 10 meters along water ways in operational area;
- Avoid creating sediment traps in streams and [r]ivers;
- Avoid earth fill dams across [s]treams as crossing;
- Provide an alternative source of drinking water to communities whose water source are polluted or may be polluted by [activities]; [and]
- Provide monthly record of water bodies with the following parameter, considering Liberian National Water Quality Standard.<sup>120</sup>

On October 5, after not receiving a response from Sime Darby, the EPA fined Sime Darby \$50,000 for non-compliance and violation of terms of the permit.<sup>121</sup> However, Sime Darby negotiated with the EPA to pay its original \$10,000 fine.<sup>122</sup>

By September 2011, the government was aware of the communities' complaints that Sime Darby had cleared community land; desecrated grave sites and sacred, ancestral forests; taken their land without obtaining FPIC; filled wetlands and destroyed drinking water sites; displaced people without adequate and appropriate compensation; and dammed creeks and streams.<sup>123</sup> On September 8, 2011, an inter-ministerial task force with representatives from the Land Commission, the Ministry of Agriculture, the Ministry of Internal Affairs, and the Forestry Development Authority met in Monrovia with "a cross-section of chiefs, elders, women and youth representatives of the affected communities" at a meeting facilitated by Green Advocates. According to the Land Commission's report, "In consideration of the

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<sup>114</sup> "At Guthrie: Sime Darby Brings Relief to Workers," *The New Dawn*, January 25, 2010, accessed January 26, 2013, [http://www.thenewdawnliberia.com/index.php?option=com\\_content&view=article&id=94:at-guthrie-sime-darby-brings-relief-to-workers&catid=36:investment&Itemid=62](http://www.thenewdawnliberia.com/index.php?option=com_content&view=article&id=94:at-guthrie-sime-darby-brings-relief-to-workers&catid=36:investment&Itemid=62).

<sup>115</sup> Mae Azango, "Between the Hooks - Can Sime Darby Escape EPA's Wrath," *FrontPage Africa*, October 31, 2011, accessed April 24, 2013, [http://www.frontpageafricaonline.com/index.php?option=com\\_content&view=article&id=1700:between-the-hooks-can-sime-darby-escape-epas-wrath&catid=67:news&Itemid=144](http://www.frontpageafricaonline.com/index.php?option=com_content&view=article&id=1700:between-the-hooks-can-sime-darby-escape-epas-wrath&catid=67:news&Itemid=144).

<sup>116</sup> "Veep Boakai Plants Sime Darby First Palm Tree Tomorrow," *The Inquirer*, May 15, 2011, accessed May 1, 2013, <http://bepi.mpob.gov.my/news/detail.php?id=7486>.

<sup>117</sup> Azango, "Between the Hooks."

<sup>118</sup> "Sime Darby's Deal Backfires," *The Informer*, September 9, 2011, accessed May 1, 2013, [http://www.theinformer-ir.com/oneadmin/newspublish/samplenewspublish.php?news\\_id=6679&start=20&category\\_id=0&parent\\_id=0&arcyear=&arcmonth=](http://www.theinformer-ir.com/oneadmin/newspublish/samplenewspublish.php?news_id=6679&start=20&category_id=0&parent_id=0&arcyear=&arcmonth=)

<sup>119</sup> Azango, "Between the Hooks."

<sup>120</sup> Azango, "Between the Hooks."

<sup>121</sup> Azango, "Between the Hooks."

<sup>122</sup> Azango, "Between the Hooks."

<sup>123</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

seriousness the Land Commission attaches to this Sime Darby issue, relevant stakeholders met September 15 to further discuss the complaint filed by community residents of the three Counties (Bomi, Cape Mount, and Gbarpolu). The Land Commission is playing a mediatory role to help resolve the impasse.”<sup>124</sup>

However, the government’s intervention was not sufficient: on October 4, residents of the more than 16 affected towns and villages in Bomi and Grand Cape Mount Counties addressed a letter to the RSPO Secretariat’s Technical Director, Salahudin Yaacob, and Manager of the Taskforce on Smallholders and Dispute Settlement Facility, Julia Majail, asserting that

Sime Darby is currently engaged in active land clearing, destruction of our sacred sites, destruction of our crops, damming of our creeks and streams, filling in of our swamps, destruction of grave sites, destruction and pollution of our drinking water sources, forceful displacement of our people without adequate compensation, active planting and cultivation of oil palm including the massive establishment of an oil palm nursery without our free prior informed consent.<sup>125</sup>

The letter identified more than 15 towns and villages that had already been impacted by Sime Darby’s 10,000 ha plot in Grand Cape Mount and Bomi Counties and more than 19 that would be impacted by development on a 15,000 ha plot in Garwula and Gola Konneh Districts in Grand Cape Mount County.<sup>126</sup> They detailed the destruction of their livelihoods without alternatives:

[T]here are several sites where wetlands including rivers, marshlands, swamps, streams and creeks have been dammed or diverted and polluted... [they] were a source of food, proteins through fishes, crabs, snails, crayfish, clams, and molluscs, palm wines, wild fruits, berries, palm oil.<sup>127</sup>

The letter invited RSPO officials to conduct a transect walk and field visit to see the destruction, and claimed that the company was in violation of the RSPO Principles and Criteria (2.2, 2.3, 7.5, and 7.6) and its New Plantings Procedure.<sup>128</sup> They asked the RSPO to inform Sime Darby about the community’s complaint; command Sime Darby to halt land acquisition and land clearing until the resolution of the complaint; and establish a transparent and participatory process by which to resolve the conflict, in compliance with RSPO Principles and Criteria (2.2, 2.3, 6.4, 7.5, and 7.6).<sup>129</sup> Sakamon Samukai, clan chief of the Gorbla Clan in Bomi County, and Sekou Balloe, head of the traditional council in Grand Cape Mount County, reportedly attached a request to the EPA asking it to deny Sime Darby’s permit.<sup>130</sup> Marcus Colchester of Forest Peoples Programme and Alfred Brownell of Green Advocates, a Liberian environmental law firm, aided in the drafting of the letter.

A letter from Salahudin Yaacob dated October 14, 2011 shows a swift response from Sime Darby after the complaints were called to their attention by the RSPO: “It would seem now that the Company is open for bilateral discussions amongst affected parties.”<sup>131</sup> The affected communities and Sime Darby

<sup>124</sup> *Liberia Land Commission Annual Report 2011-2012*, (Monrovia, Liberia: Land Commission, 2012), accessed March 29, 2013, <http://www.lc.gov.lr/doc/Annual%20Report%202011%20MAC%20MGdP%20Feb%2015%20mm%20Final%20Final%20March%2021.pdf>, 23.

<sup>125</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

<sup>126</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

<sup>127</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

<sup>128</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

<sup>129</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

<sup>130</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

<sup>131</sup> Sakamon Samukai and Sekou Bellou to Salahudin Yaacob and Julia Malail, Roundtable for Sustainable Palm Oil.

management—including senior management from Malaysia—arranged a meeting, facilitated by the communities’ lawyers at Green Advocates, on December 17, 2011.<sup>132</sup> Tensions remained high: just a few days before the meeting, at least 500 contract workers rioted, seizing bulldozing equipment that was being used to “clear cash crops and farmland” near the Seini Town in Garwula District.<sup>133</sup>

Following the December 17 meeting, Sime Darby and affected communities agreed to continue negotiations.<sup>134</sup> However, government intervention prevented another meeting from occurring, and on January 2, 2012, President Sirleaf visited the concession area, allegedly asking residents to respect the agreement made on their behalf by the government. She told the community that it was the government’s duty to make agreements on their behalf, and that it was the government’s job to resolve any mistakes that may have been made.<sup>135</sup> President Sirleaf organized an inter-ministerial committee to investigate the grievances of water, land, and compensation, headed by the Ministry for Internal Affairs.<sup>136</sup>

## 6. Government Response

The government did not have a clear mechanism for responding to its citizens’ complaints about Sime Darby’s operations. Early on, the EPA fined the company for violating its permit. By September 2011, a government task force consisting of representatives from the Land Commission, the Ministry of Agriculture, the Ministry of Internal Affairs, and the FDA had been established to hear community grievances in Monrovia. According to some sources, however, President Sirleaf only organized an inter-ministerial committee to investigate the grievances after visiting the communities in January 2012.<sup>137</sup> This committee, headed by the Ministry of Internal Affairs, also included the Ministry of Justice; the Ministry of Agriculture; the Ministry of Labor; and the MLME as members.<sup>138</sup> President Sirleaf also appointed Chief Zanzan Karwor, Chairman of the National Traditional Council, and Alfred Quayjandii, spokesperson for the affected communities, to the committee.<sup>139</sup> Three sub-committees were established to address water, land, and compensation issues, respectively.

Also during her January visit, the president acknowledged that the government had made mistakes: “[Some things] could have been done better when it comes to Sime Darby. More consultations and more talks with the people should have taken place.”<sup>140</sup> She advised the community to address its grievances to the government rather than to the company with whom the government had signed an agreement on the Liberian peoples’ behalf. In response to this visit and to evident pressure from the government, in January 2012 the community withdrew its complaint to the RSPO, continuing negotiations with Sime Darby via Green Advocates.<sup>141</sup>

In February 2012, the Land Commission met separately with representatives from the affected communities and with Sime Darby management, where it discussed “Sime Darby’s continuous planting

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<sup>132</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 17.

<sup>133</sup> “Liberia: 500 Contractors Dismissed at Sime Darby,” *Global News Network*, December 15, 2011, accessed March 20, 2013, [http://www.gnnliberia.com/index.php?option=com\\_content&view=article&id=2771:liberia-500-contractors-dismissed-at-sime-darby&catid=34:politics&Itemid=54](http://www.gnnliberia.com/index.php?option=com_content&view=article&id=2771:liberia-500-contractors-dismissed-at-sime-darby&catid=34:politics&Itemid=54).

<sup>134</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 17.

<sup>135</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 19.

<sup>136</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 19.

<sup>137</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 19.

<sup>138</sup> “Ellen Ends Deadlock at Sime Darby Plantation in Grand Cape Mount County,” *The Liberian Observer*, January 14, 2012, accessed January 29, 2013, <http://www.liberianobserver.com/index.php/news/item/207-ellen-ends-deadlock-at-sime-darby-plantation-in-grand-cape-mount>.

<sup>139</sup> “Ellen Ends Deadlock at Sime Darby Plantation in Grand Cape Mount County.”

<sup>140</sup> “Liberia: Land grab or development opportunity?”

<sup>141</sup> Lomax, Kenrick, and Brownell, “Conflict or Consent?” 18-19.



of palm trees, the disposal of livelihoods, and the unauthorized withdrawal of a letter from the RSPO (Roundtable on Sustainable Palm Oil).”<sup>142</sup> Land Commission Chair Cecil Brandy ordered Sime Darby to halt all land clearing outside of the former Guthrie plantation until the Ministry of Agriculture and MLME had completed demarcation, which they were scheduled to accomplish by early 2013.<sup>143</sup>

## 7. Sime Darby’s Response

Sime Darby has responded to allegations against its behavior in Liberia in multiple and sometimes inconsistent ways: it has rebutted the accusations brought against it; it has negotiated with and provided extra benefits to the Project Affected Communities (PACs) that filed the RSPO complaint; and it is reviewing its procedures regarding FPIC.

After the December 2011 meeting between the PACs and Sime Darby, negotiations continued between Sime Darby and Green Advocates, which represented the residents who filed a complaint with the RSPO. In January 2012, the community withdrew its complaint to the RSPO under pressure from the government, but it continued negotiations with Sime Darby via Green Advocates and government mediation.

### 7.1 Denial of Wrongdoing

In 2012, Sime Darby was prompted to release three press releases denying allegations against the company’s operations in Liberia. These were in response to an editorial piece in *The New York Times* published in January; a report by the Rights and Resources Initiative, a nonprofit organization that promotes pro-poor land tenure and policy reform, released in February; and a report by Sustainable Development Institute and Friends of the Earth International.<sup>144</sup>

In August 2012, Liberian NGO Sustainable Development Institute released a report about Sime Darby’s operations in Gbarpolu County, where a second concession for 15,000 ha is located. However, Gbarpolu County chiefs largely discredited this report, and Sime Darby published an opinion essay in the local paper to refute the report’s claims. Sime Darby has publicly denied the malpractices of which the complaint letter to the RSPO accused them and cited the withdrawal of the October 2011 RSPO complaint.<sup>145</sup> In multiple press releases, Sime Darby has cited its employment of 700 more workers than its contract requires, as well as its minimum wage of \$5.51 per day for full employees.

### 7.2 Continued Negotiations

Privately, the company entered into negotiations with the Liberian government and with the PACs, represented by Green Advocates International. In November 2012, a partial settlement was announced between Sime Darby and the PACs. *The News* reported that Sime Darby had agreed to pay reparations, including the creation of Cultural Endowment Funds for the 17 PACs in Grand Cape Mount County.<sup>146</sup> Sime Darby will pay six dollars per hectare into the fund for 3,300 ha of land over 60 years, for a total of

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<sup>142</sup> Al-Varney Rogers, “Sime Darby stumbles in Grand Cape Mount; Residents Claim Firm Neglects Promises,” *FrontPage Africa*, April 3, 2012, accessed January 15, 2013, <http://www.frontpageafricaonline.com/business/marketfinance/2874-sime-darby-stumbles-in-grand-cape-mount-residents-claim-firm-neglects-promises.html>.

<sup>143</sup> Rogers, “Sime Darby stumbles in Grand Cape Mount.”

<sup>144</sup> “Sime Darby Responds to FOE Allegations,” Sime Darby Plantation, last modified 2013, accessed January 29, 2013, [http://www.simedarby.com/Sime\\_Darby\\_Response\\_to\\_FOE\\_Allegations.aspx](http://www.simedarby.com/Sime_Darby_Response_to_FOE_Allegations.aspx).

<sup>145</sup> “False and Inaccurate Reports on Liberian Operations,” Sime Darby Plantation, last modified 2012, accessed February 2, 2013, [http://www.simedarbyplantation.com/False\\_and\\_Inaccurate\\_Reports\\_on\\_Liberian\\_Operations.aspx](http://www.simedarbyplantation.com/False_and_Inaccurate_Reports_on_Liberian_Operations.aspx).

<sup>146</sup> Alloyicious David, “Sime Darby Agrees to Pay U.S. One Million,” *The News (Monrovia)*, November 27, 2012, accessed February 2, 2013, <http://allafrica.com/stories/201211281265.html>

more than \$1 million, at a cost of \$19,800 annually.<sup>147</sup> It will reportedly try to pay for ten years in advance.<sup>148</sup> In addition, the company will construct an office for the Cultural Endowment Funds in Ballah Town.<sup>149</sup> SDPL has agreed to provide breeding sheep to each of the 17 PACs; provide one 50 kilogram bag of rice to those aged 60 years or older for five months from December 2012 to April 2013; build four additional hand pumps for access to water during the dry season; and offer five scholarships to students in the affected communities.<sup>150</sup> In order to provide benefits for PAC residents, Sime Darby has hired at least one member of each of the 745 affected households as a full-time employee.<sup>151</sup>

### 7.3 Review of Company Procedures

Finally, Sime Darby is conducting a review of its procedures. Local media outlets have written about Sime Darby's admission of some mistakes in the FPIC process, and the company has hired Flora & Fauna International to study its ESIA process.<sup>152</sup> It is refining its FPIC process and has stated that it will not expand operations unless the Liberian populace consents.<sup>153</sup> Amid continuing concerns about its operations, SDPL unveiled its Sustainable Partnership Initiative (SPI) in Grand Cape Mount County on March 9, 2013. The SPI is "a multi stakeholder platform involving the private sector, local communities, civil society organizations, development partners, governments, academic and research institution, International organizations;" the platform seeks to institutionalize a model for conducting and obtaining FPIC through "community-based consultation and engagement," "which may also involve mapping of customary lands in palm oil land development, how to fund such a process, a platform to facilitate dialogue around oil palm development and strategies."<sup>154</sup>

## 8. Consequences for the Company

### 8.1 Delays in Land Acquisition and Planting

By December 2011, Sime Darby had planted 1,180 ha of land.<sup>155</sup> It had prepared 12,594 ha more for planting,<sup>156</sup> of which 7,785 ha was on the former Guthrie plantation, and cleared at least 4,000 ha of its first 10,000 ha concession plot.<sup>157</sup> Several months later, in August 2012, SDPL had only planted 3,200 ha with oil palm, but according to an article in the *Financial Times* had 400,000 seedlings waiting to be transplanted.<sup>158</sup> By February 2013, the company had still only planted 5,000 ha, and this mostly on the former plantation lands.<sup>159</sup>

The company's plantings are growing at a rate of about 2,000 hectares per annum, but Carl Dagenhart, Sime Darby Head of Corporate Communications for Europe and Africa, has said that the company should be planting 10,000 ha with oil palm annually to be economically viable.<sup>160</sup> Once a seedling is

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<sup>147</sup> David, "Sime Darby Agrees to Pay U.S. One Million;" Lawrence Yong, "Sime Darby to slow operations in Liberia," *KiniBiz*, February 7, 2013, accessed March 23, 2013, <http://www.kinibiz.com/story/corporate/2360/sime-darby-to-slow-operations-in-liberia.html>.

<sup>148</sup> David, "Sime Darby Agrees to Pay U.S. One Million."

<sup>149</sup> David, "Sime Darby Agrees to Pay U.S. One Million."

<sup>150</sup> David, "Sime Darby Agrees to Pay U.S. One Million."

<sup>151</sup> Sime Darby Berhad, *Sime Darby Annual Report 2012*, 99.

<sup>152</sup> "False and Inaccurate Reports on Liberian Operations."

<sup>153</sup> Yong, "Sime Darby to slow operations in Liberia."

<sup>154</sup> "Liberia: Sime Darby, Local and International Partners Launch Sustainable Partnership Initiative As a Palm Oil..." *The Inquirer (Monrovia)*, March 7, 2013, accessed April 7, 2013, <http://allafrica.com/stories/201303110907.html>.

<sup>155</sup> "False and Inaccurate Reports on Liberian Operations;" Lomax, Kenrick, and Brownell, "Conflict or Consent?" 14.

<sup>156</sup> "False and Inaccurate Reports on Liberian Operations;" Lomax, Kenrick, and Brownell, "Conflict or Consent?" 14.

<sup>157</sup> Lomax, Kenrick, and Brownell, "Conflict or Consent?" 14.

<sup>158</sup> Rice, "Palm oil: Companies have trouble securing land."

<sup>159</sup> Yong, "Sime Darby to slow operations in Liberia."

<sup>160</sup> Rice, "Palm oil: Companies have trouble securing land."

transplanted, it takes approximately three to five years for the palm to be economically productive. Sime Darby originally stated its desire to begin production by 2015, but with the limited rate of planting, this goal will not be met. The company has also stated that it will not expand operations unless the Liberian populace consents,<sup>161</sup> although it expressed plans to develop an additional 55,000 ha by the end of 2015.<sup>162</sup>

Although it is not developing much of its concession area, Sime Darby is still paying a lease of \$1.25 per hectare for undeveloped land within the concession area for the first eight years, and \$2.50 per hectare thereafter.<sup>163</sup> Short delays now will impact its plans for future expansion as well: a refinery will not be built until at least 100,000 ha are planted<sup>164</sup>. If SDPL had been more proactive in obtaining FPIC and more responsible in their operations, the project would be on track, and the company would not have incurred these delays.

## 8.2 Increased Costs of Crop Compensation, Resettlement, and Labor

While a report on concessions in post-conflict Liberia by researchers from Columbia University asserted that crop compensation prices have been well below the crops' market value, the cost of compensation has nonetheless been significant for Sime Darby.<sup>165</sup> By September 2011, the company had not only incurred the costs of negotiations, but also paid \$1.35 million in crop compensation to 2,132 farmers.<sup>166</sup> The company would not have incurred as many costs if it had better researched the makeup of its concession area before signing the contract.

In November 2012 Sime Darby agreed to a partial settlement with the PACS for more than \$1 million, the terms of which I have described above. As part of its new commitment to hiring a worker from every household in response to local pressure, the company increased its permanent workforce by approximately 700 employees, all remunerated at a rate of \$5.51 per day.

## 8.3 Diminished National and Global Reputation

The situation in Liberia has garnered local and international attention in media outlets and NGO reports. Among the news outlets that have reported on Sime Darby's dealings in Liberia are *The Guardian*, *The New York Times*, *Financial Times*, *New Strait Times*, and *The New Dawn*. A team from New York's Columbia University traveled to Liberia in 2011 to conduct fieldwork on the negative social impacts of FDI in the mining and oil palm sectors. Nonprofit organizations reporting on the situation include the Forest Peoples Programme, Rights and Resources Initiative, Early Warning Early Response (EWER) Working Group: Liberia, Green Advocates International, Friends of the Earth-Europe, and the Sustainable Development Institute. Numerous news articles have reported on Sime Darby's admission that it underestimated the effort and time required to achieve Liberians' FPIC, and that the company wrongly assumed that the Liberian government would more accurately represent the land rights situation.

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<sup>161</sup> Yong, "Sime Darby to slow operations in Liberia."

<sup>162</sup> Sime Darby Berhad, *Sime Darby Annual Report 2012*, 99.

<sup>163</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 35.

<sup>164</sup> Yong, "Sime Darby to slow operations in Liberia."

<sup>165</sup> Frazer Lanier, Ashoka Mukpo, and Frithiof Wilhelmsen, *Smell-No-Taste: The Social Impact of Foreign Direct Investment in Liberia*, (New York: Center for International Conflict Resolution, January 2012), 7-8.

<sup>166</sup> "False and Inaccurate Reports on Liberian Operations."

## 8.4 Threatened Project Viability in Africa

Prior to the playing out of this controversy, Sime Darby had seemed poised to expand its operations in West Africa, the new frontier for palm oil companies. On October 20, 2011 Sime Darby incorporated Sime Darby Plantation Cameroon Ltd (SDPCL) in the Republic of Cameroon.<sup>167</sup> However, there has been no news on this potential investment since 2011. Sime Darby may well have abandoned its plans to expand in Cameroon, another contentious site of land investment, given its difficulties in Liberia.

An article in the March 22, 2013 *Inquirer* suggested that Sime Darby may be considering pulling out of Liberia completely “due to the lack of new land to expand, coupled with unprecedented attacks on its reputation and operations.”<sup>168</sup> However, leaving Liberia would come at high cost; Sime Darby had already invested more than \$100 million into Liberia as of February 2013.<sup>169</sup>

## 9. Recommendations for the Government

### 9.1 Agricultural Concessions

#### 9.1.1 Impose a Moratorium on New Agricultural Concessions

The government clearly took missteps in evaluating the situation on the ground. It claimed to represent the people, but did not consult with them when negotiating the terms of the contract. Neither did it clearly evaluate title to lands; some 40% of the concession area was subject to overlapping land claims.<sup>170</sup> A UN Panel of Experts report recommended in 2010 that “the Government of Liberia should impose a moratorium on allocating further natural resources concessions, as well as private use permits, until the Lands Commission completes its review of ownership of existing concessions and makes further recommendations on how to move forward in clarifying land tenure.”<sup>171</sup> The Liberian government should heed its advice to gain the respect and trust of its citizens and prevent future controversy.

#### 9.1.2 Establish a Clear Point of Contact for Agricultural Investments

The government lacks a clear mechanism by which to monitor agricultural concessions. Establishing a sole ministry as the point of contact for agricultural investments would make the government ministries’ responsibilities more straightforward. Agriculture is already included in the country’s reports to the Extractive Industries Transparency Initiative (EITI); it would do well to establish a governance mechanism similar to that for its other natural resource concessions.

### 9.2 Community Relations

#### 9.2.1 Ensure that a clear grievance process is in place

In this case, the government was embarrassed when local peoples went to the RSPO with their complaint. The communities’ need to work around the government in order to try to resolve its grievances – by meeting bilaterally with Sime Darby, for example – is evidence of public mistrust of the

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<sup>167</sup> “Sime Darby Berhad Incorporates Sime Darby Plantation Cameroon Ltd,” *Reuters*, October 27, 2011, accessed March 28, 2013, <http://www.reuters.com/finance/stocks/SIME.KL/key-developments/article/2423825>.

<sup>168</sup> “G. Cape Mount Chair Expresses Fear If...” *The Inquirer (Monrovia)*, March 22, 2013, accessed April 7, 2013, <http://allafrica.com/stories/201303251958.html>.

<sup>169</sup> Lawrence Yong, “Sime Darby spends RM300mil in Liberia,” *KiniBiz*, February 27, 2013, accessed March 23, 2013, <http://www.kinibiz.com/story/corporate/5635/sime-darby-spends-rm300mil-in-liberia.html>.

<sup>170</sup> UNSC, *Final report of the Panel of Experts on Liberia*, 66.

<sup>171</sup> UNSC, *Final report of the Panel of Experts on Liberia*, 71.

government's motives and ability to resolve conflicts. Establishing a grievance process and point of communication would help improve the Liberian government's legitimacy among its citizens.

## 10. Recommendations for the Company

### 10.1 Environment

Although Sime Darby targeted areas that were not primary forests so as to comply with RSPO standards and environmental best practices, it did not take into account the human factors in High Conservation Value (HCV) areas, which proved to be to its detriment. It cleared forests and dammed and filled wetlands, violating all of its EPA permit's conditions. SDPL should have followed its own recommendations for leaving a buffer area around waterways and not filling in wetlands.

### 10.2 Government Relations

#### 10.2.1 Understand the Investment Landscape Before Signing a Contract

The most challenging issue for SDPL in Liberia has been uncertainty as to who owns the land. The contract with the government clearly implies that the land is under the government's full ownership, and that those living on the land in the concession area can be resettled with little problem. As the issue of land tenure and resettlement is one that has upset the palm oil companies' practices in Malaysia and Indonesia, one would expect Sime Darby to have conducted further research into the land tenure laws and debates of Liberia. This is especially true since Liberia was just six years removed from conflict when the concession agreement was signed.

Governments that are eager for concessions—and indeed have written concessions into their Poverty Reduction Strategy—are likely not the most reliable sources of information about the effectiveness of their land tenure systems and practices. Sime Darby should have been aware that multiple ministries are working to get the country's laws in order.

#### 10.2.2 Be Prepared for Counterparty Risk

Investors should not assume that a national government's interests are the same as those of rural populations. In this case, the government claimed in the contract that the land would be free from encumbrances, which was not the case. It left Sime Darby to handle the controversy and reputational risks largely on its own, although the reputations of both the company and the government suffered.

### 10.3 Land Rights and Community Engagement

#### 10.3.1 Engage with Communities and Conduct Participatory Mapping

The company says that it knew there were risks to operating in Liberia. If it had better mitigated these risks, it would not have incurred the costs of delays in planting and land acquisition. For instance, best practices would have the company conduct participatory mapping and incur the upfront costs of consulting with local people even before the concession agreement was reached, to make sure that the land was viable for its usage. Sime Darby was contractually obligated to conduct a land survey within one year of the concession agreement becoming Liberian law, whereas it should have conducted the survey before signing the contract.<sup>172</sup>

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<sup>172</sup> *Concession Agreement Between The Republic of Liberia and Sime Darby Plantation (Liberia) Inc.*, 11.

Had the company mapped areas in the concession area before signing, it would have been able to avoid some of the costs it has incurred in buying land and compensating landholders for their crops. Sime Darby would not only have saved the costs it is incurring from delays but also gained the trust and confidence of local people and future employees, which is vital to the stability of the area and essential to the project's long-term success.

### **10.3.2 Ensure the Presence of a Functional Grievance System**

Having a clear grievance system in place before beginning operations would have made the process straightforward for all involved. If the communities had been able to file a grievance with Sime Darby directly, they would not have had to resort to filing a complaint at the RSPO level, which damaged Sime Darby's international reputation. Where NGOs and local communities feel that a government cannot be held accountable, they may target the company, especially when that company has more money and power than the government. As an international company, targeting Sime Darby's reputation may be a strategy to hold both the company and the government to account. It may also serve as a lesson to other investors on how not to act.

### **10.3.3 Progress Slowly and Focus on Community Engagement**

Sime Darby's reputation in Liberia seems to be at its best when it makes an effort to develop relations on the ground. The company is learning from its mistakes, although it is not beyond reason that Sime Darby should have expected local resistance to be a risk of investing in agriculture in a new country.

## **10.4 Food Security**

While Sime Darby prides itself on best practices in CSR in its Malaysian plantations, it should have better assessed the situation in Liberia. The ESIA acknowledged that local peoples rely on subsistence agriculture and fishing in swamps and wetlands for their food supply and even building materials. By destroying some of these areas and banning access to others, the company has had a negative effect on food security in the area. While it supplies rice to its employees, households that are not in Sime Darby's employment have not been able to supply their own food and must buy it at more expensive market rates. Sime Darby should have explored the possibility of establishing benefit sharing to reduce conflict and promote better relations in the concession area.

## **10.5 Labor**

Sime Darby has been conscientious about its labor practices, which is wise considering the poor reputation of plantation labor conditions. Given the presence of ex-combatants in the concession area, Sime Darby worked with the government to hire ex-combatants first, in an effort to provide stability to the region. After consultation with the Project Affected Communities, the company also announced its plans to hire nearly 700 more employees as full-time workers rather than contract workers, so that every PAC household would have a member employed by Sime Darby and would receive benefits. It provides a wage of \$5.51 per day for permanent employees, higher than the salary for comparable unskilled labor in Liberia. Sime Darby's provision of housing, medical care, education, and subsidized rice for employee households proves an added benefit that gained it favor in its first months of operation in 2010.

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# Asia Pulp and Paper Group in Indonesia

Uprooting Deforestation

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## **Abstract**

Asia Pulp and Paper Group (APP) is one of the world's largest paper companies. It is also historically responsible for large-scale destruction of Indonesia's rainforests. Over the past 30 years APP directly and indirectly increased social conflicts within local community groups, exacerbated the effects of climate change, and destroyed the habitats of local, vulnerable species through deforestation for pulp processes. In February 2013, due to external pressures, the company committed to the implementation of sustainable, best practices on the ground.

This case study discusses the direct and indirect impacts of Asia Pulp and Paper Groups' foreign-direct investment in Indonesia and their influence on the company's long-term policies, reputation, and economic capabilities.

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## Acronyms

APP	Asia Pulp and Paper Group
BII	Bank International Indonesia
BRIC	Brazil, Russia, India, China
CIFOR	Center for International Forestry Research
CITES	Convention on the International Trade in Endangered Species
CO <sup>2</sup>	Carbon Dioxide
CSR	Corporate Social Responsibility
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
FDI	Foreign Direct Investment
FPIC	Free, prior, and informed consent
GDP	Gross Domestic Product
GHG	Greenhouse gases
HCV	High conservation value
ICIJ	International Consortium of Investigative Journalists
MSCI	Morgan Stanley Corporate Investments
NGO	Non-governmental organization
RAN	Rainforest Action Network
REDD	Reducing Emissions from Deforestation and Forest Degradation
WWF	World Wildlife Fund

## 1. Introduction

Asia Pulp and Paper Group (APP) is one of the world's largest paper companies. It is also historically responsible for large-scale destruction of Indonesia's rainforests. Over the past 30 years, APP directly and indirectly increased social conflicts within local community groups, exacerbated the effects of climate change, and destroyed the habitats of local, vulnerable species through deforestation for pulp processes. Environmental campaigners targeted Asia Pulp and Paper for poor environmental and social performance, damaging the company's reputation and encouraging customers such as Walmart to suspend services with APP, resulting in substantial financial losses.

This case study addresses the direct and indirect impacts of Asia Pulp and Paper's foreign direct investment (FDI) in Indonesia, the resulting controversies, and their influence on the company's long-term policies, reputation, and economic capabilities. APP also invests directly in China and Cambodia, with similar negative outcomes; however, the company's history in Indonesia is more pronounced. This case study spans 30 years in Indonesia but concentrates on the 1990s, following APP's expansion. Therefore, this case study focuses primarily on operations in Sumatra, Indonesia, particularly the principal mill PT. Indah Kiat Pulp and Paper Tbk.

APP was chosen for this case study due to its negative safeguard performances and recent attempts to redeem itself as a premier, world-class pulp and paper manufacturer. While it is too early to know whether the company will succeed in revamping its image and instituting sustainable practices, its past mistakes and recent initiatives provide insight into environmental and social safeguards and their important but often obscure link to economic growth.

## 2. Background

### 2.1 Indonesia's Forests

Indonesia's forests are rich in biodiversity and natural resources, housing "10 percent of the world's flowering plant species, 12 percent of all mammal species, 17 percent of all reptile and amphibian species, and 17 percent of all bird species" including the endangered orangutan, rhinoceros, Sumatran tiger, and Asian elephant.<sup>1</sup> Overexploitation of Indonesia's bountiful rainforests results in immense consequences for its forest ecosystems, distinctive biodiversity, and forest-dependent communities while stimulating the economy and generating crucial revenues. Nearly 75 percent of Indonesia's original forest cover has been destroyed.<sup>2</sup>

The nation contains 1,750 islands and 81,000 kilometers (km) of coastline, with the majority of the population living in coastal regions such as Java. The state, which hosts fragile sea and coastal ecosystems, peat swamp forests, and high levels of biodiversity, is extremely susceptible to climate change because of its geography, topography, and climate.

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<sup>1</sup> Ed Matthew, "Asia Pulp and Paper Briefing," last modified June 2001, accessed May 3, 2013, [http://www.foe.co.uk/resource/briefings/asia\\_pulp\\_and\\_paper.pdf](http://www.foe.co.uk/resource/briefings/asia_pulp_and_paper.pdf).

<sup>2</sup> Ed Matthew, "Asia Pulp and Paper Briefing," last modified June 2001, accessed May 3, 2013, [http://www.foe.co.uk/resource/briefings/asia\\_pulp\\_and\\_paper.pdf](http://www.foe.co.uk/resource/briefings/asia_pulp_and_paper.pdf).

The removal of natural forest cover for various products such as pulp and paper, firewood, timber, and medical supplies cripples the natural ecosystems' composition. This results in soil degradation, exacerbated climate conditions, habitat destruction, and limits the natural capacity to absorb pollutants including carbon dioxide (CO<sup>2</sup>). Deforestation removes the plant cover and root systems which keeps the ground humid, improving soil quality for agriculture.<sup>3</sup> A lack of fertile top soil leads to erosion and intensified flooding. Without adequate forest shelter, species are forced to adapt rapidly to a shifting environment, limiting their ability to co-exist and collapsing nature's delicate balance. Finally, deforestation destroys nature's means of absorbing the greenhouse gases (GHG) that fuel climate change.<sup>4</sup> Pollutants such as sulphur dioxide and carbon dioxide may be deadly to humans in larger quantities, but they act as fertilizer to plants. The repercussions of illegal deforestation in Indonesia do not affect only the local systems; climate change and unlawful timber extraction have implications for the global population and investors.

## 2.2 Investor Profile: The Widjaja Family and Sinar Mas Group

Rapid growth in Indonesia's pulp and paper industry is one of the major contributors to Indonesia's rapid deforestation. The Widjaja family and Sinar Mas Group, which contains Asia Pulp and Paper, have a 30-year history of colossal environmental and social damage shrouded in controversy. Whether new, short-term policies will result in long-term, concrete action to make up for said damages remains to be seen.

A study from the Centre for International Forestry Research (CIFOR) and the World Wildlife Fund's (WWF) Macroeconomics Program Office claims "Indonesian pulp production capacity grew from 606,000 to 4.9 million metric tons per annum between 1988 and 1999."<sup>5</sup> Christopher Barr's landmark report "Profits on Paper: the Political Economy of Fiber, Finance and Debt in Indonesia's Pulp and Paper Industries" blames poor government regulation and international financial institutions for not properly understanding the political, environmental, and social risks.<sup>6</sup> During that period, APP was a leading driver of illegal logging and a key actor in Indonesia's unsustainable supply of timber throughout Asia and the world.

In 1976, Eka Tjipta Widjaja started a joint pulp and paper venture called Indah Kiat with Chung Hwa Pulp Corporation and Yuen Foong Yu Paper Manufacturing Company Ltd. of Taiwan. Widjaja is the owner of Bank International Indonesia (BII) and founder of the Sinar Mas Group, one of the largest conglomerates in Indonesia, which includes Asia Pulp and Paper. The original mills produced 100 tons per day of wood-free paper until the 1980s, when the now-entitled Asia Pulp and Paper began aggressively expanding

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<sup>3</sup> "Modern Day Plague," National Geographic, accessed April 20, 2013, <http://environment.nationalgeographic.com/environment/global-warming/deforestation-overview..>

<sup>4</sup> "Modern Day Plague," National Geographic, accessed April 20, 2013, <http://environment.nationalgeographic.com/environment/global-warming/deforestation-overview..>

<sup>5</sup> Ed Matthew, "Asia Pulp and Paper Briefing," last modified June 2001, accessed May 3, 2013, [http://www.foe.co.uk/resource/briefings/asia\\_pulp\\_and\\_paper.pdf](http://www.foe.co.uk/resource/briefings/asia_pulp_and_paper.pdf).

<sup>6</sup> Christopher Barr, "Profits on Paper: The Political-Economy of Fiber, Finance, and Debt in Indonesia's Pulp and Paper Industries," Center for International Forestry Research, last modified November 30 2000, accessed February 15, 2013, [http://siteresources.worldbank.org/INTINDONESIA/FLEG/20171586/Chriss\\_Bar.pdf](http://siteresources.worldbank.org/INTINDONESIA/FLEG/20171586/Chriss_Bar.pdf), 46.



into new markets.<sup>7</sup> BII bankrolled the Sinar Mas Group and later APP but was seized by the Indonesian Government after acquiring serious debt during the 1997 Asian Financial Crisis.

As of 2001, “APP [accounted] for...40 percent of Indonesia’s overall pulp output.”<sup>8</sup> In 2010, “APP Indonesia and China exported a total of 3.7 million tons of paper, tissue and packaging products.”<sup>9</sup> 80 percent of those traded products traced back to the APP’s Indah Kiat Perawang mill in Indonesia.<sup>10</sup> In addition, the International Consortium of Investigative Journalists (ICIJ) recently linked British Virgin Island and Labuan offshore pulp and palm oil companies to Eka Tjipta Widjaja through Sinar Mas.<sup>11</sup>

Asia Pulp and Paper is a unique case of foreign direct investment. Originally founded in Indonesia, it moved to Singapore in 1994 shortly before the end of Suharto’s regime, for the financial and legal benefits of a substantially more business-friendly government. A significant portion of APP’s expansion while in Singapore, therefore, was labeled FDI. Coincidentally, the company’s establishment in Singapore in the mid to late 1990s coincided with some of its most hazardous social and environmental activities. The time span also corresponded with the Asian Financial Crisis and the beginnings of a severe environmental campaign backlash against APP operations in Sumatra. APP has since moved back to Indonesia with offices in China and India.

After almost a decade of international pressure, on February 5, 2013, Asia Pulp and Paper committed to end deforestation in order to save Indonesia’s rainforests. The APP press release announced several steps: a complete shutdown of current forest clearance; the beginning of independent assessments to target high conservation value (HCV) areas; and a new Forest Conservation Policy which not only applies to APP, but to all of Sinar Mas Group’s supplies, foreign mills, and future projects.<sup>12</sup>

While optimistic about the anti-deforestation pledge, the international community remains cautious. Bustar Maitar, Head of Greenpeace’s Forest Campaign in Indonesia, commended “APP for making this commitment to end deforestation” in a 2013 press release. Maitar insisted, “[I]t’s what happens in the forest that counts and [Greenpeace] will be monitoring progress closely.”<sup>13</sup> Despite past promises to phase out logging of natural forests, the company has missed three self-imposed target dates since 2004. Lafcado Cortesi, Asia Director for Rainforest Action Network (RAN), admitted in a 2013 press release that “though [RAN welcomes] APP’s new rainforest commitments as a milestone, the hidden story [is] the controversial paper giant’s long history of broken promises, land conflicts and human rights

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<sup>7</sup> “Asia Pulp and Paper,” Asia Pulp and Paper Group, accessed April 4, 2013, <http://www.asiapulppaper.com>.

<sup>8</sup> Ed Matthew and Jan Willem van Gelder, “Paper Tiger, Hidden Dragons,” Friends of the Earth, accessed May 3, 2013, [http://www.foe.co.uk/resource/reports/paper\\_tiger\\_hidden\\_dragons.pdf\\_11](http://www.foe.co.uk/resource/reports/paper_tiger_hidden_dragons.pdf_11).

<sup>9</sup> “Asia Pulp and Paper under Investigation: The Ramin Paper Trail,” Greenpeace International, last modified 2012, accessed May 3, 2013, <http://www.greenpeace.org/international/en/publications/Campaign-reports/Forests-Reports/The-Ramin-Paper-Trail>, 10.

<sup>10</sup> “Asia Pulp and Paper under Investigation: The Ramin Paper Trail,” Greenpeace International, last modified 2012, accessed on May 3, 2013, <http://www.greenpeace.org/international/en/publications/Campaign-reports/Forests-Reports/The-Ramin-Paper-Trail/>, 10.

<sup>11</sup> Marina Walker Guevara, Nicky Hager, et al., “Who Uses the Offshore World,” International Consortium of Investigative Journalists, accessed April 4, 2013, <http://www.icij.org/offshore/who-uses-offshore-world>.

<sup>12</sup> “Asia Pulp and Paper Group (APP) Commits to an Immediate Halt to All Natural Forest Clearance,” Rainforest Realities, modified in February 2013, accessed February 16, 2013, <http://www.rainforestrealities.com/newsroom/press-releases/app-commits-to-an-immediate-halt-to-all-natural-forest-clearance>.

<sup>13</sup> “Major Breakthrough in Protection for Indonesia’s Remaining Rainforests,” Greenpeace, modified in 2013, accessed February 6, 2013, <http://www.greenpeace.org/international/en/press/releases/Major-breakthrough-in-protection-for-Indonesias-remaining-rainforests>.

violations across its operations.”<sup>14</sup> Nevertheless, improving corporate accountability could mean a new future for Indonesia’s forests and APP.

### 2.2.1 Asia Pulp and Paper Financing Structure

Asia Pulp and Paper presently sells products in more than 120 countries and continues to create mechanisms for better access to international financial markets. Even though the company strongly seeks to leverage private financing instruments for business expansion, the Widjaja family encourages commercial contracts within the family or with related parties. In early 2000, banks only financed one-fourth of APP’s assets, with bondholders and shareholders supplying the rest.<sup>15</sup> As a result, owners within the Sinar Mas Group conglomerate minimize their financial obligation while maintaining greater control of the group’s numerous subsidiaries than outside investors.<sup>16</sup>

After the headquarters moved to Singapore, APP grew and borrowed funds at an unsustainable rate. The Widjaja family, which collectively owns Sinar Mas Group and its subsidiaries (including Asia Pulp and Paper), received substantial funds from both private and state-owned banks without a real ability to make returns. One media report wrote, “Here was a company that won the confidence of investors by securing the imprimatur of the world’s leading financial firms...yet it turns out nobody outside APP really had the full picture of the company’s finances.”<sup>17</sup> Banks did not inquire into the business risks associated with APP loans because “in Southeast Asia, APP was the top prospect on most banks’ target [opportunity] list.”<sup>18</sup> Banking in the 1990s was optimistic about such investments, despite the limited amount of data on companies’ productivity and the related dangers. Friends of the Earth found that from 1990 to 2000, over 300 financial institutions guaranteed financing for Asia Pulp and Paper, including Morgan Stanley, Goldman Sachs, Merrill Lynch, Bank of America, and Bank of China.<sup>19</sup>

It was not until after the Asian Debt Crisis of 1997 that those international financial flows began to dry up, as investors and clients temporarily grew wary of APP’s financial, social, and environmental risks. Despite the setbacks, APP rebounded into the green in late 1999 and loyal investors, including Morgan Stanley, were ready to pay. “APP, with \$3 billion in revenues, had new, state-of-the-art paper mills across Asia, plenty of fast-growing hardwood in Indonesia, and moved into the boom China market...of course, there was the little matter of APP’s \$13.4 billion debt.”<sup>20</sup>

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<sup>14</sup> “Rainforest Action Network Responds to Asia Pulp and Paper’s New Forest Commitments,” Rainforest Action Network, modified in 2013, accessed February 6, 2013, [http://ran.org/rainforest-action-network-responds-asia-pulp-and-paper%E2%80%99s-new-forest-commitments#ixzz2QvP1VzyR\\_](http://ran.org/rainforest-action-network-responds-asia-pulp-and-paper%E2%80%99s-new-forest-commitments#ixzz2QvP1VzyR_)

<sup>15</sup> Ed Matthew, “Asia Pulp and Paper Briefing,” last modified June 2001, accessed May 3, 2013, [http://www.foe.co.uk/resource/briefings/asia\\_pulp\\_and\\_paper.pdf](http://www.foe.co.uk/resource/briefings/asia_pulp_and_paper.pdf).

<sup>16</sup> Romain Pirard and Rofikoh Rokhim “Asia Pulp and Paper Indonesia: The Business Rationale that Led to Forest Degradation and Financial Collapse,” Center for International Forestry, last modified in 2006, accessed May 3, 2013, <http://www.robinwood.de/german/trowa/sumatra/appcifor2006.pdf>, 4.

<sup>17</sup> Michael Shari, “Asia’s Worst Deal,” *Bloomberg Business Week Magazine*, 2001, accessed March 2, 2013, <http://www.businessweek.com/stories/2001-08-12/asias-worst-deal>.

<sup>18</sup> Romain Pirard and Rofikoh Rokhim “Asia Pulp and Paper Indonesia: The Business Rationale that Led to Forest Degradation and Financial Collapse,” Center for International Forestry, last modified in 2006, accessed on May 3, 2013, <http://www.robinwood.de/german/trowa/sumatra/appcifor2006.pdf>, 5.

<sup>19</sup> Ed Matthew, “Asia Pulp and Paper Briefing,” last modified June 2001, accessed May 3, 2013, [http://www.foe.co.uk/resource/briefings/asia\\_pulp\\_and\\_paper.pdf](http://www.foe.co.uk/resource/briefings/asia_pulp_and_paper.pdf).

<sup>20</sup> Michael Shari, “Asia’s Worst Deal,” *Bloomberg Business Week Magazine*, 2001, accessed March 2, 2013, <http://www.businessweek.com/stories/2001-08-12/asias-worst-deal>.

APP expanded into China, but its paper product was considered “too fancy” and did not meet market demand. “In February 2000, reports began circulating that crates of luxury-grade paper were mildewing under tarpaulins.”<sup>21</sup> J.P. Morgan later offered the Widjaja family “a 1-year, \$100 million bond with a 30% interest rate,” but other banks, including Goldman Sachs, had learned their lesson.<sup>22</sup> Eventually, unsustainable spending caught up with the paper giant. During and after the Asian Financial Crisis, APP defaulted on its massive debts. Luckily for the company, the debts were declared invalid by Indonesian courts in 2007 to promote economic growth.

### 2.3 Host Country Profile: Indonesia

Foreign investment in Indonesia increased after 2005, when Goldman Sachs upgraded its assessment of attractive emerging markets from the BRIC countries (Brazil, Russia, India and China) to the N-11 (Bangladesh, Egypt, Iran, Mexico, Nigeria, Pakistan, Philippines, South Korea, Turkey, Vietnam, and Indonesia). “The upgrading of Indonesia’s sovereign debt to investment grade in 2011 was...a welcome development.”<sup>23</sup> At present, Indonesia’s economic growth and geographic location makes it attractive to investors. The widely accepted Morgan Stanley Corporate Investment (MSCI) Emerging Markets Index today lists Indonesia as one of the favorable emerging market countries.

Asia Pulp and Paper has invested in Indonesia since the late 1970s, with enormous environmental and social impacts in the 1990s. At the time, the Suharto regime exhibited weak governance structures, increasing investment.

More recently, Indonesia and Southeast Asia are replete with opportunities for FDI and burgeoning infrastructure projects. The Indonesian government has advanced past Java-based economic and political tactics such as the famous, disastrous transmigration program. In 2009, the Indonesian

### Indonesia Transmigration Initiative

The Dutch started the transmigration initiative during colonial rule and the Indonesian Government continued the program, moving landless citizens away from densely populated cities in areas such as Java into the less densely populated rural areas and outer islands.

The purpose of the program was to reduce poverty and extend political control over rural regions, but the initiative was unsuccessful. The climate and soil in many rural areas did not permit agricultural development and citizens, largely untrained in farming, lacked the skills to till the difficult land.

As a result, locals turned to deforestation to feed their families. In addition, the movement strengthened separatists and exacerbated ethnic clashes among the local populations.

<sup>21</sup> Michael Shari, “Asia’s Worst Deal,” *Bloomberg Business Week Magazine*, 2001, accessed March 2, 2013, <http://www.businessweek.com/stories/2001-08-12/asias-worst-deal>.

<sup>22</sup> Michael Shari, “Asia’s Worst Deal,” *Bloomberg Business Week Magazine*, 2001, accessed March 2, 2013, <http://www.businessweek.com/stories/2001-08-12/asias-worst-deal>.

<sup>23</sup> Mika Purra, “Can Indonesia’s New Land Law Help Its Wobbly March toward Joining the BRICs?” *Jakarta Globe*, 2012, accessed February 13, 2013, <http://www.thejakartaglobe.com/opinion/can-indonesias-new-land-law-help-its-wobbly-march-toward-joining-the-brics/496166>.

government embarked upon a campaign to improve public awareness of deforestation and promote inter-agency cooperation. The Coordinating Ministry of Political Security Affairs, the Ministry of Forestry, the National Police, and the financial sector regulators work diligently to control illegal logging.

A 2011 MSCI study ranked the country as less risky than most emerging markets. The economy continues to grow at a steady rate, following earlier growth spurts. In 2011, its Gross Domestic Product (GDP) was \$846.83 billion, or about \$4,700 per capita.<sup>24</sup> Growth can be attributed in part to new governance systems, a visible decrease in corruption, and an increase in dialogue with the international community. Currently, openness and good governance are creating a more transparent environment that is more conducive to and less risky for foreign investment.

On the other hand, Indonesia is not without risks: strong growth leads to strong inflation rates; unsustainable land use and deforestation exacerbated longstanding social conflicts and the effects of climate change; and while a new governance system is lessening risk and corruption, corruption still exists. In 2011 Indonesia ranked 100<sup>th</sup> on Transparency International's Corruption Perceptions Index.<sup>25</sup>

### 2.3.1 Indonesian Land Laws

Before 1960, Indonesian land laws were an accumulation of traditional, colonial, and civil law. Indonesia underwent land reform after 1960, but complications due to corruption and serious disputes between landowners and indigenous groups continued. Currently there are an estimated 572 laws, regulations, or other rules relating to land processes.<sup>26</sup>

In December of 2011 the Indonesian government took major steps to introduce a new land law in order to resolve previous legal complications and attract foreign investment. Weak infrastructure during Suharto's dictatorship was a primary barrier to financial flows and a main driver of deforestation. Few corporations and government officials understood or enforced land laws, allowing the pulp industry to inflict serious damage for private profit by clear-cutting in culturally sensitive areas and failing to observe environmental and social safeguards. Indigenous land rights follow a different set of standards than that of colonial and civil law, and therefore were often not written in binding documents. This enabled Suharto to seize local lands for private profit. Governmental corruption impeded public access to goods, discouraged sustainable investments, and denied communities connected to the land compensation for the impacts of logging projects.

Asia Pulp and Paper's operations span from the mid-1970s to the present, with the bulk of unsustainable expansion falling in the late 1980s and early 1990s. The land acquisition law, which took effect in May 2012, allows the government to force land sales for public-good infrastructure projects, thereby encouraging more easily monitored and verifiable foreign investment while permitting ease of access.<sup>27</sup> The law forces landowners to sell their property for projects which support long-term Indonesian economic growth. These projects span from road infrastructure and energy projects to new schools and

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<sup>24</sup> World Bank, "Data," World Bank, accessed February 28, 2013, data.worldbank.org.

<sup>25</sup> Mika Purra, "Can Indonesia's New Land Law Help Its Wobbly March toward Joining the BRICs?" *Jakarta Globe*, 2012, accessed February 13, 2013, <http://www.thejakartaglobe.com/opinion/can-indonesias-new-land-law-help-its-wobbly-march-toward-joining-the-brics/496166>.

<sup>26</sup> Hamid Yusuf, "Presentation on Land Administration System in Indonesia," (presented at pre-17<sup>th</sup> AVA Congress in Siem Reap, Cambodia).

<sup>27</sup> Mika Purra, "Can Indonesia's New Land Law Help Its Wobbly March toward Joining the BRICs?" *Jakarta Globe*, 2012, accessed February 13, 2013, <http://www.thejakartaglobe.com/opinion/can-indonesias-new-land-law-help-its-wobbly-march-toward-joining-the-brics/496166>.

hospitals. This law will direct investment away from industries that do not directly compensate and improve the local community and increase the potential for transparent, measurable foreign investment projects.

### 3. Project Impacts

Deforestation has been a chronic problem in Indonesia, causing serious environmental degradation due to uncontrolled logging and inconsistent monitoring of forest cover. Changes in precipitation patterns will affect wet and dry seasons and therefore disrupt agriculture. Warming in the country and decreased rainfall is suspected to affect water availability, while declining dry-season precipitation will lead to flooding, seawater intrusion, and the destruction of coastal mangroves.

Due to unsustainable land use for plantations and paper products, Indonesia – whose peatlands store 35 billion tons of carbon – is the third largest emitter of greenhouse gases globally.<sup>28</sup> Indonesia released 6.6 billion tons of CO<sup>2</sup> from 1950-2007 and 1.9 billion tons per capita in 2009.<sup>29</sup> While these figures are substantially lower than those of the United States (17.2 billion tons per capita) and China (5.3 billion tons per capita), the top two GHG emitters, 75 percent of Indonesia’s emissions come from deforestation alone.<sup>30</sup> “The World Bank calculates that “an area the size of a football field is cleared” globally “every two seconds.”<sup>31</sup> While the adverse impacts of deforestation are widely recognized, until the present time, Asia Pulp and Paper practiced such methods for decades.

#### 3.1 Asia Pulp and Paper’s Environmental Impacts

Paper production is a complex process with multiple opportunities for environmental and social degradation. The main steps for papermaking include raw material production, raw material storage,

#### **REDD/REDD+:**

Reducing Emissions from Deforestation and Forest Degradation (REDD) is an international policy mechanism designed to give developing nations such as Indonesia financial incentives not to deforest. REDD+ is a separate but related mechanism which goes beyond deforestation to include conservation and sustainable forest management.

Benefits flow from industrialized countries to developing countries with the aim of altering incentives. This creates barriers to harmful investment and develops more opportunities for good practices, including the sustainability of local livelihoods, biodiversity conservation, and security from decreased GHG emissions.

Indonesia’s REDD program is in the final stages but is presently unable to continue without additional funding from developed countries. There are many incentives for foreign investors to development clean investment in this area and do good things.

<sup>28</sup> Greenpeace, “Indonesia,” Greenpeace International, accessed February 28, 2013, <http://www.greenpeace.org/international/en/campaigns/forests/asia-pacific/>.

<sup>29</sup> World Bank, “Data,” World Bank, accessed February 28, 2013, [data.worldbank.org](http://data.worldbank.org).

<sup>30</sup> Council on Foreign Relations, accessed April 4, 2013, [www.cfr.org](http://www.cfr.org).

<sup>31</sup> Environmental Investigation Agency, “Appetite for Destruction: China’s Trade in Illegal Timber,” Environmental Investigation Agency, last modified in 2012, accessed February 28, 2013, <http://www.eia-global.org/PDF/EIA-Appetite-for-Destruction-lo-res.pdf>, 2.

pulping (mechanical, chemical, or chemi-mechanical), bleaching, paper-making, and transport. Within each of these steps, companies use abrasive chemicals, which pose threats to handlers and the environment, and substantial fuel, which causes pollution including GHG emissions.

Trade – and the corresponding market demand for wood products – is a major driver in deforestation and the significant loss of forest cover in Indonesia. Export-oriented illegal logging has been acknowledged by international leaders, including the G-8. Investors and corporations must be cautious, as there is a lack of reliable trade data for illegal goods.<sup>32</sup>

Indah Kiat Perawant is APP's largest pulp mill in Indonesia. The mill sells its pulp to APP paper mills in Indonesia and China. Currently, its combined capacity in Indonesia is approximately 7 million tons per year. Asia Pulp and Paper's leadership did not ask questions about their wood supply in the once-unregulated global timber industry, resulting in severe repercussions for endangered species, the global climate, and the company.

### 3.1.1 Endangered Species

Fragmentation and loss of forest cover in Indonesia's rainforests pose major threats to biological diversity and unique species that rely on forest habitats for survival. The island of Sumatra hosts a number of critically endangered species. The Sumatran tiger is a subspecies of tiger with "fewer than 400 individuals in the wild;" its endangerment is attributable to deforestation.<sup>33</sup> The Sumatran orangutan, the only great ape outside of Africa, is losing its habitat to agricultural settlements and illegal logging. The Sumatran elephant, which requires a large amount of space to survive and raise its young, is endangered because of habitat loss and fragmentation for commercial plantations. The World Wildlife Fund claims "the elephant population is disappearing even faster than the forests."<sup>34</sup> Finally, the Sumatran rhinoceros population now numbers less than 300 due to habitat loss, pushing the small rhino to the brink of extinction.

According to *Eyes on the Forest*, since 1984 APP pulped more than 2 million hectares of tropical forests in Sumatra alone.<sup>35</sup> As a result, "its tigers and elephants [are pushed] into deadly conflicts with people and in some cases local extinctions have activated civil society campaigns globally."<sup>36</sup>

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<sup>32</sup> Environmental Investigation Agency, "No Questions Asked: The Impacts of U.S. Market Demand for Illegal Timber – and the Potential for Change," Environmental Investigation Agency, last modified in 2007, accessed February 26, 2013, <http://www.eia-global.org/PDF/report-NQA-forests-oct07.pdf>, 3.

<sup>33</sup> "Sumatran Tiger," World Wildlife Fund Indonesia, accessed January 19 2013, [http://www.wwf.or.id/en/about\\_wwf/whatwedo/forest\\_species/species/sumatran\\_tiger](http://www.wwf.or.id/en/about_wwf/whatwedo/forest_species/species/sumatran_tiger).

<sup>34</sup> "Sumatran Tiger," World Wildlife Fund Indonesia, accessed January 19 2013, [http://www.wwf.or.id/en/about\\_wwf/whatwedo/forest\\_species/species/sumatran\\_tiger](http://www.wwf.or.id/en/about_wwf/whatwedo/forest_species/species/sumatran_tiger).

<sup>35</sup> Abetnego Tarigan et al, "Open Letter to Financial Institutions," Friends of the Earth Indonesia, last modified in 2012, accessed May 3, 2013, <http://www.rainforest-rescue.org/news/4757/open-letter-to-financial-institutions-on-pulp-investment>, 1.

<sup>36</sup> Abetnego Tarigan et al, "Open Letter to Financial Institutions," Friends of the Earth Indonesia, last modified in 2012, accessed May 3, 2013, <http://www.rainforest-rescue.org/news/4757/open-letter-to-financial-institutions-on-pulp-investment>, 1.

### 3.1.2 Climate Change

Indonesia is extremely susceptible to climate change because of its geography, topography, and climate. Cutting down trees reduces carbon sequestration through plant growth, and it releases stored carbon into the atmosphere in cases where clearing involves burning the forest cover.

A second important link between deforestation and climate change, in Indonesia's case, is the drainage of peat soils and deforestation of peatlands (wetlands).<sup>37</sup> Carbon stored in peatlands is mostly contained in the saturated peat soil, which has sequestered carbon for over a millennium and contains nearly four times as much carbon per hectare as other ecosystems.<sup>38</sup> As the water from wetlands is drained for forestry, the carbon is suddenly exposed to air and starts to decompose into carbon dioxide, thus increasing carbon emissions. The result is a suspected overall increase in natural disasters, health risks, and biodiversity loss.

As the largest producer of paper and pulp products in Asia outside of Japan, APP attracts a significant amount of international finance. Nevertheless, Asia Pulp and Paper policies have repeatedly been identified as "failing to prevent ramin logs [from] illegally entering any part of its supply chain."<sup>39</sup> In Indonesia, the logging of high conservation value areas with unique species such as ramin is illegal. The ramin is a tree species found in Indonesia's peat swamps and is listed in the United Nations Convention on the International Trade in Endangered Species (CITES), an agreement created to protect threatened wildlife from overexploitation.

The Indonesian government failed to cut off the flow of illegal wood due to consumer demand. Illegal sourcing of valuable ramin degrades Indonesian ecosystems, endangers biodiversity, and results in large emissions of GHG. In the 1990s, companies such as APP were not held accountable for illegal logging due to a lack of enforceable policy. "Despite APP's praise for the independent mapping of the high conservation value forest...[Forest Rescue Network Raiu's] analysis of...satellite imagery shows a third of the identified 34,000 hectares [of value forest was] drained and cleared."<sup>40</sup> Illegal logging thrived in Indonesia as a result of weak transparency, poor law enforcement, and forest governance, issues common in developing countries that depend on natural resources for economic development. In states with a weak legal framework or enforcement mechanism, it is the responsibility of the company to exhibit higher standards of compliance, not manipulate or become complacent with the status quo.

### 3.2 Asia Pulp and Paper's Social Impacts

In addition to playing a vital role in mitigating carbon emissions and protecting wildlife, forests support and shelter numerous human communities that rely on their resources. "In Sumatra, local communities

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<sup>37</sup> Abetnego Tarigan et al, "Open Letter to Financial Institutions," Friends of the Earth Indonesia, last modified in 2012, accessed May 3, 2013, <http://www.rainforest-rescue.org/news/4757/open-letter-to-financial-institutions-on-pulp-investment>, 1.

<sup>38</sup> "Carbon Emissions from Peatlands," Wetlands International, last modified in 2012, accessed February 4, 2013, <http://www.wetlands.org/Whatarewetlands/Peatlands/Carbonemissionsfrompeatlands/tabid/2738/Default.aspx>.

<sup>39</sup> "Asia Pulp and Paper under Investigation: The Ramin Paper Trail," Greenpeace International, last modified 2012, accessed on May 3, 2013, <http://www.greenpeace.org/international/en/publications/Campaign-reports/Forests-Reports/The-Ramin-Paper-Trail>, 9.

<sup>40</sup> "Ongoing Deforestation Puts APP In Breach of Debt Restructuring Agreements, Finds Report," *Mongabay*, accessed March 9, 2013, [http://news.mongabay.com/2012/0327-app\\_debt\\_deal\\_breach.html](http://news.mongabay.com/2012/0327-app_debt_deal_breach.html).

manage about 4 million hectares of forest using various agroforestry practices which combine natural forest management and fruit gardens, without external aid.”<sup>41</sup> To communities dependent on the forests, the trees not only represent economic security, but also reflect cultural values. Rural Indonesians rely on agriculture for both commercial and household purposes.

Unfortunately, the majority of forest dwellers do not have official certificates of land ownership due to poor governance during Suharto’s dictatorship. “President Suharto ignored indigenous rights and exercised control over Indonesia’s vast, profitable forest lands.”<sup>42</sup> Suharto allowed for the rapid expansion of the forestry industry for personal gain and political power. The impacts of such government policies on local communities tend to be the opposite of what they claim to be designed for: poverty alleviation. The Indonesian government passed the Public Information Disclosure Act in 2008 to “increase the Indonesian public’s access to information regarding the functions and activities of the Indonesian [g]overnment,” limiting the probability of similar conflicts.<sup>43</sup>

Loss of forest cover and increased annual floods coupled with a lack of company mitigation efforts over the past decade – stakeholder engagement, public participation, and just compensation to affected communities – resulted in significant economic losses, stressing existing social inequalities and tensions. For example, “in Riau Province, Sumatra, [APP] is responsible for the impoverishment and economic degradation of the Sakai community, one of the indigenous groups in the province.”<sup>44</sup> The Sakai and Malay indigenous groups live in the Mandiangin Village, Minas Sub-district, Siak District, which was one of many receiving villages during the HTI Transmigration Programme (see “Indonesian Transmigration Initiative” side bar). This village was originally 36,000 ha but now only contains around 5,000 ha due to the selling of customary lands, aggravating tensions through land degradation and close accommodations.<sup>45</sup>

## 4. Response

### 4.1 International Response

On November 6, 2012, 60 non-governmental organizations (NGOs) wrote an open letter to financial institutions, pleading with them not to fund investments in Indonesia related to Asia Pulp and Paper or the Sinar Mas Group. “This is not a business model that should be financed by any prudent financial

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<sup>41</sup> Rivani Noor and Rully Syumanda, “Social Conflict and Environmental Disaster: A Report on Asia Pulp and Paper’s Operations in Sumatra, Indonesia,” World Rainforest Movement, accessed April 26, 2013, <http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/indonesiasocconflictwrmaug06eng.pdf>, 9.

<sup>42</sup> Rivani Noor and Rully Syumanda, “Social Conflict and Environmental Disaster: A Report on Asia Pulp and Paper’s Operations in Sumatra, Indonesia,” World Rainforest Movement, accessed April 26, 2013, <http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/indonesiasocconflictwrmaug06eng.pdf>, 10.

<sup>43</sup> Florence Daviet and Gaia Larsen, “Safeguarding Forests and People,” World Resources Institute, accessed on May 3, 2013, [http://pdf.wri.org/safeguarding\\_forests\\_and\\_people.pdf](http://pdf.wri.org/safeguarding_forests_and_people.pdf), 39.

<sup>44</sup> Rivani Noor and Rully Syumanda, “Social Conflict and Environmental Disaster: A Report on Asia Pulp and Paper’s Operations in Sumatra, Indonesia,” World Rainforest Movement, accessed April 26, 2013, <http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/indonesiasocconflictwrmaug06eng.pdf>, 7.

<sup>45</sup> Rivani Noor and Rully Syumanda, “Social Conflict and Environmental Disaster: A Report on Asia Pulp and Paper’s Operations in Sumatra, Indonesia,” World Rainforest Movement, accessed April 26, 2013, <http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/indonesiasocconflictwrmaug06eng.pdf>, 40.



institution or investor for replication in Borneo, Papua or anywhere else.”<sup>46</sup> The organizations expressed concern over a potential pulp milling plant in Sumatra, which is expected to produce “between 1.5 and 2 million tons per year.”<sup>47</sup> NGOs opposed the plant over expected negative effects on indigenous groups and endangered Sumatran species including the Sumatran tiger and rhino. “Our concern is the environmental and social consequences of the massive destruction of natural forests that can be shown to be linked to past and current over-capacity in pulp milling plants in Indonesia.”<sup>48</sup>

Based upon Asia Pulp and Paper’s past behavior, the organizations argue APP cannot be trusted: projects in Indonesia exhibit no safeguards, do not enforce legal rules, and are associated with high risk. “This is a company that defaulted on its debts and defaulted on the environmental covenants it agreed to as a condition of restructuring its debts. Any support to its plans to expand risks history repeating itself.”<sup>49</sup>

#### 4.1.1 International Policy: the Lacey Act

As a direct result of NGO campaigns to raise awareness of deforestation due to illegal logging activities, the United States Congress passed the U.S. Lacey Act in May 2008. The new law prohibits all trade of plants and plant products illegally sourced from the U.S. or any foreign country.

The Lacey Act shows U.S. support for foreign nations’ domestic efforts to sustainably govern their own natural resources. The Lacey Act requires declaration of all of the plant species contained in imported products and the country of origin before entering U.S. borders. The United States is currently one of the three largest consumers of illegal timber and timber products, along with the European Union and China. Therefore, this law creates powerful incentives for companies to adjust policies in order to remain competitive within a primary market. The Lacey Act also discourages illegally traded timber and wood products through establishing enforceable penalties including fines and even jail time.<sup>50</sup>

The first set of major public investigations for the Lacey Act was against Gibson Guitars, a U.S.-based company relying on illegal wood and ebony products from Madagascar and India. In August 2012, the company was prosecuted and found to have participated in criminal activity under the Lacey Act. The Department of Justice and Gibson Guitar agreed the company would be put on an 18-month probation; pay a \$300,000 penalty; donate \$50,000 to the National Fish and Wildlife Foundation to promote conservation; implement a compliance program; and relinquish the illegal wood, valued at \$261,844, to the U.S. government.<sup>51</sup>

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<sup>46</sup> “Ongoing Deforestation Puts APP In Breach of Debt Restructuring Agreements, Finds Report,” *Mongabay*, accessed March 9, 2013, [http://news.mongabay.com/2012/0327-app\\_debt\\_deal\\_breach.html](http://news.mongabay.com/2012/0327-app_debt_deal_breach.html).

<sup>47</sup> Abetnego Tarigan et al, “Open Letter to Financial Institutions,” Friends of the Earth Indonesia, last modified in 2012, accessed May 3, 2013, <http://www.rainforest-rescue.org/news/4757/open-letter-to-financial-institutions-on-pulp-investment>, 1.

<sup>48</sup> Abetnego Tarigan et al, “Open Letter to Financial Institutions,” Friends of the Earth Indonesia, last modified in 2012, accessed May 3, 2013, <http://www.rainforest-rescue.org/news/4757/open-letter-to-financial-institutions-on-pulp-investment>, 1.

<sup>49</sup> “Ongoing Deforestation Puts APP In Breach of Debt Restructuring Agreements, Finds Report,” *Mongabay*, accessed March 9, 2013, [http://news.mongabay.com/2012/0327-app\\_debt\\_deal\\_breach.html](http://news.mongabay.com/2012/0327-app_debt_deal_breach.html).

<sup>50</sup> Environmental Investigation Agency, “The U.S. Lacey Act,” last modified in 2007, accessed February 23, 2013, <http://www.eia-global.org/lacey/P6.EIA.LaceyReport.pdf>.

<sup>51</sup> U.S. Department of Justice, United States Attorney Office, Middle District of Tennessee, *Gibson Guitar Corporation Agreement*, July 27, 2012, Nashville, Tennessee: 3.

The United States Congress and U.S. industries recognized the devastating impacts of illegal logging on several fronts: employment losses from unfair competition, environmental consequences from carbon emissions, and damage to the host country's livelihoods and sovereignty. It is estimated that "illegal logging costs [the U.S.] timber and wood products industry...approximately \$1 billion per year."<sup>52</sup> Since 2008, illegal logging has declined by at least 25 percent worldwide "with reductions as high as 50-70 percent in some key countries."<sup>53</sup> The combination of government regulations, pressure from international organizations, the changing importance of corporate social responsibility (CSR) to investors, and the 2008 global recession has "prevented over one billion tons of carbon dioxide emissions" over the past decade.<sup>54</sup>

## 4.2 Asia Pulp and Paper Response

According to the Environmental Investigation Agency, an independent investigative organization committed to transparency, "a report on 'peak timber' shows production is in decline due to over-exploitation in a host of countries in the [Asia-Pacific], notably Indonesia."<sup>55</sup> Shortly after this report, in February 2013, Asia Pulp and Paper announced that The Forest Trust, an independent third party, would perform High Carbon Stock assessments of all forest areas in Indonesia to ensure future plantation development is environmentally and socially sustainable.<sup>56</sup> In addition, APP released a 2020 Sustainability Roadmap to "[chart] a course to world-class industry standards in sustainable business."<sup>57</sup> While these initiatives are an important step forward, APP has not yet released High Carbon Stock assessments or Environmental Impact Assessments (EIA) associated with the roadmap. APP is trying to improve its material procurement process, but it is unclear whether this will also lead to an improvement in the standards of new mills and other important components.

## 5. Analysis

### 5.1 Asia Pulp and Paper Performance

#### 5.1.1 Non-transparent Assessments and Data

Papermaking activities can be split into three groups of activity for an EIA: raw materials, plant processes, and transportation. Asia Pulp and Paper claims to have conducted socio-economic and

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<sup>52</sup> 350.org et al., "Please Oppose H.R. 3210 (the RELIEF Act), H.R. 4171 (The FOCUS Act), the Fleming Amendment to H.R. 3210 and Other Amendments that Weaken and Undermine the Lacey Act," last modified in 2012, accessed May 3, 2013, <http://switchboard.nrdc.org/blogs/jschmidt/Don't%20Weaken%20Lacey%20June%202012.pdf>, 1.

<sup>53</sup> 350.org et al., "Please Oppose H.R. 3210 (the RELIEF Act), H.R. 4171 (The FOCUS Act), the Fleming Amendment to H.R. 3210 and Other Amendments that Weaken and Undermine the Lacey Act," last modified in 2012, accessed May 3, 2013, <http://switchboard.nrdc.org/blogs/jschmidt/Don't%20Weaken%20Lacey%20June%202012.pdf>, 1.

<sup>54</sup> Environmental Investigation Agency, "Appetite for Destruction: China's Trade in Illegal Timber," Environmental Investigation Agency, last modified in 2012, accessed February 28, 2013, <http://www.eia-global.org/PDF/EIA-Appetite-for-Destruction-lo-res.pdf>, 2.

<sup>55</sup> Environmental Investigation Agency, "Appetite for Destruction: China's Trade in Illegal Timber," Environmental Investigation Agency, last modified in 2012, accessed February 28, 2013, <http://www.eia-global.org/PDF/EIA-Appetite-for-Destruction-lo-res.pdf>, 9.

<sup>56</sup> "Asia Pulp and Paper Group (APP) Commits to an Immediate Halt to All Natural Forest Clearance," Rainforest Realities, last modified in February 2013, accessed February 16, 2013, <http://www.rainforestrealities.com/newsroom/press-releases/app-commits-to-an-immediate-halt-to-all-natural-forest-clearance/>.

<sup>57</sup> "Asia Pulp and Paper Group (APP) Charts a Course to World-class Industry Standards in Sustainable Business," Rainforest Realities, last modified in 2012, accessed February 16, 2013, <http://www.rainforestrealities.com/newsroom/press-releases/asia-pulp-paper-group-app-charts-a-course-to-world-class-industry-standards-in-sustainable-business/>.

environmental impact assessments following these basic standards. However, past assessments are either unavailable to the public or extremely difficult to locate in APP databases.

APP's February 2013 commitment to sustainable pulp practices promises better access to these materials and a greater emphasis on participatory operations. The company committed to 100 percent plantation reliance by 2015, which, due to Indonesian regulations, is more cost effective and better for the environment than timber extraction from standing forests.<sup>58</sup> Plantations are only permitted on wasteland or degraded forests – although the measurement for degradation is unclear – and the Indonesian government charges additional fees for mixed tropical wood, which disincentivizes cutting natural forest cover. According to APP metrics, the company is four percent ahead of its plantation fiber use targets as of 2012.

### 5.1.2 Environmental Greenwash

Asia Pulp and Paper continued to receive international funding and attract high-caliber clientele after the 1997 Asian Financial Crisis due to what the NGO community calls environmental “greenwashing.” The company promoted environmentally sustainable and equitable policies and projects internationally. Nevertheless, in some cases there was no implementation at all. In others, APP turned out to merely comply with Indonesian law. While it is notable that the company went to lengths to understand their legal obligations to deliver social and environmentally sensitive policies, Indonesian laws—and enforcement of said laws—were relatively weak during the case period. Rather than remain complacent with the status quo, it was the responsibility of APP to exceed its legal obligations in Indonesia in order to meet international best standards.

The Asia Pulp and Paper website sports chirping birds, lush, green forests, and the slogan “Care for Tomorrow: We support actions for economic, social, and environment sustainability.” As of May 2013, the most recent press release on the website is dated November of 2008. There is no press release regarding the three APP wood suppliers currently under examination for liability suits for environmental damages by Indonesia's Ministry of the Environment.<sup>59</sup> On the other hand, the “environment news” section is updated regularly. This includes a Rainforest Realities Blog, an “open dialogue” that updates inquirers on the status of Indonesia's rainforests. APP places heavy emphasis on environmentally positive actions in the blog, yet provides no concrete information on ground operations in Indonesia. The “open dialogue” is a small comments section at the end of each article, for which readers must register in order to participate.

A lack of available information from APP steered environmental groups such as the Environmental Investigation Agency and Eyes on the Forest (a coalition of WWF, Forest Rescue Network Riau and Friends of the Earth Indonesia) to conduct their own assessments and investigations on the ground. Greenomics, in a 2012 report, showed that APP's claim to be preserving 200,000 ha of “natural forest” was misleading. Asia Pulp and Paper “acknowledged that part of the area covered by the moratorium on

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<sup>58</sup> “APP Sustainability Roadmap – Vision 2020: First Quarterly Report,” Asia Pulp and Paper Group, last modified in 2012, accessed May 3, 2013, [http://www.asiapulppaper.com/portal/APP\\_Portal.nsf/Web-MenuPage/BBDE2BBF8E9BC0A647257B0C0034E51C/\\$FILE/ENGLISH%20-%20APP%20Sustainability%20Roadmap%20Progress%20Report%20Q2.pdf](http://www.asiapulppaper.com/portal/APP_Portal.nsf/Web-MenuPage/BBDE2BBF8E9BC0A647257B0C0034E51C/$FILE/ENGLISH%20-%20APP%20Sustainability%20Roadmap%20Progress%20Report%20Q2.pdf).

<sup>59</sup> Abetnego Tarigan et al, “Open Letter to Financial Institutions,” Friends of the Earth Indonesia, last modified in 2012, accessed May 3, 2013, <http://www.rainforest-rescue.org/news/4757/open-letter-to-financial-institutions-on-pulp-investment>, 2.

natural forest clearance was in fact scrubland, agriculture land or land affected by conflicts with local communities or third parties,” not natural rainforest.<sup>60</sup> A report from Eyes on the Forest discovered that “Asia Pulp and Paper [broke] legally binding debt restricting agreements by continuing to clear native forests in Sumatra” in March 2012.<sup>61</sup>

## 5.2 Impacts on Asia Pulp and Paper

### 5.2.1 Financial Impacts on Asia Pulp and Paper

Investigations in Yunnan Province, Sumatra, and multiple locations in Cambodia resulted in serious repercussions for APP after 2005. While these actions have not affected APP’s bottom line, a number of international campaigns against the company’s poor environmental and social practices steered large customers to suspend services with APP (see Appendix 1). Aid Greenbury, APP’s Managing Director of Sustainability, admits “the loss [APP suffers]...is linked to the image, the perception about APP. If you want to be recognized as a true global leader, we don't want any image of forest destruction or deforestation attached to us.”<sup>62</sup> Companies including Disney, Hasbro, Mattel, Walmart, Xerox, and Yum! (KFC) severed ties with Asia Pulp and Paper due to aggressive civil society campaigns. In 2012, Disney, Mattel, and Yum! combined accounted for \$62 billion in revenues. That same year, Walmart, one of APP’s largest and most influential customers, made \$444 billion in sales alone. “The [Greenpeace] campaign against APP has cost the paper giant tens of millions of dollars in lost business since 2009.”<sup>63</sup>

APP not only lost access to major players in the Western market – the principal consumers of timber products – but granted their competitors access to those sales. In addition, the campaigns against high social and environmental risk investments caused a ripple effect. When big name companies like Disney and Walmart suspend services in exchange for less risky providers, it affects the entire industry. Smaller companies must follow the trend in order to remain competitive in the market and not risk financial or reputational losses.

### 5.2.2 Reputational Impacts on Asia Pulp and Paper

Asia Pulp and Paper committed a series of poor practices that permanently damaged its reputation. Not only were the company’s endeavors illegal, environmentally harmful, and socially unjust; but Asia Pulp and Paper did not exhibit a strong public affairs mechanism to mitigate the consequences when it mattered, further affecting revenue. The mission of public affairs is to establish legitimacy and a “license to operate” within a country. This function, if performed correctly, gives an organization the permission of its stakeholders to pursue economic benefits while continuing the organization’s internal objectives. APP realized this too late.

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<sup>60</sup> “Why the Indonesian Ministry of Forestry Recommends that Asia Pulp and Paper Revise its ‘APP Sustainability Roadmap 2020 and Beyond,’” Greenomics Indonesia, accessed May 3, 2013, [http://www.greenomics.org/docs/Report\\_201210\\_Greenomics\\_MOF\\_Recommendation\\_to\\_APP.pdf](http://www.greenomics.org/docs/Report_201210_Greenomics_MOF_Recommendation_to_APP.pdf), 11.

<sup>61</sup> “Ongoing Deforestation Puts APP In Breach of Debt Restructuring Agreements, Finds Report,” *Mongabay*, accessed March 9, 2013, [http://news.mongabay.com/2012/0327-app\\_debt\\_deal\\_breach.html](http://news.mongabay.com/2012/0327-app_debt_deal_breach.html).

<sup>62</sup> Kate Sheppard, “Paper Giant Pledges to Leave the Poor Rainforest Rain Forrest Alone. Finally,” *Mother Jones*, accessed April 4, 2013, <http://www.motherjones.com/environment/2013/02/asia-pulp-paper-greenpeace-indonesia-rainforest>.

<sup>63</sup> “Conservation News and Environmental Science News,” *Mongabay*, accessed March 9, 2013, [www.news.mongabay.com](http://www.news.mongabay.com).

Before the Asian Financial Crisis erupted in 1997, Asia Pulp and Paper failed to establish strong relations with stakeholders who could make or break the firm's reputation. The company's leadership considered informal relationships between key policy makers and investors substantial to fostering and raising the levels of investment in the company. However, during times of crisis, accountability and social responsibility can be just as important to a firm as reputation and profitability. After the financial crisis, APP failed to adapt to its changing surroundings, in which increased expectations about corporate social responsibility led to greater civil society scrutiny and the empowerment of local stakeholders. Public affairs is essential to all organizations as the result of growing linkages between domestic and international audiences, enabled by new technologies; engaged, educated stakeholders; and globalization.

Asia Pulp and Paper has since announced plans for more open and engaged stakeholder consultation. The 2013 APP Forest Conservation Policy promises the informed consent of local groups and indigenous communities, open stakeholder dialogue, and human rights mechanisms.<sup>64</sup> Which groups APP will allow a seat at the table on current and future mill implementation is unclear, but APP must "actively seek to incorporate input and feedback from a wide range of stakeholders, including civil society...in order to avoid and resolve social conflicts across its supply chain."<sup>65</sup> It is too early to tell how this will affect the company's reputation in the long run, but civil society is cautiously optimistic. In Jakarta, immediately after the February 5 announcement, WWF Conservation Director Nazir Foad publicized that the "WWF hopes that APP's new commitments will do more than just stop its own bulldozers, including protecting the natural forests in its concessions from all illegal activities and mitigating the long-term negative impacts its practices have had on all the peatlands, forests, biodiversity and local people in Sumatra and Borneo for which these commitments have come too late."<sup>66</sup>

## 6. Conclusion and Recommendations

Mr. Teguh Ganda Wijaya, Chairman of the APP Group, in a 2013 press release said, "APP is a world leader in the pulp and paper business, and we will act as leaders are expected to do."<sup>67</sup> This drastic shift in an industry leader's policies is expected to have a trickledown effect, forcing competitors to adopt similar best practices in order to remain competitive in the market. On April 10, 2013, International Paper, the world's largest paper maker, agreed to partner with Dogwood Alliance, a U.S.-based sustainable forestry advocacy group, to identify and protect high conservation forests in the southern United States.<sup>68</sup> While Asia Pulp and Paper is one of the first pulp companies to make environmental performance part of its core business strategy, its initial reputation is tainted by poor regulation,

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<sup>64</sup> "APP's Forest Conservation Policy," Rainforest Realities, modified in 2013, accessed February 16, 2013, <http://www.rainforestrealities.com/newsroom/press-releases/approadmap-forestpolicy/>.

<sup>65</sup> "APP's Forest Conservation Policy," Rainforest Realities, modified in 2013, accessed February 16, 2013, <http://www.rainforestrealities.com/newsroom/press-releases/approadmap-forestpolicy/>.

<sup>66</sup> "WWF Welcomes APP Announcement to Halt Clearing, Urges Paper Buyers to Wait for Proof," World Wildlife Fund Global, accessed April 4, 2013, <http://wwf.panda.org/?207497/WWF-Welcomes-APP-Announcement-to-Halt-Clearing-Urges-Paper-Buyers-to-Wait-for-Proof>.

<sup>67</sup> "Asia Pulp and Paper Group (APP) Commits to an Immediate Halt to All Natural Forest Clearance," Rainforest Realities, modified in February 2013, accessed February 16, 2013, <http://www.rainforestrealities.com/newsroom/press-releases/app-commits-to-an-immediate-halt-to-all-natural-forest-clearance/>.

<sup>68</sup> Jeremy Hance, "International Paper Commits to Working with Longtime Foe to Protect Endangered Forests," *Mongabay*, accessed April 12, 2013, <http://news.mongabay.com/2013/0410-hance-ip-dogwood.html>.

greenwashing, and corruption connected to Suharto's New Order Regime and is unlikely to see drastic improvement in the near future.

With the decline of Suharto's regime in the 1990s and international exposure of APP finances in the course of the 1997 Asian Financial Crisis, Asia Pulp and Paper was forced to take several steps: the company hired a U.S. public relations firm; created its first Sustainability Road Map to 2020 Quarterly Update; ceased production on 6.4 million acres of projects in Indonesia (see Appendix II) to "support the Government of Indonesia's low emissions development goal and its target to reduce greenhouse gas emissions;"<sup>69</sup> and hired the Forest Trust, a non-profit that works with companies to establish sustainable policies, to independently monitor its operations.

While APP created a loophole which states the company's mills will accept trees felled before January 31, 2013, it seems that after 30 years of controversy and serious financial allegations following the 1997 Asian Financial Crisis, APP comprehends that image matters.<sup>70</sup> Greenpeace's Bustar Maitar notes, "APP is really seeing that pressure from the market. They have to do forest protection in Indonesia."<sup>71</sup> Likewise, APP acknowledges that accountability and social responsibility affect image at least as much as profitability internationally. APP Managing Director of Sustainability Aid Greenbury told *Mother Jones* in an interview that international campaigns affected the organization's reputation: "Truthfully it's not only about environmental and social sustainability, it's also about economic sustainability as well. We need work with stakeholders not only in Indonesia but beyond, because we want to make sure that we don't have a lost opportunity in the future to expand our market."<sup>72</sup>

In November 2012, APP announced the hiring Stuart Eizenstat of Convington and Burling, a U.S. law firm, to promote and cultivate APP's green image. Eizenstat has a long history of involvement in sustainability and forestry issues. He led the U.S. delegation for the Kyoto Protocol and was Deputy Secretary of the Treasury in the Clinton Administration.<sup>73</sup> In an interview with *Mongabay*, Eizenstat stated "there seems to be an abundance of misinformation and confusion over the economic, environmental, and social issues surrounding Indonesia and companies like APP who are based there."<sup>74</sup> The Widjaja family fashioned a provocative image of APP government corruption and unmitigated harm in Indonesia. It is clear that Eizenstat's tactics, if his previous work is any indication, will affect the outlook of the Western international community on the family and their operations.

Nevertheless, it is unclear what effect APP's new policies and techniques will have on deforestation in Indonesia in the long term. Improving corporate accountability and technology could mean a new future for Indonesia, Asia Pulp and Paper, and the Widjaja family. But how long will the image of a green paper

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<sup>69</sup> "APP's Forest Conservation Policy," Rainforest Realities, modified in 2013, accessed February 16, 2013, <http://www.rainforestrealities.com/newsroom/press-releases/approadmap-forestpolicy/>.

<sup>70</sup> "WWF Welcomes APP Announcement to Halt Clearing, Urges Paper Buyers to Wait for Proof," World Wildlife Fund Global, accessed April 4, 2013, <http://wwf.panda.org/?207497/WWF-Welcomes-APP-Announcement-to-Halt-Clearing-Urges-Paper-Buyers-to-Wait-for-Proof>.

<sup>71</sup> Kate Sheppard, "Paper Giant Pledges to Leave the Poor Rainforest Rain Forrest Alone. Finally," *Mother Jones*, accessed April 4, 2013, <http://www.motherjones.com/environment/2013/02/asia-pulp-paper-greenpeace-indonesia-rainforest>.

<sup>72</sup> Kate Sheppard, "Paper Giant Pledges to Leave the Poor Rainforest Rain Forrest Alone. Finally," *Mother Jones*, accessed April 4, 2013, <http://www.motherjones.com/environment/2013/02/asia-pulp-paper-greenpeace-indonesia-rainforest>.

<sup>73</sup> Rhett A. Butler, "Asia Pulp and Paper Hires Top U.S. Lobbyist to Help 'Green' its Image," *Mongabay*, accessed February 16, 2013, <http://news.mongabay.com/2012/1205-app-lobbying-eizenstat.html>.

<sup>74</sup> Rhett A. Butler, "Asia Pulp and Paper Hires Top U.S. Lobbyist to Help 'Green' its Image," *Mongabay*, accessed February 16, 2013, <http://news.mongabay.com/2012/1205-app-lobbying-eizenstat.html>.

company hold if it is unaccompanied by real action, not just short-term production freezes? And will those same tactics, which presume a “developed democratic political culture supportive of business participation in the policy process,” succeed in Indonesia, China, and Cambodia, where the strongest effects exist?<sup>75</sup>

Developing countries may be unresponsive to non-native or perceived Western messaging. “From a developed country perspective, what is or is not allowed often is viewed in the context of ‘rule of law.’ That context assumes...rule of law is the appropriate starting point in an emerging [country]” and that there is consensus on what ‘rule of law’ means in business.<sup>76</sup> The complexity of actors (governments, civil society, local authorities, populations, and the business community) and APP activities necessitate a host of political and regulatory concerns which, if improperly managed by Eizenstat and his team, increase risk and decrease business opportunities.

## 6.1 Stakeholder Engagement

In order to successfully transform into a leader of sustainable forestry, Asia Pulp and Paper should participate in empowering indigenous and local peoples, initiate effective stakeholder participation with consideration of gender equality, and guarantee transparent information for citizens on APP projects.

Before the Asian Financial Crisis erupted in 1997, Asia Pulp and Paper failed to establish strong relations with stakeholders who could make or break the firm’s reputation. The company’s leadership considered informal relationships between key policy makers and investors substantial to fostering and raising the levels of investment in the company. The Widjaja family did not participate in stakeholder mapping and, therefore, failed to identify potential points of conflict such as land rights and cultural intricacies.

Investors engaging in FDI must always secure free, prior, and informed consent (FPIC) from local stakeholders before pursuing a project with potential negative social and environmental impacts. In addition, it is the responsibility of the company to encourage participation of marginalized groups such as women who may not participate otherwise. If consent is obtained, accountable operations which follow ought to be transparent to affected communities, governments, and civil society members.

To help stakeholders voice their concerns about affected livelihoods, the company must create a thorough, transparent grievance process prior to implementation and ensure just and culturally-sensitive compensation. Local farmers in Indonesia lost access to their lands, which served the dual purpose of supporting their families and fulfilling cultural significance. In many instances, fiscal compensation or resettlement was not viewed as adequate recompense for displacement and loss of livelihood.

During times of crisis, accountability and social responsibility can be just as important to a firm as reputation and profitability. After the financial crisis, APP failed to adapt to its changing surroundings in

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<sup>75</sup> Fruzsina Harsanyi and Susan Schmidt, “Creating a Public Affairs Function in Countries Without a Public Affairs Culture,” *Journal of Public Affairs* (2011): 1, accessed May 3, 2013, DOI: 10.1002/pa.407.

<sup>76</sup> Fruzsina Harsanyi and Susan Schmidt, “Creating a Public Affairs Function in Countries Without a Public Affairs Culture,” *Journal of Public Affairs* (2011): 3, accessed May 3, 2013, DOI: 10.1002/pa.407.

which increased expectations about corporate social responsibility led to greater civil society scrutiny and the empowerment of local stakeholders.

Successful companies must embed public ethical issues into the organization's decision-making processes. Asia Pulp and Paper's lack of corporate transparency, inability to interact with key stakeholders, and blatant disregard for Indonesian laws segregated the company both nationally and internationally. The company ignored a wide variety of important stakeholders, such as indigenous groups and endangered species, because of their seemingly low international importance and, therefore, low risk. The failure to acknowledge mistakes and subsequent complacency led to a revocation of APP's license to operate in Indonesia and other countries around the world.

## 6.2 Brand Management

The mission of public affairs is to establish legitimacy and a "license to operate" within a country. This function, if performed correctly, gives an organization permission from its stakeholders to pursue economic benefits while continuing the organization's internal objectives. Recently, Asia Pulp and Paper has undergone a significant transformation due to external pressure from NGOs, governments, and financial institutions. In addition to these changes, APP and investors engaged in FDI should produce an annual CSR report to reinforce the company's positive achievements in the local and international community. This is increasingly becoming a norm across industries as one method of legitimization and visible company communications.

Unfortunately, it is much easier to create a bad reputation than to build a good one. Competition in the international market pushes a variety of businesses, governments, and NGOs to recognize the competitive advantage of public affairs and lobbying. "The challenges we now face are different. A globalized economy is creating both more hazards and more opportunities...forcing firms to make dramatic improvements not only to compete...but also merely to survive."<sup>77</sup> Global corporations "are implementing green supply chain initiatives, under which they require their suppliers to meet certain...standards," and those who do not meet new expectations risk losing customers and revenue as APP did.<sup>78</sup>

## 6.3 Higher Standards

The initial issues of social and environmental injustice stemmed from weak regulation during Suharto's New Order Regime, during which corruption and discrimination ran rampant. APP's operations and close relationship with the Suharto regime exacerbated widespread human rights violations and environmental ruin as the result of poor governance structures. Unfortunately, in emerging economies, particularly in nations like Indonesia with a history of corruption, private-public partnerships often lead to greater inequalities rather than poverty reduction as promised.

Companies must be wary of host governments and their policies and regulations while respecting the dynamic forces at play in local communities and environments. The easiest way to avoid some of the

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<sup>77</sup> John P. Kotter, *Leading Change* (Boston: Harvard Business School Press, 1996), 18.

<sup>78</sup> Ma Jun, Ray Cheung, Wang Jingjing, and Ruan Qingyuan, "Greening Supply Chains in China: Practical Lessons from China-based Suppliers in Achieving Environmental Performance," World Resources Institute, accessed May 3, 2013, [http://pdf.wri.org/working\\_papers/greening\\_supply\\_chains\\_in\\_china\\_en.pdf](http://pdf.wri.org/working_papers/greening_supply_chains_in_china_en.pdf), 1.



high risks associated with emerging economies and governments is to require a third party Environmental and Social Impact Assessment (ESIA). This ensures the highest quality of standards often compromised by non-objective actors. Not all emerging economies present weak governments or regulatory infrastructure, but it is the responsibility of the company to not fall into complacency and to ensure international standards are met. The company is accountable to itself, its customers, and stakeholders affected by its operations.

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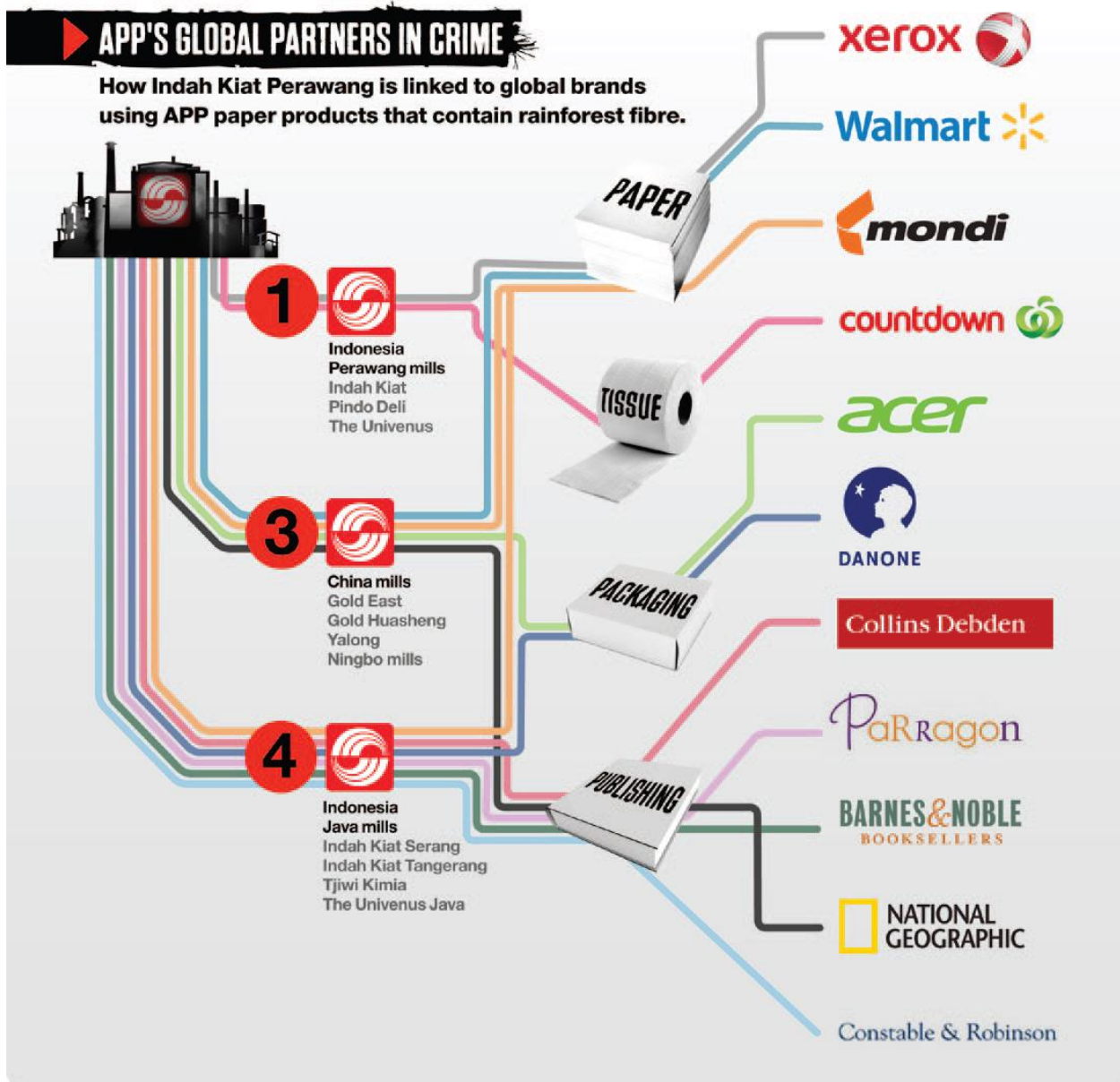
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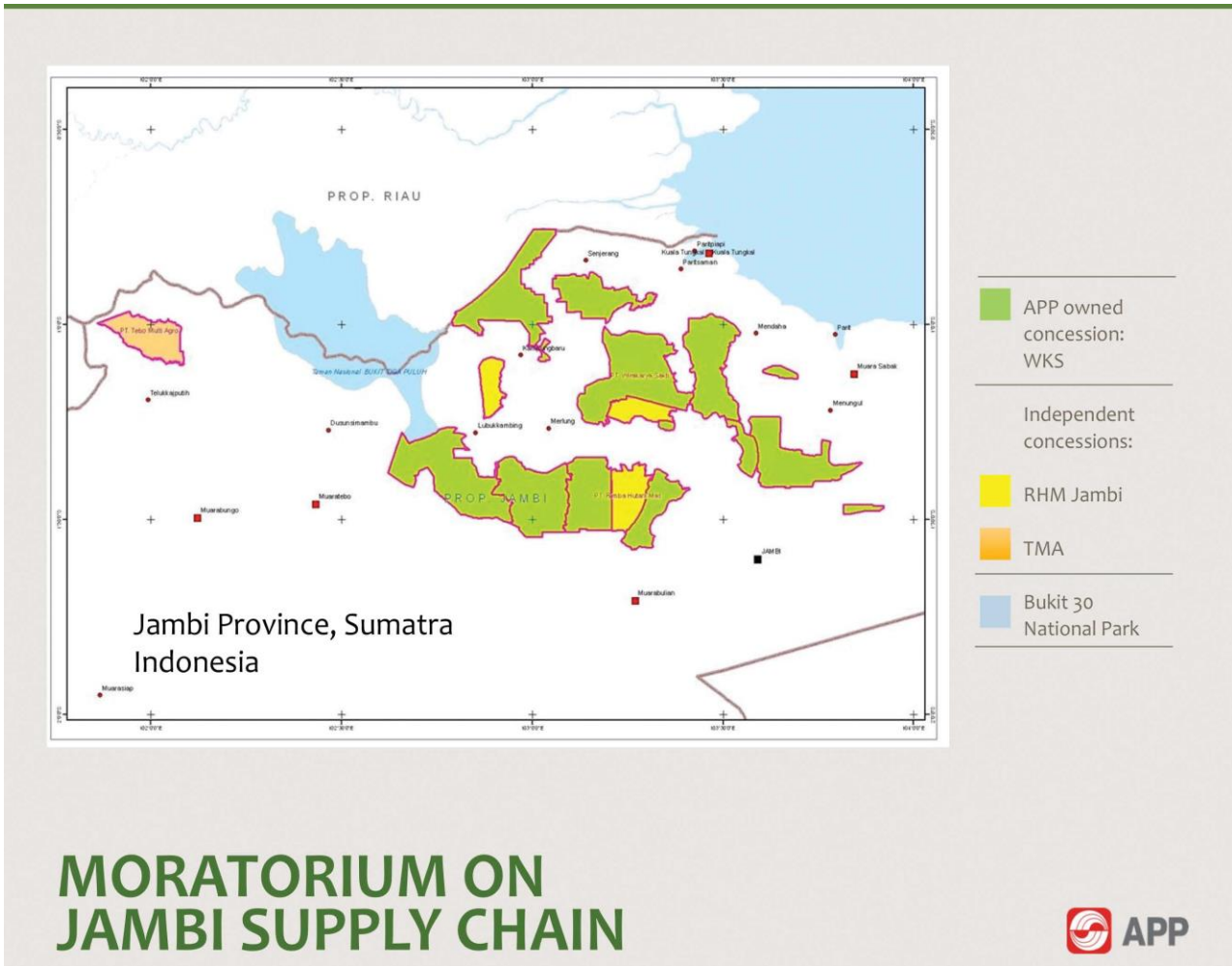
## Appendix

### I. Chain of custody links between global brands, APP products, and the Indah Kiat Perawang mill.



“Asia Pulp and Paper under Investigation: The Ramin Paper Trail,” Greenpeace International, last modified 2012, accessed May 3, 2013, <http://www.greenpeace.org/international/en/publications/Campaign-reports/Forests-Reports/The-Ramin-Paper-Trail/>, 13.

**II. Map of Production freeze in Jambi Province, Sumatra, Indonesia. The freeze will last until the High Carbon Stock Assessment is completed.**



“APP Sustainability Roadmap – Vision 2020: First Quarterly Report,” Asia Pulp and Paper Group, last modified in 2012, accessed on May 3, 2013, [http://www.asiapulppaper.com/portal/APP\\_Portal.nsf/Web-MenuPage/BBDE2BBF8E9BC0A647257B0C0034E51C/\\$FILE/ENGLISH%20-%20APP%20Sustainability%20Roadmap%20Progress%20Report%20Q2.pdf](http://www.asiapulppaper.com/portal/APP_Portal.nsf/Web-MenuPage/BBDE2BBF8E9BC0A647257B0C0034E51C/$FILE/ENGLISH%20-%20APP%20Sustainability%20Roadmap%20Progress%20Report%20Q2.pdf), 2.

# Petroleum Extraction in Conflict Zones

Lundin Petroleum's Operations in Sudan (1997-2003)

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## **Abstract**

Lundin Petroleum, an oil and natural gas multinational, remains under international criminal investigation for possible complicity in human rights violations and war crimes while operating in a conflict zone during Sudan's second civil war. Lundin's failure to respond to international pressure to exit Sudan and to follow international guidelines for environmental and social best practices caused long-term damage to the company's reputation and financial portfolio.



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## Acronyms

CERES	Coalition for Environmentally Responsible Economies
CSR	Corporate Social Responsibility
ECOS	European Coalition on Oil in Sudan
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
GNPOC	Greater Nile Petroleum Operating Company
GoS	Government of Sudan
GoSS	Government of South Sudan
HRW	Human Rights Watch
IPC	International Petroleum Corporations
NGO	Non-governmental Organization
NRC	Natural Resource Charter
SPLM/A	Sudan People's Liberation Movement/Army
SSUM/A	South Sudan Unity Movement/Army
TSX	Toronto Stock Exchange
USD	United States dollar

## 1. Introduction and Background

### 1.1 Summary

Lundin Petroleum, a Swedish petroleum and natural gas company, was granted a concession in 1997 to produce petroleum in Block 5A of Sudan's southern oil fields (today, part of the newly sovereign nation of South Sudan). Lundin had already been operating in Block 5B within Sudan. The company remained involved in Block 5A until the block's sale to Malaysian company Petronas Carigali in 2003 and retained interest in Sudan's Block 5B until leaving the country in 2009.<sup>1</sup> With the exception of French oil and gas company Total SA, Lundin was the only western oil company to continue drilling in Sudan after genocide and war crimes related to the country's longstanding civil conflict were internationally condemned.<sup>2</sup>

In 1997, shortly after Lundin began operations in Sudan, U.S. President Bill Clinton issued an executive order prohibiting the import of Sudanese oil and other goods due to the alarming human rights atrocities, support of terrorism, and the Government of Sudan's aggressive behavior toward neighboring countries in the region.<sup>3</sup> During Lundin's time operating in Block 5A, the company has been accused of knowingly allowing violent conflict to occur within and surrounding Block 5A in order to continue developing oil during Sudan's second civil war. In addition, Lundin has been cited in disrupting and altering the fragile Sudd Wetlands ecosystem.

The international non-governmental organization (NGO) Human Rights Watch (HRW) and the umbrella NGO European Coalition on Oil in the Sudan (ECOS), have released scathing accounts of Lundin's activities, suggesting the company is guilty of indirectly aiding in the displacement and ethnic violence among local communities during war-time. Lundin is currently under international investigation for complicity in "war crimes and crimes against humanity"<sup>4</sup> by the International Prosecution Chamber in Stockholm. However, Lundin denies being aware of any human rights abuses associated with its operations. Allegations and negative publicity have tarnished Lundin's image and have brought into question its corporate responsibility to compensate those potentially and indirectly displaced or harmed by the firm's presence in southern Sudan.

### 1.2 Social Context

Sudan's dynamic history has been dominated by wars over the past half-century, which has created its currently embroiled and controversial investment landscape. Prior to Lundin Oil's (now Lundin Petroleum) decision to drill in Sudan's southern region, there was overwhelming evidence to suggest this region was home to some of the most challenging geopolitics for such a venture. Plagued by internal

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<sup>1</sup> Lundin Petroleum, "The History," last modified 2013, accessed January 16, 2013, <http://www.lundin-petroleum.com/eng/history.php>.

<sup>2</sup> Center for Security Policy, "The Dirty Dozen #10: Lundin Petroleum," last modified 2013, accessed February 15, 2013, <http://www.centerforsecuritypolicy.org/1988/01/01/the-dirty-dozen-10-lundin-petroleum-2/>.

<sup>3</sup> Clinton, Bill, *Federal Register*, "Executive Order 13067—Blocking Sudanese Government Property and Prohibiting Transactions With Sudan," last modified November 5, 1997, accessed February 26, 2013, <http://www.treasury.gov/resource-center/sanctions/Documents/13067.pdf>.

<sup>4</sup> Goldstein, Ritt, *The Asia Times*, "Sudanese blood spills into Asia," last modified June 25, 2010, accessed February 14, 2013, [http://www.atimes.com/atimes/Global\\_Economy/LF25Dj01.html](http://www.atimes.com/atimes/Global_Economy/LF25Dj01.html).

strife, Sudan<sup>5</sup> has been consumed by conflict since its independence from the colonial power of Great Britain and also Egypt in 1956.<sup>6</sup>

As a new federal republic, Sudan was embroiled in its first civil war from 1956 to 1972. The conflict gave southern Sudan freedom to govern more independently from the centralized government in the capital of Khartoum.<sup>7</sup> Sudan experienced peace for a little over a decade until its second major civil war erupted in 1983. Between the two wars, Sudan received major contributions of military weapons from the Soviet Union, the Eastern Bloc, China, Egypt, and the U.S. This period of arms dealing and training of Sudan's growing military would later fuel escalating ethnic and resource tensions.<sup>8</sup>

Much of Sudan's history since its independence from Britain in 1956 has been consumed by two major civil wars, separated by only 11 years of nominal peace in the 1970s and early 1980s.

Sudan's first civil war had primarily been a conflict between divided ethnic groups: the Arab population and government under Islamic law in the northern portion of Sudan and the non-Arab population in the southern region. The second civil war, while still highly motivated by ethnic and ideological divisions, began to demonstrate the burgeoning importance of oil and water resources in the country.<sup>9</sup> In 1983, the Sudan People's Liberation Movement/Army (SPLM/A) was founded as a guerilla insurgency group in southern Sudan and was meant to unify fragmented groups for southern progress and ultimately upset northern Arab dominance in Khartoum.<sup>10</sup>

### 1.3 Environmental Context

Located in Northeast Africa, Sudan is the largest country by land area on the continent and contains several types of ecosystems, including wetlands, deserts, and plains.<sup>11</sup>

#### 1.3.1 Geography

Southern Sudan is part of the Nile River Basin. Block 5A, where Lundin Oil invested from 1997 to 2003, is 29,885 square kilometers and straddles the White Nile, or the Bahr El Jebel.<sup>12</sup> It is vital to maintain environmentally stringent safeguards in such a critical ecosystem. Since the Nile flows northward, the people of northern Sudan and Egypt have a direct interest in protecting the Nile from oil spills or other collateral contamination from drilling operations. Many local or indigenous populations depend heavily on the Nile as a clean freshwater resource.

<sup>5</sup> South Sudan became liberated from Sudan as Africa's 54<sup>th</sup> state on July 8, 2011. For references occurring prior to South Sudan's liberation, this region will be referred to as southern Sudan. British Broadcasting Company, "South Sudan becomes an independent nation," last modified July 8, 2011, accessed March 20, 2013, <http://www.bbc.co.uk/news/world-africa-14089843>.

<sup>6</sup> Energy Information Administration, "Sudan," last modified April 23, 2007, accessed January 24, 2013, <http://www.ecosonline.org/reports/2007/EIA%20Country%20Report.pdf>.

<sup>7</sup> British Broadcasting Company, "Analysis Sudan: a political and military history," last modified February 1999, accessed February 12, 2013, <http://news.bbc.co.uk/2/hi/africa/84927.stm>.

<sup>8</sup> United Nations Office for the Coordination of Humanitarian Affairs, "The Second Civil War," last modified February 2006, accessed January 15, 2013, [https://docs.google.com/viewer?a=v&q=cache:p2i5X98epbwJ:www.unsudanig.org/new\\_gateway/sudan/data/history/](https://docs.google.com/viewer?a=v&q=cache:p2i5X98epbwJ:www.unsudanig.org/new_gateway/sudan/data/history/).

<sup>9</sup> "The Second Civil War," 2006.

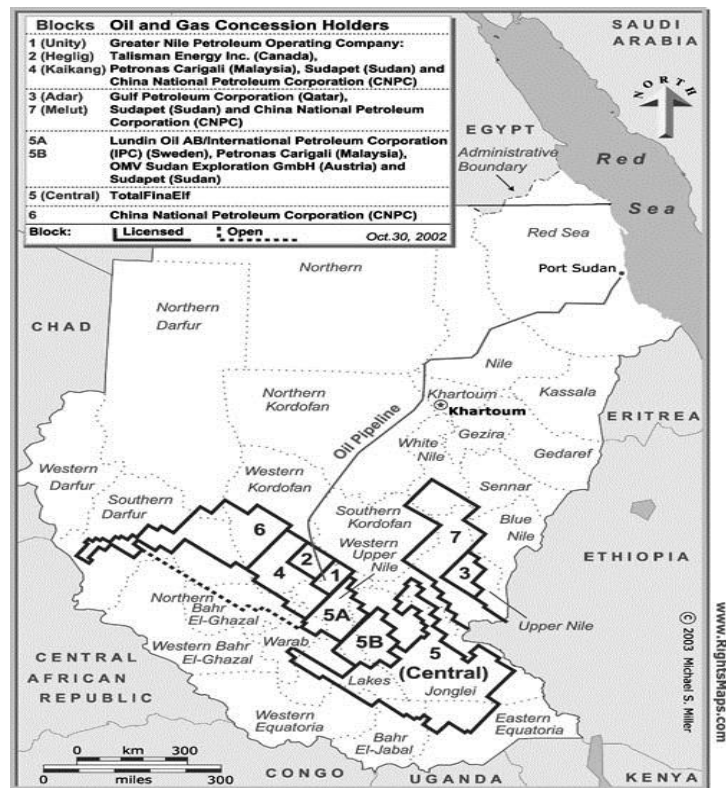
<sup>10</sup> *The Sudan Tribune*, "Sudan People's Liberation Army (SPLA)," last modified January 15, 2013, accessed February 13, 2013, <http://www.sudantribune.com/spip.php?mot183>.

<sup>11</sup> Embassy of the United States in Khartoum, Sudan, "Geography and Climate," last modified 2013, accessed April 1, 2013, [http://sudan.usembassy.gov/geography\\_and\\_climate.html](http://sudan.usembassy.gov/geography_and_climate.html).

<sup>12</sup> European Coalition on Oil in Sudan, "Unpaid Debt," last modified June 2010, accessed January 10, 2013, [http://www.ecosonline.org/reports/2010/UNPAID\\_DEBT\\_fullreportweb.pdf](http://www.ecosonline.org/reports/2010/UNPAID_DEBT_fullreportweb.pdf).

Block 5A is located in the Muglad Basin,<sup>13</sup> which is part of the Unity State region.<sup>14</sup> This region is home to a portion of possibly the largest tropical wetland system on the planet, the Sudd Wetlands.<sup>15</sup> The tributaries of the White Nile create the Sudd wetlands, which can grow to the size of England during the wet season.<sup>16</sup>

Sudd wetlands are a diverse system of “open water and submerged vegetation, floating fringe vegetation, seasonally inundated woodland, rain-fed and river-fed grasslands and finally floodplain scrubland.”<sup>17</sup> Wetlands serve to filter impurities from water, provide stability of water flow, regulate temperatures, irrigate land, and provide a habitat for migratory species and birds of international and regional conservation significance. There are also many endemic species of mammals, fish, and birds.<sup>18</sup> Additionally, Block 5A is bordered by both the Zefah Game Reserve and the Shambe Nature Reserve.



**Figure1** Shown here is a map of southern Sudan near the end of Lundin Oil’s involvement in the region as of October 30, 2002. The Nile River flows directly through Block 5A, posing a major environmental threat without proper environmental safeguards and protections. Also shown is the major pipeline running from the oil fields to Port Sudan for shipping the oil internationally (See *Sudan, Oil, and Human Rights*, Human Rights Watch, 2003).

### 1.4 Company Profile

As of 1997 when operations began in Sudan’s Block 5A, Lundin was Sweden’s largest private oil company and became one of the 20 largest oil companies globally after moving into Sudan.<sup>19</sup> As with many oil corporations, Lundin has operated under several different names over time due to mergers, buyouts, or sales of concessions; just as oil itself is fungible, the structures and brands of the companies tend to be fungible as well.

Lundin Oil began as International Petroleum and was founded by Adolf Lundin in 1981 with assets in the Middle East, the Bay of Biscay, and Texas. In the mid-1980s, the company became known as

<sup>13</sup> “Lundin closes Sudan sale,” *Oil Daily* (2003), 1-1, accessed January 14, 2013, <http://search.proquest.com/docview/199197508?accountid=8285>.

<sup>14</sup> “Unpaid Debt,” 2010.

<sup>15</sup> Dr. Riak K. M., United Nations Environment Programme, “Sudd Area as a Ramsar Site: Biophysical Features,” *Sudan: Post-Conflict Environmental Assessment, Volume 1* (June 2007), accessed February 20, 2013, [https://docs.google.com/a/student.american.edu/viewer?a=v&q=cache:oBgDLGrYn6UJ:postconflict.unep.ch/sudanreport/sudan\\_website/](https://docs.google.com/a/student.american.edu/viewer?a=v&q=cache:oBgDLGrYn6UJ:postconflict.unep.ch/sudanreport/sudan_website/).

<sup>16</sup> “Southern Sudan’s Vast Wetlands Conserved Under UN Treaty,” 2006.

<sup>17</sup> Dr. Riak K. M., 2007, 2.

<sup>18</sup> Dr. Riak K. M., 2007, 2.

<sup>19</sup> Environment News Service, “Southern Sudan’s Vast Wetlands Conserved Under UN Treaty,” last modified November 1, 2006, accessed January 20, 2013, <http://www.ens-newswire.com/ens/nov2006/2006-11-01-04.asp>, 3.

International Petroleum Corporation (IPC) as it expanded its operations to Malaysia, Vietnam, Papua New Guinea, and the United Kingdom into the 1990s.<sup>20</sup> IPC, which was based in Vancouver, British Columbia as a Canadian subsidiary of Lundin Oil, merged with Sands Petroleum A.B. in 1997. The company then officially became A.H. Lundin Oil A.B., and its headquarters are located in Geneva, Switzerland. Lundin Oil combined Adolf Lundin's major companies, both of which he served as chairman.<sup>21</sup> Upon his death, the company passed on to his two sons, Ian and Lukas Lundin.<sup>22</sup> Lundin Petroleum is currently traded on the NASDAQ OMX, the Toronto Stock Exchange (TSX), and the Stockholm Stock Exchange.<sup>23</sup>

Lundin Oil continued spreading its operations and gaining assets within the Middle East, Southeast Asia, Sudan, and the North Sea. The firm discovered oil in Block 5A of southern Sudan in 1999 after signing a concession contract for the oil field in 1997. The company would continue drilling in Block 5A until its sale of the field to a member company of the Lundin Oil consortium in Block 5A, Malaysian firm Petronas Carigali, in 2003.

Before Lundin Oil's departure from Block 5A, the consortium was led by Lundin Oil with a share of 40.375%, followed by Petronas Carigali with 28.5%, Austrian firm OMV with 26.1%, and Sudanese company Sudapet with 5%.<sup>24</sup> Even after Petronas Carigali took over Lundin's share of Block 5A, Lundin Oil maintained its stake in adjacent Block 5B with a 24.5% share.<sup>25</sup> The company finally became known as Lundin Petroleum in 2001 when it was bought for \$470 million by Canadian firm Talisman.<sup>26</sup> Lundin Petroleum currently operates in northern Europe, Russia, the Middle East, and Southeast Asia, but no longer has a presence in Sudan or South Sudan.

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<sup>20</sup> "The History," 2013.

<sup>21</sup> *The New York Times*, "International Petroleum To Get Offer From Sands," Last modified September 2, 1997, accessed February 13, 2013, <http://www.nytimes.com/1997/09/02/business/international-petroleum-to-get-offer-from-sands.html>.

<sup>22</sup> "Board of Directors," 2013.

<sup>23</sup> Lundin Petroleum, "Lundin Petroleum Receives Expert Opinion Against Investigation," last modified May 8, 2012, accessed April 1, 2013, [http://www.lundin-petroleum.com/Press/pr\\_corp\\_08-05-12\\_e.html](http://www.lundin-petroleum.com/Press/pr_corp_08-05-12_e.html).

<sup>24</sup> Open Oil, "Lundin Operations in South Sudan," last modified January 20, 2013, accessed July 19, 2012, [http://wiki.openoil.net/index.php?title=Lundin\\_Operations\\_in\\_South\\_Sudan](http://wiki.openoil.net/index.php?title=Lundin_Operations_in_South_Sudan).

<sup>25</sup> "Lundin Operations in South Sudan," 2013.

<sup>26</sup> "The History," 2013.

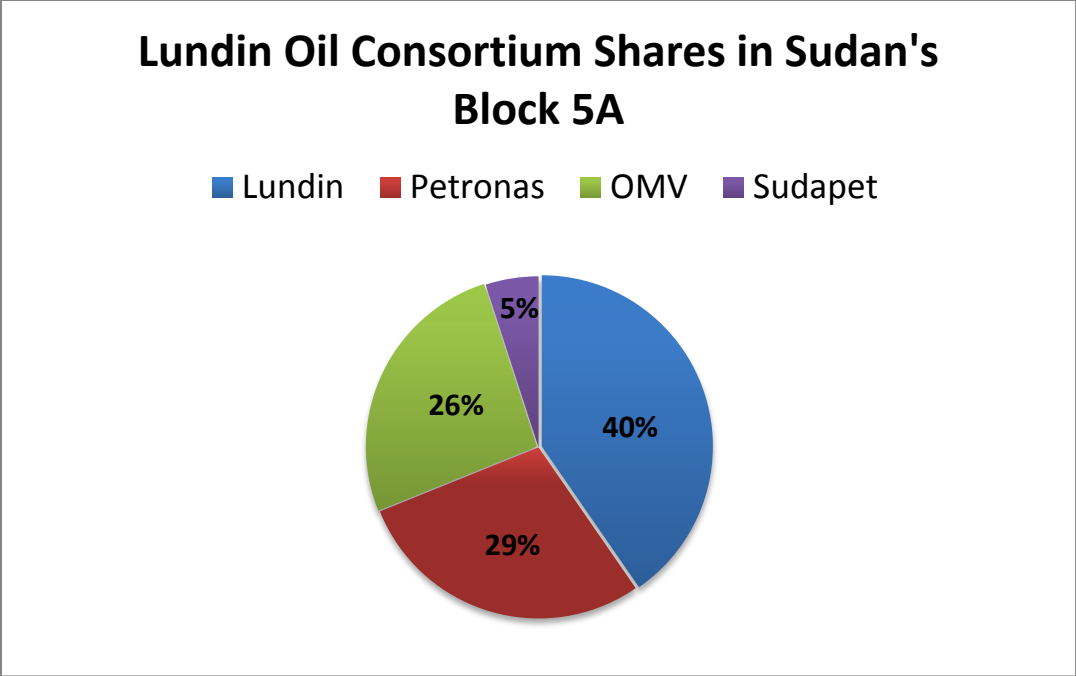


Figure 13 Lundin led the oil consortium with largest share of the Block 5A concession (1997-2003).<sup>27</sup>

### 1.5 Corporate Social and Environmental Policies

Today, Lundin has policies promoting environmental, social, and corporate responsibility, developed as part of a revised business strategy to become more accountable after its negative involvement in Sudan.<sup>28</sup> Its environmental policy strives “to ensure that exploration and production operations are conducted in compliance with all applicable environmental laws and regulations and, as a minimum, meet company-specified environmental procedures and programmes.” Lundin’s operating policies also cover anti-corruption, community relations, health and safety, and human rights. The company’s human rights policy emphasizes commitments to the United Nations Global Compact and Guiding Principles on Business and Human Rights. Lundin states that although it “respects all human rights, it focuses primarily on those human rights that potentially may be most impacted, directly or indirectly, by its activities.”

In addition to these core policies, Lundin has also developed a corporate social responsibility (CSR) office and policy to promote greater positive development in the communities most impacted by the company’s drilling. The CSR policy contains two broad Codes of Conduct and Governance, which create a framework to protect the local environment and the safety and health of communities

**Extractive Industries Transparency Initiative (EITI)**  
 The EITI was established when UK Prime Minister Tony Blair announced the initiative at the World Summit on Sustainable Development in Johannesburg in 2002. Countries join the EITI to pledge greater transparency in revenue flows among extractive companies and governments (See “History of EITI” 2013).

<sup>27</sup> “Lundin Operations in South Sudan,” 2013.  
<sup>28</sup> Batruch, Christine, “Does Corporate Social Responsibility Make a Difference?” *Global Governance*, vol. 17 (2011), accessed March 22, 2013, <http://journals.riener.com/doi/pdf/10.5555/1075-2846-17.2.155>, 155.

and workers, provide consultation to affected communities, train staff to manage and mitigate negative impacts, monitor and evaluate operations, and outline emergency responses to environmental and social disasters or conflicts.<sup>29</sup>

As of February 6, 2013, Lundin became a supporting company of the Extractive Industries Transparency Initiative (EITI).<sup>30</sup> This was over a decade after the EITI's inception during the World Summit on Sustainable Development in Johannesburg. Lundin stated that it supported the initiative because "transparent accounting of revenues contributes to good governance and the well-being of communities in resource rich countries."<sup>31</sup> The support also coincides with Lundin's increasing operating presence in Norway, which is a strong adherent to the EITI and which hosts the initiative's headquarters. Norway is also the only country in which Lundin currently operates that is EITI-compliant.<sup>32</sup>

### 1.5.1 Lundin's Environmental Impact Assessment

In 2003, Human Rights Watch reported that although Lundin claims to have conducted an environmental impact assessment (EIA) for its operations in Block 5A with the help of Metoc PLC of London, the assessment has not been made public nor has it been sent to Human Rights Watch upon the organization's request.<sup>33</sup> In 2009, at the request of ECOS, an independent EIA was conducted based on satellite imagery.<sup>34</sup>

## 2. Results

### 2.1 Social Impacts

Southern Sudan and specifically Unity State, within which Block 5A is located, is home to the indigenous agricultural communities composed of the Nuer tribe, which makes up about 90 percent of the population, and the Dinka tribe, which makes up about 10 percent.<sup>35</sup> According to a UNEP post-conflict report based on personal interviews with displaced community members, "tens of thousands of people" were forced from their lands by government troops.<sup>36</sup> ECOS examined satellite images of agricultural land in densely populated areas in Block 5A for the period 1994 to 2004, which overlaps Lundin's time in Block A. They found that 80% of land-use and settlement practices were displaced or changed

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<sup>29</sup> Lundin Petroleum, "Corporate Responsibility," last modified 2013, accessed March 22, 2013, [http://www.lundin-petroleum.com/eng/corporate\\_responsibility.php](http://www.lundin-petroleum.com/eng/corporate_responsibility.php).

<sup>30</sup> Lundin Petroleum, "Lundin Petroleum's Statement of Support to the EITI," last modified February 6, 2013, accessed March 21, 2013, [https://www.lundin-petroleum.com/Documents/cr\\_EITI\\_06-02-13\\_e.pdf](https://www.lundin-petroleum.com/Documents/cr_EITI_06-02-13_e.pdf).

<sup>31</sup> "Lundin Petroleum's Statement of Support to the EITI," 2013.

<sup>32</sup> Lundin began exploration and drilling in 2010 and has since expanded its presence in the country. Lundin Petroleum, "Norway," last modified 2013, accessed March 21, 2013, [http://www.lundin-petroleum.com/eng/operation\\_norway.php](http://www.lundin-petroleum.com/eng/operation_norway.php).

<sup>33</sup> Human Rights Watch, *Sudan, Oil, and Human Rights*, last modified 2003, accessed January 11, 2013, <http://www.hrw.org/reports/2003/sudan1103/sudanprint.pdf>, 506.

<sup>34</sup> Prins, Erik, PRINS Engineering, "Satellite mapping of land cover and use in relation to Oil exploitation in concession block 5A in Southern Sudan 1987–2006," last modified March 30, 2009, accessed February 1, 2013, [http://prinsengineering.com/Satellite\\_mapping\\_of\\_5a\\_PRINS.pdf](http://prinsengineering.com/Satellite_mapping_of_5a_PRINS.pdf).

<sup>35</sup> Badawi, Bashir MK., United Nations Environment Programme, "Management of the Environment in Sudan's Oil Industry," last modified April 2006, accessed February 12, 2013, <http://postconflict.unep.ch/>, 3.

<sup>36</sup> United Nations Environment Program, "The scorched earth: oil and war in Sudan," last modified March 2001, accessed February 15, 2013, [http://postconflict.unep.ch/sudanreport/sudan\\_website/doccatcher/data/documents/The%22scorched%20earth.pdf](http://postconflict.unep.ch/sudanreport/sudan_website/doccatcher/data/documents/The%22scorched%20earth.pdf), 2.



completely during this time frame.<sup>37</sup> This evidence is consistent with claims that the Government of Sudan (GoS) violently razed villages to clear the land for Lundin consortium operations. Furthermore, in a 2009 EIA commissioned by ECOS and performed by PRINS Engineering, of the 41 attacks taking place against villages in and around Block 5A from 1999-2002, only four were not directly correlated to significant land-use decreases. These decreases indicate forced displacement from the attacks, which is consistent with HRW's claims. Satellite imagery also shows refugee settlements emerging after attacks took place.<sup>38</sup>

Lundin reported in March 2000 that it would be suspending all extraction activities due to "logistical difficulties and safety considerations."<sup>39</sup> The announcement coincided with one of the most severe attacks reported in the area.<sup>40</sup> Operations began again in January 2001 once a new road had been built by Lundin to help bypass violence within villages; the area of Lundin's oil operations was expanded threefold, and Nuer residents along the road had been violently forced from their homes.<sup>41</sup> According to Lundin, "In January 2002, in view of increasing instability in the area, to ensure maximum security for its personnel and operations, the Consortium decided to suspend seismic and drilling activities in Block 5A as a precautionary measure."<sup>42</sup> This was the second long suspension of operations during the firm's four years in the region. Finally, in 2003, the company sold its Block 5A concession.

## 2.2 Environmental Impacts

Social impacts proved most detrimental during Lundin's time in Block 5A, but there are notable environmental impacts that have gone unmitigated. As stated previously, Lundin reported having conducted an EIA in preparation for drilling. However, this EIA has not been made public, required by the GoS, and has not been released upon request by HRW in 2003.<sup>43</sup> In response to inadequate information regarding an EIA, ECOS sought consultation from PRINS Engineering to conduct an independent EIA based mainly on Landsat imagery from the time of Lundin's activities. This EIA was released in 2009.<sup>44</sup>

The local Nuer and Dinka communities practice an agro-pastoralist lifestyle, which depends heavily on the natural fluctuations of the water table in the Sudd Wetlands basin in which they reside. This natural fluctuation determines the migration of their cattle herds and the placement and harvest period of their crops (i.e., sorghum).<sup>45</sup> When Lundin began construction of an all-weather road in 1999 to overcome dry and rainy season fluctuations, natural wetland management was permanently altered, and river and stream beds along portions of the road have dried up due to drain blockages.<sup>46</sup> Some blockages stretch

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<sup>37</sup> European Coalition on Oil in Sudan (unnamed report), last modified 2013, accessed April 1, 2013, <http://sverigesradio.se/diverse/appdata/isidor/files/83/8452.pdf>, 9.

<sup>38</sup> Prins, 2009, 14.

<sup>39</sup> "The scorched earth: oil and war in Sudan," 2001, 2.

<sup>40</sup> Prins, 2009, 14.

<sup>41</sup> "The scorched earth: oil and war in Sudan," 2001, 2.

<sup>42</sup> Lundin Petroleum, *Community Development & Humanitarian Assistance Program (CDHAP) "Consortium Activities in Sudan,"* last modified 2002. accessed March 3, 2013, [http://www.lundin-petroleum.com/Documents/cd\\_cdhap-sudan\\_e.pdf](http://www.lundin-petroleum.com/Documents/cd_cdhap-sudan_e.pdf).

<sup>43</sup> *Sudan, Oil, and Human Rights*, 2003, 506.

<sup>44</sup> Prins, 2009, 4.

<sup>45</sup> Prins, 2009, 4.

<sup>46</sup> Construction was completed in 2002. Prins, 2009, 18.

for as long as 8 km and continue to grow over time.<sup>47</sup> General oil exploration and drilling in the region have devastated dry-season grazing along the banks of the Nile.<sup>48</sup>

## 2.3 Company Impacts

Two major impacts on the company have proved lasting and damaging from Lundin's experience in Sudan's Block 5A: legal investigations and tarnished reputation. Other impacts have been more acute, such as financial losses. The scandal has had a wider resonance in Sweden as well: during Lundin's operating period in Sudan a member of the Board of Directors, Carl Bildt, also served as Sweden's Minister for Foreign Affairs. This has become a focal point of international criminal investigations due to allegations that Bildt acted complacently toward war crimes in Block 5A while gaining profits from Lundin's activities.<sup>49</sup>

### 2.3.1 Financial Losses

Lundin Oil left Sudan's Block 5A on April 29, 2003, with its sale to Malaysian firm Petronas Carigali. The license for Lundin's 40.375% share in its Block 5A consortium was sold for \$142.5 million with probable and proven reserves totaling 149.1 bbl.<sup>50</sup> As of March 2012, production capacity is measured at about 25,000 bpd. At this current maximum rate of production, with Lundin's 40.375% share of the concession block at the time of its withdrawal, the company would have been able to produce about 10,094 bpd.<sup>51</sup>

Block 5A's petroleum is known as Nile Blend, which is a "light, sweet waxy crude" found mainly in the Muglad Basin in southern Sudan.<sup>52</sup> Nile Blend is sold at the Brent Crude Oil Index price, which in March 2012 was \$125.45/bbl. At this rate, for the 31 days in March 2012, Lundin lost out on approximately \$39,255,061 or nearly \$40 million at its estimated rate of 10,094 bpd.<sup>53</sup> Furthermore, at the 10,094 bpd rate of production, Lundin could have generated nearly \$825 million in revenues from its Block 5A concession, which is nearly six times the price for which Lundin sold the concession to Petronas in 2003. (See Appendix I for more detailed calculations).<sup>54</sup> Another type of oil in the region, known as Dar Blend, is sold at lower prices due to its heavier weight, higher sulfur content, and overall poorer quality.<sup>55</sup>

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<sup>47</sup> Prins, 2009, 20.

<sup>48</sup> Prins, 2009, 12.

<sup>49</sup> Riisnæs, Ida Grieg, *Dagens Naerlingliv*, "Lundin should learn from Yara," last modified May 14, 2012, accessed March 27, 2012, [http://www.ecosonline.org/news/2012/20120514\\_Lundin\\_should\\_learn\\_from\\_Yara/](http://www.ecosonline.org/news/2012/20120514_Lundin_should_learn_from_Yara/).

<sup>50</sup> "Lundin closes sudan sale," 2003.

<sup>51</sup> Open Oil, "South Sudan Oil Almanac," last modified 2012, accessed January 12, 2013, <http://openoil.net/wp/wp-content/uploads/2012/08/South-Sudan-Oil-Almanac-PDF.pdf>, 65.

<sup>52</sup> BCK Oil West, "Nile Blend Crude Oil," accessed February 20, 2013, <http://www.oilwest.biz/nile-blend-crude-oil/>.

<sup>53</sup> U.S. Energy Information Administration, "Petroleum and Other Liquids," last modified March 27, 2013, accessed March 27, 2013, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=p&s=rbrte&f=m>.

<sup>54</sup> Based on the 10,049 bpd rate of production and EIA's records of each month's average Brent crude selling price in the global market, total profits for each month in 2012 were calculated and added together to total about \$825 million for 2012 just for the Block 5A concession (See appendix I). Petro Tech Intel, "Crude Grade: Nile Blend," last modified June 4, 2012, accessed March 20, 2013, <http://www.petrotechintel.com/pti.data/components/CIMS%20Sample.pdf>.

<sup>55</sup> "Crude Grade: Nile Blend," 2012.

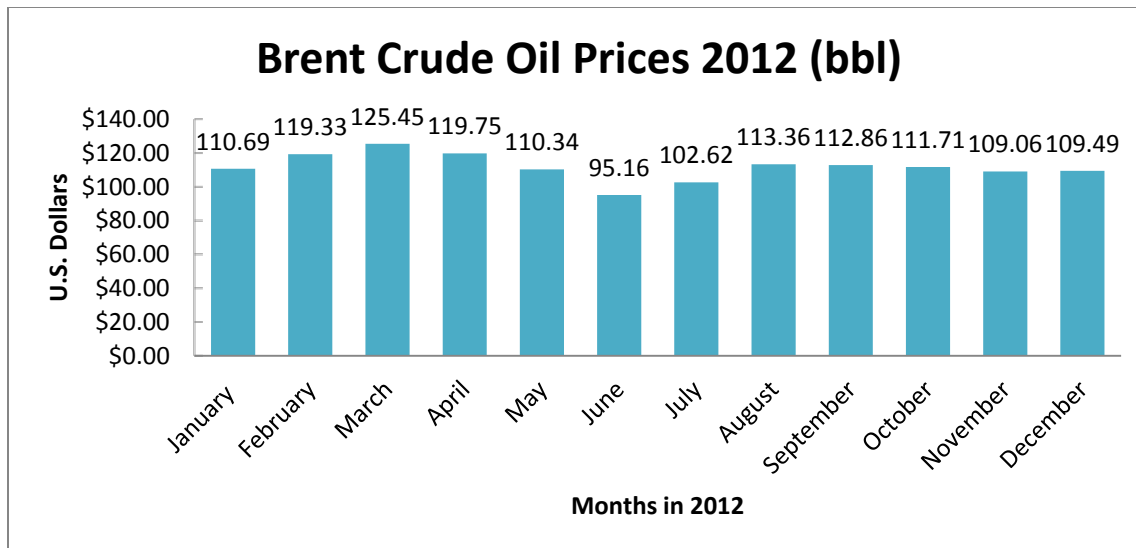


Figure 14 Data was acquired from U.S. Energy Information Association (EIA).<sup>56</sup>

Lundin was also faced with shareholder withdrawals in 2012, when the company refused to submit to an independent international investigation in addition to the current investigation of the Public Prosecution office in Stockholm. One major shareholder, Folksam, presented Lundin with a proposal to allow the independent investigation. When Lundin refused, Folksam withdrew its stake in the company Carina Lundberg Markow, head of ownership at Folksam, admitted that Lundin has improved its sustainability measures and “risk structure” but that “in light of their refusal to deal with the past, we’ve decided to back out as owners.”<sup>57</sup> Another shareholder, Handels retail trade union association, also decided to sell its stake in response to Lundin’s refusal. Beyond the monetary loss incurred from the withdrawal of these investors, more damaging is the poor perception of the company’s performance.<sup>58</sup>

### 2.3.2 Accusations from Human Rights Watch

The international NGO HRW released a report on November 25, 2003, titled *Oil, Sudan, and Human Rights*. Its major claims hinge on the evidence presented that oil development by foreign companies has drastically exacerbated criminal and inhumane behavior in order to continue to garner oil wealth. HRW believes there is compelling evidence that companies such as Lundin are complicit in war crimes and have contributed to government funding that has fueled a war causing the death of two million, displacement of four million, widespread epidemics, and famine.<sup>59</sup> HRW proposes that the victims of oil development in southern Sudan be compensated by the companies that profited from operating in the war zone.

The report made several allegations that Lundin neglected to take action when confronted with evidence of international war crimes and human rights violations. HRW, in conjunction with reports

<sup>56</sup> U.S. Energy Information Administration, “Europe Brent Spot Price FOB,” last modified February 21, 2013, accessed February 22, 2013, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pets&s=rbrte&f=m>.

<sup>57</sup> *The Local*, “Lundin stakes sold over rights probe rejection,” last modified May 31, 2012, accessed April 1, 2013, <http://www.thelocal.se/41158/20120531/#.UV86gpPCZ8F>.

<sup>58</sup> “Lundin stakes sold over rights probe rejection,” 2012.

<sup>59</sup> *Sudan, Oil, and Human Rights*, 2003, 36.

from Christian Aid (an NGO operating in the area) and ECOS, has recorded a list of attacks, including the groups initiating the conflict, the location, the outcome, and the date. The list includes three attacks in March 2000, which presumably led Lundin to suspend operations. One attack, in which 30 Dhorbor villagers were gunned down and killed from helicopters, was initiated by the GoS and government-allied militia. Another attack later in March in Bentiu was initiated by the GoS and Matiep forces; this assault resulted in the “killing and displacement of many civilians.”<sup>60</sup>

### 2.3.3 Accusations from ECOS

The following allegations were presented within a report released by ECOS in June 2010: “ECOS believes that Lundin, Petronas and OMV, as a matter of international law, may have been complicit in the commission of war crimes and crimes against humanity.”<sup>61</sup> ECOS does not accuse Lundin or other oil companies of directly carrying out human rights abuses or war crimes. Rather, the organization alleges that Lundin should be held responsible for its willful inaction to either persuade the GoS and SPLM/A and other militant groups to end the burning of villages and killing of innocent civilians or to withdraw from the concession at the onset of widespread conflict.

ECOS also states that there was an “overwhelming body of reporting” on illegal activities and abuses, and that Lundin should have been aware of the information and acted accordingly to end its indirect involvement.<sup>62</sup> Two other troubling accusations bring into question Lundin’s willingness to help defend local communities: that armies that committed violent crimes had been employed by Lundin as security forces, and that infrastructure built by Lundin made it easier for government military and other militant groups to attack less mobile pastoralist communities.<sup>63</sup>

ECOS demands that these injustices, which were indirectly aided and partially funded by oil rents to the GoS, be condemned, and that Lundin pay to compensate victims and families of victims.

HRW explained that Lundin attempted to work actively with the Unity State local government to provide security for its operations. Local police and security from a group of GoS officials led by Riek Machar made Block 5A a target for a GoS-backed militia led by Paulino Matiep<sup>64</sup> called the South Sudan Unity Movement/Army (SSUM/A). Though

Risky investment decisions in countries harboring terrorists or engaging in human rights violations, such as investing in Iran and Sudan, have prompted the non-partisan Washington, D.C. think tank Center for Security Policy to place Lundin Petroleum on its “Dirty Dozen” list from 400 businesses.

both groups are supported by the GoS, each belongs to a separate ethnic group.<sup>65</sup> Conflict arose as Matiep’s militia looted and burned surrounding villages while Machar’s group was underfunded to acquire weapons and supplies.<sup>66</sup> Most local inhabitants, namely the local pastoralist groups Nuer and Dinka, were displaced from the conflict zone for the wet season in order to escape the violence and

<sup>60</sup> See pages 88-91 for a detailed list of attacks. European Coalition on Oil in Sudan, 2010, 89.

<sup>61</sup> European Coalition on Oil in Sudan, 2010, 5.

<sup>62</sup> European Coalition on Oil in Sudan, 2010, 5.

<sup>63</sup> European Coalition on Oil in Sudan, 2010, 5.

<sup>64</sup> *Sudan, Oil, and Human Rights*, 2003, 137-138.

<sup>65</sup> *Sudan, Oil, and Human Rights*, 2003, 135.

<sup>66</sup> *Sudan, Oil, and Human Rights*, 2003, 137-138.

famine gripping the area; HRW reported that “many died of malaria.”<sup>67</sup> Some were able to return to the area around Block 5A during the dry season to attempt to salvage their abandoned agricultural land.

### 3. Analysis

#### 3.1 Company Performance

The Center for Security Policy, a non-partisan Washington, D.C. think tank, has placed Lundin Petroleum on its “Dirty Dozen” list of the worst companies from a pool of over 400 companies that conduct business with countries harboring terrorist groups.<sup>68</sup> Other oil, gas, or petrochemical companies on the list include Statoil ASA, Total SA, ENI SPA, PetroChina, Oil and Natural Gas Corporation, and Technip Coflexip.<sup>69</sup>

In Lundin’s case, the company was placed on the list due to its investment in oil extraction activities within Iran’s Munir Block and Sudan’s Block 5A; both countries are known to support terrorism. In addition, the Center for Security Policy posits that Iran has generated oil rents from the extraction business that Lundin and other firms have provided in order to help fund its nuclear efforts. Sudan has also gained significant revenue from Lundin’s extraction profits, which may have aided the GoS in launching “genocidal attacks against Christians, animists and black Muslim populations.”

Lundin’s investments in Iran and Sudan are indicative of a larger company strategy, according to the Center for Security Policy.<sup>70</sup> The strategy is to extract oil within concessions that are less competitive to acquire due to social instability or other high-risk factors for investment. Such an approach led Lundin to South Africa during apartheid when other companies faced shareholder pressures to withdraw, as well as to Zaire (today, Democratic Republic of Congo) when the corrupt Mobutu Sese Seko regime was in power.<sup>71</sup> With the exception of French company Total SA, Lundin is the only western oil company not to halt extraction in Sudan as human rights violations escalated in coordination with oil resources extraction.<sup>72</sup>

#### 3.2 Swedish CSR and Sudan’s Environmental Law

In 2001, Sweden began the Swedish Partnership for Global Responsibility amidst greater concerns in Sweden’s Ministry of Foreign Affairs about corporate behavior while operating abroad, as well as the release of the UN Global Compact and “several corporate scandals” among Swedish businesses.<sup>73</sup>

Sudan does have an environmental law and policy framework, mostly derived from its period of colonialism, with sector-specific environmental legislation.<sup>74</sup> Most applicable to Lundin’s experience in Sudan is the Environmental Protection Act of 2001, in which Article 26 mentions protections of human

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<sup>67</sup> *Sudan, Oil, and Human Rights*, 2003, 138.

<sup>68</sup> “The Dirty Dozen #10: Lundin Petroleum,” 2013.

<sup>69</sup> “The Dirty Dozen #10: Lundin Petroleum,” 2013.

<sup>70</sup> “The Dirty Dozen #10: Lundin Petroleum,” 2013.

<sup>71</sup> “The Dirty Dozen #10: Lundin Petroleum,” 2013.

<sup>72</sup> “The Dirty Dozen #10: Lundin Petroleum,” 2013.

<sup>73</sup> Idowu, Samuel O. and Walter Leal Filho, *Global Practices of Corporate Social Responsibility*, New York: Springer, 2009, 107-108.

<sup>74</sup> Hamid, Abdel HA, et al. Institute for Security Studies, “Nature and Extent of Environmental Crime in Sudan,” last modified November 2009. accessed April 1, 2013, <http://www.iss.co.za/uploads/EnvironCrimeSudan.pdf>, vii.

rights.<sup>75</sup> Sudan has no legislation mandating an EIA. The assessment process has usually been conducted by companies with home governance systems mandating that an EIA be done.<sup>76</sup>

### 3.3 Comparative Analysis

There were several oil companies operating in Block 5A or the surrounding area before and during Lundin's operations.

#### 3.3.1 Chevron (1974-1984)

U.S. petroleum company Chevron purchased oil concessions in Sudan in 1974 and discovered oil in Blocks 1 and 2 in 1978. In 1984, three Chevron expatriate workers were killed by southern Nuer separatists that attacked the drilling site. This led Chevron to halt its operations in southern Sudan;<sup>77</sup> then, in 1992, Chevron sold the concessions to Sudanese oil company Concorp.

#### 3.3.2 Talisman (1998-2003)

Canadian firm Talisman operated near Block 5A from 1998-2003, when it sold its 25% share in the Greater Nile Petroleum Operating Company (GNPOC) for \$771 million<sup>78</sup> to ONGC Videsh, a subsidiary of the Indian national oil company.<sup>79</sup> Talisman, previously a subsidiary of British Petroleum, was alleged to have fueled conflict between warring northern and southern ethnic factions very similarly to accusations brought against Lundin. As NGOs, such as Amnesty International, put pressure on Talisman to pull out of the area so as to no longer exacerbate the conflict, the firm received so much negative attention that it decided to sell off its shares in 2003.<sup>80</sup>

James Buckee, President and CEO of Talisman at the time of its activities in Sudan, denies all allegations linking Talisman to wrongdoing or complicity in international human rights abuses in Sudan.<sup>81</sup> According to Buckee, "People might say we were naïve. But we visited Sudan. We checked very carefully before we went in. As far as we could tell, it was going to be OK, and then it blew up."

"People might say we were naïve. But we visited Sudan. We checked very carefully before we went in. As far as we could tell, it was going to be OK, and then it blew up."  
–Talisman president and CEO Dr. James Buckee (1991-2007)

In addition to domestic and international pressure, a \$1 billion class-action lawsuit was brought against Talisman for complicity in human rights abuses and ethnic cleansing.<sup>82</sup> Talisman's bad press and legal issues translated to decreasing profits when it began selling its petroleum with a 10-20% discount during its time in Sudan. This discount reflects the

<sup>75</sup> Ministry of Environment and Physical Development, Official correspondence, last modified April 15, 2007, accessed April 1, 2013, <http://www2.ohchr.org/english/issues/water/contributions/Sudan.pdf>, 1.

<sup>76</sup> Osman Mirghani Mohamed Ali, United Nations Environment Programme, "Environmental Impact Assessment from a Sudanese Perspective," accessed April 2, 2013, [http://www.unep.ch/etu/publications/08\)%201%20to%206.pdf](http://www.unep.ch/etu/publications/08)%201%20to%206.pdf), 3.

<sup>77</sup> Ziada, Ismail S.H., *Oil in Sudan*, accessed March 20, 2013, [http://www.sudantribune.com/IMG/pdf/Oil\\_industry\\_in\\_Sudan.pdf](http://www.sudantribune.com/IMG/pdf/Oil_industry_in_Sudan.pdf).

<sup>78</sup> Campbell, Darren, *Alberta Oil*, "Lessons from Talisman Energy Inc.'s Sudanese foray," last modified June 1, 2011, accessed February 25, 2013, <http://www.albertaoilmagazine.com/2011/06/there-will-be-risk/>.

<sup>79</sup> "Talisman Completes Sale of GNPOC Stake To ONGC Videsh," 2003.

<sup>80</sup> Campbell, 2011.

<sup>81</sup> Campbell, 2011.

<sup>82</sup> Campbell, 2011.

internationally damaged perception of Talisman as well as the pressure to divest from Talisman stocks.<sup>83</sup> Talisman experienced a 97 percent share price increase from 1999 (\$6.41/share) to 2000 (\$17.51/share) at the height of its operations and profits in Sudan.<sup>84</sup>

In 2001, influential criticism from NGOs such as Amnesty International put enough pressure on Canadian Parliament and the U.S. Congress to denounce Talisman's involvement in the war-torn southern Sudan region.<sup>85</sup> Talisman decided to invest abroad in extraction amidst the oil sands boom in its western province of Alberta. Reg Manhas, Vice President of Corporate Affairs for Talisman, stated in 2011,

"We can't really choose where we work. I think for a company of our size, which is not in the oil sands and is looking to the international arena to continue its growth, from an exploration perspective, we are having to move into more and more challenging environments. The ability to manage these above-ground risks is becoming more and more important."

"The ability to manage these above-ground risks is becoming more and more important."-Vice President of Corporate Affairs Reg Manhas

It may not be credible, however, that a large oil company is unable to "choose" the location of its drilling operations. When asked by national Canadian news source *The Globe and Mail*, Buckee admitted that his company has a "couple of [oil sands] leases," but that the "oils sands are flavour of the month and their story is certainly beguiling."<sup>86</sup> However, Dr. Buckee's statement does not represent the current reality with Canadian oil measuring 170.2 billion bbl of proven reserves – 168.7 billion bbl of which is from crude bitumen oil sands. Of the proven bitumen oil sands, 80 percent are considered recoverable, placing Canada behind only Saudi Arabia and Venezuela in proven reserves, respectively.<sup>87</sup>

It is uncertain as to why, given viable alternatives even within Talisman's home operating country, Talisman would choose to operate in an undoubtedly violent and socially fragile region in Sudan. Perhaps it is less competitive to obtain oil field concessions in a conflict zone, the cost of doing business is much lower in Sudan than in a developed country like Canada, or a combination of these and other factors compel businesses to invest in oil development in difficult regions. Although domestic political considerations for the targeted operating region have always been relevant for multinational companies, international politics are evolving and have recently become much more integral to the stability of overseas operations.<sup>88</sup>

<sup>83</sup> Kobrin, Stephen, New York University Law School, "Oil and Politics: Talisman Energy and Sudan," Last modified 2004, accessed February 20, 2013, [http://www.law.nyu.edu/ecm\\_dlv4/groups/public/@nyu\\_law\\_website\\_\\_journals\\_\\_journal\\_of\\_international\\_law\\_and\\_politics/documents/documents/ecm\\_pro\\_059596.pdf](http://www.law.nyu.edu/ecm_dlv4/groups/public/@nyu_law_website__journals__journal_of_international_law_and_politics/documents/documents/ecm_pro_059596.pdf), 426.

<sup>84</sup> Sharp, David, The University of Western Ontario, *Cases in Business Ethics*, last modified 2006, accessed February 20, 2013, <http://books.google.com/books?id=RDASPnRpCIC&pg=PA158&lpg=PA158&dq=lundin+begins+selling+oil+at+discount+because+of+bad+press&source=bl&ots=2oSbXmhtlr&sig=Z1azbZ08Vx3dUST9UeYC1avG5E&hl=en&sa=X&ei=YjklUbL0BoXe8wS5pYGoAg&ved=0CEAQ6AEwAg#v=onepage&q=lundin%20begins%20selling%20oil%20at%20discount%20because%20of%20bad%20press&f=false>, 165.

<sup>85</sup> Campbell, 2011.

<sup>86</sup> Reguly, Eric, *Globe and Mail*, "Jim Buckee: Talisman's retired contrarian picks his next fight," last modified October 8, 2007, accessed February 27, 2013, <http://royaldutchshellplc.com/2007/10/08/globe-mail-jim-buckee-talismans-retired-contrarian-picks-his-next-fight/>.

<sup>87</sup> Alberta Energy, "Facts and Statistics," Last modified 2013, Accessed January 23, 2013, <http://www.energy.alberta.ca/oilsands/791.asp>.

<sup>88</sup> Kobrin, 2004.

In the case of Talisman, a growing community of international political actors leveraged political capital against Talisman to force the company out of Sudan; this was due to Talisman's operations benefiting the GoS, which was committing egregious human rights violations. Major NGO groups engaged in a public relations campaign to appeal to Canadian as well as U.S. governments as well as Talisman's shareholders to publicly defame Talisman and divest from the firm.<sup>89</sup> This tactic was successful in maintaining pressure on Talisman, creating a business incentive for the company to move out of Sudan by affecting its stocks and profits, and by tying Talisman's activities and revenues directly to the war crimes being committed by the GoS. This shift from states generally holding the majority of political power to power being divided among multiple stakeholders at different societal and international levels has increased scrutiny and awareness of companies' behavior while abroad. Clearly, there is a need for corporate social responsibility to uphold higher standards of social and environmental governance.<sup>90</sup>

## 4. Conclusions

Allegations against Lundin remain under international investigation, and the firm potentially faces prosecution for complicity in war crimes and international violations of human rights by the International Prosecution Chamber in Stockholm. Said Mahmoudi, professor of International Law at Stockholm University, believes that Lundin could have acted on behalf of local communities but chose instead to act in the company's self-interest. According to Mahmoudi, "There is evidence that Lundin knew about what was happening, and they just closed their eyes simply because it was a question of millions and millions of dollars."<sup>91</sup> ECOS and HRW remain convinced of Lundin's complicity in human rights abuses and continue to pressure the company to compensate those who have been displaced or the families of those killed in surrounding communities during operations in Block 5A.

Lundin's experience in Sudan is emblematic of a new age for corporate social responsibility and "corporate consciousness."<sup>92</sup> In an increasingly globalized and socially and environmentally demanding world, it is paramount to a company's brand and ultimate success to ensure that "furthering sustainability – a task that includes social justice and equity – is everyone's job, from accounting to marketing, logistics to product development."<sup>93</sup>

### 4.1. Long-term Impacts

Companies, such as Talisman and Lundin, represent the worst case scenarios for high-risk investment in underdeveloped conflict zones. Even a decade after selling Block 5A in Sudan, an international criminal investigation is ongoing. As part of the mounting legal pressure to determine whether Lundin should be held responsible for providing compensation, several shareholders have requested that Lundin participate in an additional, independent international investigation.

According to ECOS, amid growing demands from shareholders and NGOs, Lundin refused to participate in an independent investigation into its activities in Sudan. Sven-Erik Alhem, former Director of Public

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<sup>89</sup> Kobrin, 2004.

<sup>90</sup> Kobrin, 2004.

<sup>91</sup> Simoneau, Tristan, Syracuse College of Law Impunity Watch, "Swedish Oil Company Accused of Crimes Against Humanity," last modified June 25, 2010, accessed March 21, 2013, <http://impunitywatch.com/swedish-oil-company-accused-of-crimes-against-humanity/>.

<sup>92</sup> Breen, Bill, *The Responsibility Revolution*, San Francisco: Jossey-Bass, 2010, 163.

<sup>93</sup> Breen, 2010, 163.



Prosecution in Sweden, is cited as advising Lundin against engaging in the independent investigation while Magnus Elving's investigation from the same office, the Public Prosecution in Sweden, is ongoing.<sup>94</sup> Due to Lundin's refusal to submit to this investigation despite 21% shareholder support in favor and shareholder proposals to do so, the company lost 14% of its share price from the time of increased shareholder pressure during January 2011 to May 2012. As pressure was reaching a pinnacle, President and CEO of Lundin, Ashley Heppenstall, told shareholders in May 2012 "Trust us or sell your shares."<sup>95</sup> Heppenstall's need to make such a statement demonstrates the increasing gravity of shareholder pressure and public criticism that Lundin continues to experience a decade after its operations ended in Sudan's Block 5A.

## 4.2. Sudan's Oil-Driven Economy

As of 2011, it was reported that South Sudan relied on oil revenues for 98 percent of its income. Sudan relies on oil for more than 50 percent of its revenue and 90 percent of its export revenue.<sup>96</sup> Since the majority of South Sudanese practice agriculture and grazing for their livelihoods, the public sector drives most of the economic activity in the country.<sup>97</sup> Due to this remarkable reliance on public oil rents from international investors, the government has a vested interest in retaining as much oil extraction business as possible in order to bolster the country's economy. This dependence has contributed to maintaining low environmental and social standards within Sudan and South Sudan.

## 4.3. Regional Influence: GNPOC Pipeline

The completion of the GNPOC consortium's pipeline in 1999, which transports oil in southern Sudan to Port Sudan on the eastern seaboard of the Red Sea, was instrumental in allowing greater volumes of oil to be extracted and sent to the international market without trucking oil across the country with greater risk and difficulty during the rainy season. In fact, Sudanese oil was not sold to the global market until the construction of this pipeline, which has increased the value and incentive to produce greater amounts of oil to increase the GoS's revenue.<sup>98</sup> This 994-mile pipeline expedited the transportation of oil from the drilling fields to the harbor to be shipped abroad, but it also reduced conflicts. The pipeline has a maximum throughput of 450,000 bpd, and as of January 2007, only 260,000 bpd were flowing, meaning that capacity can handle greater production.<sup>99</sup>

# 5. Recommendations

## 5.1 Exert care when investing in undiversified economies.

Investors should seek to operate in countries that gain income from several types of economic activities and that strive to diversify their economic revenue portfolios further. Increased economic diversity will

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<sup>94</sup> The investigation requests apply to Lundin's activities not only in Block 5A but also in Sudan and Ethiopia generally, "Lundin Petroleum Receives Expert Opinion Against Investigation," 2012.

<sup>95</sup> Riisnæs, 2012.

<sup>96</sup> U.S. Energy Information Administration, "Background," last modified March 19, 2012, accessed April 4, 2013, <http://www.eia.gov/countries/cab.cfm?fips=SU>.

<sup>97</sup> Government of South Sudan, *South Sudan Development Plan 2011-2013*, last modified August 2011, accessed January 17, 2013, <http://www.jdt-juba.org/wp-content/uploads/2012/02/South-Sudan-Development-Plan-2011-13.pdf>. xiii.

<sup>98</sup> Energy Information Administration, "Country Analysis Briefs: Sudan," last modified April 2007, accessed March 8, 2013, <http://www.ecosonline.org/reports/2007/EIA%20Country%20Report.pdf>, 1-4.

<sup>99</sup> "Country Analysis Briefs: Sudan," 2007, 3.

be instrumental to reducing such dominant reliance on oil revenues for Sudan. Since its independence from Sudan in 2011, the government of South Sudan (GoSS) has relied almost exclusively on oil revenues, making up about 98% of its public-sector revenues.<sup>100</sup> Overreliance on resource income can trigger what is known as the resource curse, which can cause governments to take extreme measures to pursue external oil rents from international investment.

## 5.2 Invest in countries adhering to the Extractive Industries Transparency Initiative (EITI)

Sudan is not a party to the Extractive Industries Transparency Initiative (EITI). The EITI still struggles with compliance among member states, but committing to the EITI's guiding principles can serve as a signal that the country strives to be more opaque in its financial transactions regarding extractive industry projects. Therefore, investors should pursue investment projects in countries belonging to the EITI.

Adhering to the EITI could lead to improving poor natural resource governance and allow citizens and international audiences to openly access information previously only shared between companies and the government, such as oil contracts or payments from oil companies.<sup>101</sup> Investors should value a country's commitment to transparency within its energy and extractive sectors, because this will reflect positively on the investor and will lead to greater accountability among all stakeholders, including civil society.<sup>102</sup> Sudan's oil-rich neighbors, the Central African Republic and Chad, have either fully implemented the EITI requirements or are actively subscribing to them.<sup>103</sup>

## 5.3 Seek expert legal counsel in ambiguous situations.

As was especially the case with civil war-torn Sudan at the time of Lundin's operations, it is essential to gain expert legal advice when beginning such risky operations. Lundin now faces years of legal investigations and pending international criminal prosecution, which could have been prevented had the company sought relevant legal or CSR consulting advice. Such advice would have highlighted potential pitfalls and indicated how to follow Sudanese, Swedish, and international legal procedures.

## 5.4 Release a public environmental and social impact assessment prior to operating.

Proactively managing the environmental and social risks can help companies avoid hazards particular to the operating location. Releasing an assessment prior to operating also increases transparency and community accountability, which resonates well among the local community, the domestic government, the international community, and company shareholders.

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<sup>100</sup> *South Sudan Development Plan 2011-2013*, 2011, xiii.

<sup>101</sup> Extractive Industries Transparency Initiative, "What is the EITI?" Last modified 2013. Accessed March 7, 2013, <http://eiti.org/eiti>.

<sup>102</sup> John Mukum Mbaku and Jessica Elaine Smith, The Brookings Institution, "Efficient and Equitable Natural Resource Management: Using Transparency to Avoid the Resource Curse," last modified 2012, accessed February 17, 2013. <http://www.brookings.edu/~media/research/files/reports/2012/6/south%20sudan/06%20natural%20resource%20mbaku.pdf>.

<sup>103</sup> Extractive Industries Transparency Initiative, "EITI Countries," last modified 2013, accessed March 27, 2013, <http://eiti.org/countries>.

## **5.5 Implement international standards when operating in countries with lax environmental and social laws.**

When operating in countries with poor governance, operate according to international best practices and guiding principles. There are several leading international frameworks to help guide environmentally and socially responsible investment processes, including the following (See Appendices I-VI for more detail):

- a. **CERES**
- b. **Natural Resource Charter (NRC)**
- c. **UN Guiding Principles on Business and Human Rights**
- d. **OECD guidelines for multinationals**
- e. **UN Global Compact**

## **5.6 Strategically avoid bad previous experiences.**

Look to other companies' prior experiences within the same region of potential investment. In the case of Lundin, Chevron's and Talisman's experiences served to indicate that companies would encounter and exacerbate high levels of conflict, war crimes, and human rights violations in the Muglad Basin oil fields. Knowing this prior to entering the oil fields and devising a strategy to avoid conflict (or, more realistically, to manage violence with an independent security force) may be an option, but it may also be likely that the region is simply unsuitable for peaceful oil extraction activities.

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## Appendix

### I. Brent Crude Monthly Profit Totals for 2012

<b>Month</b>	<b>Total Profits (USD)</b>
January	34,636,450
February	34,930,993
March	39,255,061
April	36,262,695
May	34,526,930
June	28,816,351
July	32,111,234
August	35,471,931
September	34,176,265
October	34,955,622
November	33,025,549
December	34,260,953
<b>Overall Total for 2012</b>	<b>824,860,068</b>

## II. CERES

The Coalition for Environmentally Responsible Economies (CERES) Principles began as a product of a 10-year partnership between corporations, environmental groups, and investors and has been widely applied in the U.S. as well as internationally. Companies adhering to CERES include Nike, American Airlines, General Motors, Polaroid, Coca-Cola, Bethlehem Steel, Ford, etc.<sup>104</sup> CERES Principles provide direction in the following CSR operating procedures:

- Protection of the biosphere
- Sustainable use of natural resources
- Reduction and disposal of wastes
- Energy conservation
- Risk reduction
- Safe products and services
- Environmental restoration
- Informing the public
- Management commitment
- Audits and reports<sup>105</sup>

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<sup>104</sup> Hirschland, Matthew J., *Corporate Social Responsibility and the Shaping of Global Public Policy*, New York: Palgrave Macmillan, 2006, 158-160.

<sup>105</sup> Hirschland, 2006, 160-161.

### III. Natural Resource Charter (NRC)

Initiated by an independent group of global leaders in sustainable natural resource extraction, the NRC is a set of 12 precepts designed from successful techniques used by countries and companies throughout the world to most efficiently and ethically manage resources from the perspective of businesses, governments, and civil society.<sup>106</sup> Different from most guiding principle frameworks, the NRC takes a more detailed approach to managing resources at the domestic government level, methods for responsibly extracting resources, and stronger social and environmental governance by government and industry as well as non-state actors. The 12 precepts include:

1. Maximizing benefits for all citizens
2. Promoting transparency and accountability
3. Better fiscal regimes and contracting
4. Better sector governance
5. Environment, society, and local benefits
6. The role of national resource companies
7. Investing the revenues
8. Smoothing revenue volatility
9. Better public spending
10. Encouraging private investment
11. The role of international governments
12. The role of international companies<sup>107</sup>

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<sup>106</sup> "The Technical Advisory Group is chaired by Nobel Laureate in Economics, Michael Spence. The group comprises over 30 leading experts including Paul Collier, Director of the Centre for the Study of African Economies at Oxford University, Karin Lissakers, Director of Revenue Watch Institute, Tony Venables, Director of OxCarre at Oxford University. The Charter is governed by an Oversight Board chaired by Ernesto Zedillo, former President of Mexico."

Natural Resource Charter, "History," last modified 2013, accessed April 1, 2013, <http://naturalresourcecharter.org/content/about/history>.

<sup>107</sup> Natural Resource Charter, "The Twelve Precepts," last modified 2013, accessed April 1, 2013, <http://naturalresourcecharter.org/precepts>.

#### IV. UN Guiding Principles on Business and Human Rights

These principles emerged from a growing global need for greater business accountability and were presented in a report to the UN Council on Human Rights in 2011. Principles include:

- The state duty to protect human rights
- The corporate responsibility to protect human rights
- Access to remedy<sup>108</sup>

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<sup>108</sup> United Nations Council on Human Rights, “Guiding Principles on Business and Human Rights,” accessed April 1, 2013, [http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR\\_EN.pdf](http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf).

## V. OECD Guiding Principles for Multinational Corporations

### “Enterprises should:

1. Contribute to economic, environmental and social progress with a view to achieving sustainable development.
2. Respect the internationally recognised human rights of those affected by their activities.
3. Encourage local capacity building through close co-operation with the local community, including business interests, as well as developing the enterprise’s activities in domestic and foreign markets, consistent with the need for sound commercial practice.
4. Encourage human capital formation, in particular by creating employment opportunities and facilitating training opportunities for employees.
5. Refrain from seeking or accepting exemptions not contemplated in the statutory or regulatory framework related to human rights, environmental, health, safety, labour, taxation, financial incentives, or other issues.
6. Support and uphold good corporate governance principles and develop and apply good corporate governance practices, including throughout enterprise groups.
7. Develop and apply effective self-regulatory practices and management systems that foster a relationship of confidence and mutual trust between enterprises and the societies in which they operate.
8. Promote awareness of and compliance by workers employed by multinational enterprises with respect to company policies through appropriate dissemination of these policies, including through training programmes.
9. Refrain from discriminatory or disciplinary action against workers who make *bona fide* reports to management or, as appropriate, to the competent public authorities, on practices that contravene the law, the *Guidelines* or the enterprise’s policies.
10. Carry out risk-based due diligence, for example by incorporating it into their enterprise risk management systems, to identify, prevent and mitigate actual and potential adverse impacts as described in paragraphs 11 and 12, and account for how these impacts are addressed. The nature and extent of due diligence depend on the circumstances of a particular situation.
11. Avoid causing or contributing to adverse impacts on matters covered by the *Guidelines*, through their own activities, and address such impacts when they occur.
12. Seek to prevent or mitigate an adverse impact where they have not contributed to that impact, when the impact is nevertheless directly linked to their operations, products or services by a business relationship. This is not intended to shift responsibility from the entity causing an adverse impact to the enterprise with which it has a business relationship.
13. In addition to addressing adverse impacts in relation to matters covered by the *Guidelines*, encourage, where practicable, business partners, including suppliers and sub-contractors, to apply principles of responsible business conduct compatible with the *Guidelines*.
14. Engage with relevant stakeholders in order to provide meaningful opportunities for their views to be taken into account in relation to planning and decision making for projects or other activities that may significantly impact local communities.
15. Abstain from any improper involvement in local political activities.”<sup>109</sup>

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<sup>109</sup> Organisation for Economic Co-operation and Development, “OECD Guidelines for Multinational Enterprises,” last modified 2011, accessed March 20, 2013, 19-20.

## V. OECD Guiding Principles for Multinational Corporations (cont'd)

### **“Enterprises are encouraged to:**

1. Support, as appropriate to their circumstances, cooperative efforts in the appropriate form to promote Internet Freedom through respect of freedom of expression, assembly and association online.
2. Engage in or support, where appropriate, private or multi-stakeholder initiatives and social dialogue on responsible supply chain management while ensuring that these initiatives take due account of their social and economic effects on developing countries and of existing internationally recognised standards.”<sup>110</sup>

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<sup>110</sup> Organisation for Economic Co-operation and Development, “OECD Guidelines for Multinational Enterprises,” last modified 2011, accessed March 20, 2013, 19-20.

## VI. UN Global Compact Guiding Principles

Several resources are available to investors, such as training sessions, guides to managing CSR within a company, and general principles to become a sustainable corporation. There are ten major principles that constitute the UN Global Compact:

1. “ Businesses should support and respect the protection of internationally proclaimed human rights; and
2. make sure that they are not complicit in human rights abuses.
3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. the elimination of all forms of forced and compulsory labour;
5. the effective abolition of child labour; and
6. the elimination of discrimination in respect of employment and occupation.
7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies.
10. Businesses should work against corruption in all its forms, including extortion and bribery.”<sup>111</sup>

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<sup>111</sup> United Nations Global Compact. “The Ten Principles.” Last modified 2013. Accessed April 1, 2013. <http://www.unglobalcompact.org/AboutTheGC/TheTenPrinciples/>.

# Seismic Shift

Cuadrilla Resources United Kingdom Shale Gas  
Development

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## **Abstract**

Cuadrilla Resources was on the cutting edge of shale gas exploration in the United Kingdom (UK) before drilling operations triggered a series of earthquakes. As a result, the Department of Energy and Climate Change enacted an 18 month moratorium on hydraulic fracturing, creating a substantial delay in asset capitalization. This paper outlines the impacts of Cuadrilla's inadequate geological research prior to hydraulic fracturing on local populations, chief investors, and the UK shale industry. It explores the efforts to regain the trust of local communities and retain its position as a pioneer in UK shale gas exploration. The paper concludes with ideas on what Cuadrilla could have done differently and details the path necessary for a successful and profitable future in natural gas exploration.

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## Acronyms

ASX	Australian Stock Exchange
DOE	Department of Energy
EA	Environmental Agency
EIA	Energy Information Agency
EPA	Environmental Protection Agency
GHG	Greenhouse Gases
PEDL	Petroleum Exploration Development License
UK	United Kingdom
US	United States
DECC	Department of Energy and Climate Change
REAF	Ribble Estuary Against Fracking
TCF	Trillion cubic feet
VOCs	Volatile Organic Compounds

## 1. Introduction

On April 1, 2011, a natural gas rig owned by Cuadrilla Resources, conducted the first hydraulic fracturing treatment in shale formation located in the United Kingdom (UK). The well was injected with millions of gallons of water and a chemical mixture at a pressure rate high enough to splinter the shale formation thousands of feet below ground. The fractures were propped open with sand particles, and methane gas began to flow from the rock into the wellbore. The procedure was repeated four times before operations ceased for the day. Hours later, a 2.3 magnitude earthquake shook the town of Singleton, collapsed the wellbore and startled residents in the immediate area. Cuadrilla Resources had unknowingly injected fluids into an undiscovered fault at irregular pressures and induced a seismic shift.

This incident was the first major hydraulic fracturing controversy in the UK. It also marked the beginning of a complicated process to regain public confidence, adjust industry operating procedures, and move forward with natural gas exploration in the uncharted territory of UK shale resources.

The UK has a long history of offshore natural gas production, and the government is optimistic about the nation's ability to tap the vast onshore shale reserves. The country hopes to replicate the recent natural gas boom witnessed in the United States (US). The sharp increase in production in the US is due to evolving technologies, such as hydraulic fracturing and horizontal drilling. Together, these technologies open geologic formations for development that were previously uneconomical. In 2010, US natural gas reserves climbed to 317 trillion cubic feet (tcf), which was the first time reserves have risen above 300tcf.<sup>1</sup> The US Department of Energy (DOE) indicated that natural gas has the potential to be a "game changer" in the global energy outlook. It has already provided a new level of certainty in terms of future energy supplies, stabilized consumer utility bills, and contributed to a 13% drop in US greenhouse gas (GHG) emissions from their peak in 2007. US GHG emissions are now at their lowest level since 1994.<sup>2</sup>

### 1.1 Hydraulic Fracturing Background

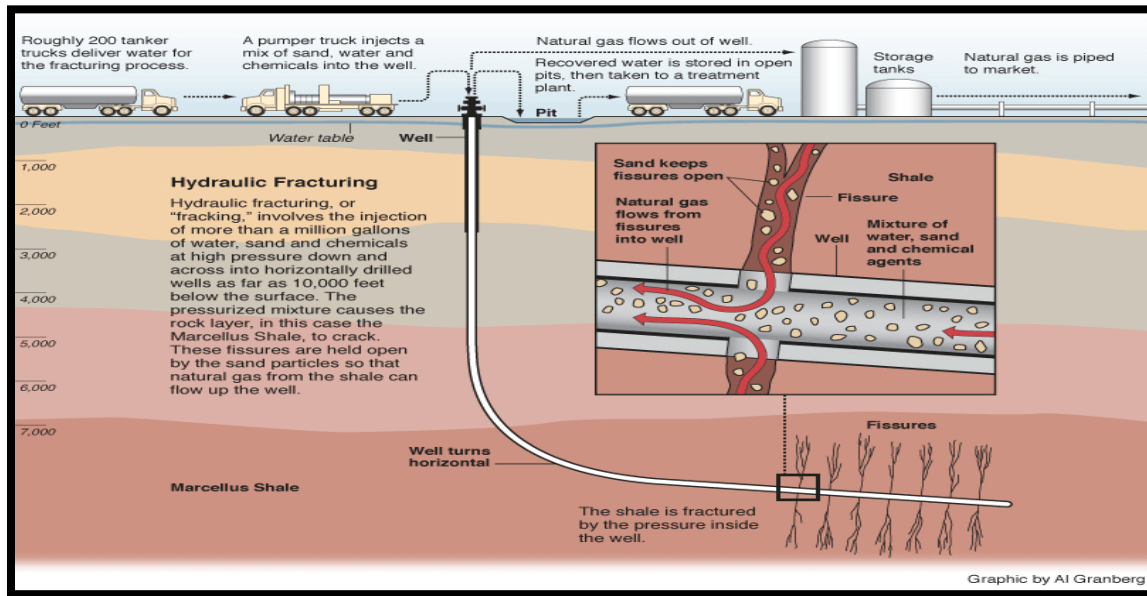
The well stimulation technology of hydraulic fracturing has been around for decades, but the size, scope, and depth of its application in modern oil and gas development is new and controversial. See Figure 1 for an outline of the process and Appendix I for a description of hydraulic fracturing from the British Geological Survey.

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<sup>1</sup> "U.S. Crude Oil, Natural Gas, and NG Liquids Proved Reserves," Energy Information Agency, accessed March 1, 2013, <http://www.eia.gov/naturalgas/crudeoilreserves/index.cfm>.

<sup>2</sup> Bloomberg New Energy Finance and the Bloomberg Council for Sustainable Energy. *Sustainable Energy in America 2013 Factbook*, accessed January 2013, [http://www.bcse.org/factbook/pdfs/BCSE\\_BNEF\\_Sustainable\\_Energy\\_in\\_America\\_2013\\_Factbook.pdf](http://www.bcse.org/factbook/pdfs/BCSE_BNEF_Sustainable_Energy_in_America_2013_Factbook.pdf).

Figure 15 Shown below is a diagram explaining the hydraulic fracturing process.<sup>3</sup>



Outlined below are the diverse and numerous concerns with hydraulic fracturing.

First, industry has largely refused to publically disclose all the chemicals used in the fracturing fluid. These chemicals are potentially toxic and could migrate into aquifers via underground conduits.

Second, there is not a designated and safe disposal method for wastewater that is forced up the well after the fracturing operation. The US Environmental Protection Agency (EPA) estimates that up to 13 million gallons of water are used in shale gas production per well, and anywhere from 10% to 70% is recovered as flowback water in the process.<sup>4</sup> The wastewater is kept in lined pits onsite, trucked to wastewater treatment plants, or reused with new water recycling technology.

The third major concern is air pollution. Hydraulic fracturing operations produce several air toxins, including volatile organic compounds (VOCs) and methane gas, the latter being a greenhouse gas over 20 times more harmful to the atmosphere (per unit volume) than carbon dioxide.<sup>5</sup> Finally, the industrialization effect of natural gas development is challenging for local communities to absorb. Development is often in rural and small towns, which are not adapted to the influx of workers and economic demands that accompany fossil fuel booms. Town infrastructure is damaged by truck traffic, and water resources are strained from massive water withdrawals. Local regulations have not evolved as quickly as the new practices related to hydraulic fracturing, and towns do not have the capacity to monitor industrial activities to the extent required. Together, these threats and uncertainties have

<sup>3</sup> "What is Hydraulic Fracturing?," ProPublica, accessed March 1, 2013. <http://www.propublica.org/special/hydraulic-fracturing-national>.

<sup>4</sup> US Environmental Protection Agency. *Study of the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources: Progress Report*. December 2012, accessed March 1, 2013, <http://www.epa.gov/hfstudy/pdfs/hf-report20121214.pdf>, 14, 19.

<sup>5</sup> US Environmental Protection Agency, *Overview for Amendments to Regulations for the Oil and Gas Industry*, April 2012, accessed March 1, 2013, <http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf>.

generated local opposition to shale gas development. Given these issues and concerns, the industry has struggled to convince the public that natural gas extraction can be done safely. Industry insists that the economic benefits of shale production outweigh the supposedly minimal environmental impacts. These are messages Cuadrilla tried to broadcast in the UK as it secured permits to become the first company exploring UK shale gas.

## 1.2 Company Background and Investor Relations

Cuadrilla was established as a private firm in 2007 and is managed from Staffordshire, England. The company focuses on exploration and production of unconventional oil and shale gas resources in Europe. Cuadrilla boasts close to one million acres in exploration permits across the UK, the Netherlands, and Poland.<sup>6</sup> It is owned by two foreign entities, each holding a 42% stake in the company. AJ Lucas, Australia's leading energy infrastructure, mining, and drilling contractor, was the founding shareholder and has contributed \$73.6 million since the company's formation in 2007.<sup>7</sup> Lucas is publically traded on the Australian Stock Exchange (ASX) and supports companies, such as Cuadrilla, based on operating strategy and potential for growth.<sup>8</sup>

Cuadrilla's operating strategy, which prompted Lucas to invest substantially, is to acquire a number of exploration permits across Europe, develop the shale resources under those permits to assess the commercial potential, and solicit larger firms better suited for major commercial production to purchase the leases. To streamline the exploration process for acquiring leases and land permits and to develop in-house expertise, Cuadrilla purchased its own drilling rig and well services equipment.

The other principle investor in Cuadrilla is Riverstone Holdings, a private-equity energy firm based in New York. As one of the world's largest private equity firms, Riverstone has allocated \$20.9 billion across 95 investments on five continents.<sup>9</sup> The firm's investment strategy focuses on conventional energy projects and renewable technologies. It invests in the production and exploration side of conventional energy, as well as in midstream distribution and alternative energy sectors.<sup>10</sup> In 2010, the firm invested \$58.3 million in Cuadrilla for a 42% ownership share, equivalent to that of AJ Lucas.<sup>11</sup>

Cuadrilla's Board of Directors is comprised of three nominees from Lucas and three from Riverstone, including Lord John Browne, former British Petroleum chief, as the chairman. Occasionally, Lucas will lend expertise for drilling and other activities, and Riverstone may lend similar expertise from the companies in its investment portfolio if needed.<sup>12</sup> The remaining 16% of the ownership structure is delegated to the management team. The management directs the daily affairs, and together the team has experience drilling oil and gas wells across the globe. Leading the management team is chief executive Francis Egan, who was appointed in July 2012 to replace Mark Miller.

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<sup>6</sup> "Cuadrilla Resources (United Kingdom)," AJ Lucas, accessed January 5, 2013, <http://www.lucas.com.au/investments/cuadrilla-resources>.

<sup>7</sup> Cuadrilla Resources (United Kingdom), AJ Lucas.

<sup>8</sup> Cuadrilla Resources (United Kingdom), AJ Lucas.

<sup>9</sup> "Riverstone Overview," Riverstone Holdings, accessed January 5, 2013, <http://www.riverstonellc.com/Section.aspx/1/Overview>.

<sup>10</sup> "Riverstone Overview," Riverstone Holdings.

<sup>11</sup> "Riverstone LLC invests US\$58 million in Cuadrilla Resources," Evaluate Energy, February 20, 2010, accessed March 2, 2013, <http://www.evaluateenergy.com/Universal/View.aspx?type=Story&id=97392>.

<sup>12</sup> Cuadrilla Resources (United Kingdom), AJ Lucas.

### 1.3 Case Background

The current recoverable natural gas reserves in the UK are located in two shale plays on opposite sides of the country: the Bowland Shale in central and northern regions and the Liassic Shale in the southern region. In an effort to capitalize on previously untapped resources and to replicate the positive performance of shale gas production in the US, Cuadrilla Resources drilled the first exploratory shale gas well near Blackpool in 2010. Preliminary data indicated the existence of 200tcf of gas “in ground” in its Bowland Shale leases.<sup>13</sup> The finding is comparable to 1.5 years of UK gas consumption, and an estimated 10% is technically recoverable.<sup>14</sup> Building on this data, Cuadrilla reported that it intended to drill as many as 800 more wells over the next 16 years.<sup>15</sup>

On April 1, 2011, Cuadrilla moved forward in the exploration process and hydraulically fractured the “Preese Hall” well in a series of stages. Hours after completing the fracture treatment, a 2.3M earthquake was recorded along with significant wellbore damage. Cuadrilla ceased all hydraulic fracturing operations and commissioned a study to better understand the cause of the seismic activity.<sup>16</sup> Fracturing operations resumed on May 27, and hours afterward, another earthquake was recorded at 1.5M, appearing to originate near the area of injection. Following the second earthquake, Cuadrilla again suspended operations in order to conduct a comprehensive study on the seismic activity and how it might be related to drilling activity.<sup>17</sup> In June 2011, the UK Department of Energy and Climate Change (DECC) placed a national moratorium on shale gas hydraulic fracturing activities until a full and independent investigation of the events could be completed. On December 12, 2012, after an 18-month suspension of activities and following multiple investigations and Parliamentary testimony from Cuadrilla and other experts on the impacts of shale gas development, the DECC lifted the ban on hydraulic fracturing. Shortly after, Cuadrilla announced a series of public information days to inform residents of their future activities. On January 21, 2013 the company announced its plan to hydraulically fracture another well, Anna’s Road, in Lancashire.<sup>18</sup> Further reports confirmed that Cuadrilla was negotiating with major gas producers about further investment in its Bowland Shale operations. Major British gas company, Centrica, was reported as one of the major parties interested in Cuadrilla’s potential.<sup>19</sup>

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<sup>13</sup> “About Natural Gas,” Cuadrilla Resources, accessed March 1, 2013, <http://www.cuadrillaresources.com/what-we-do/about-natural-gas/>.

<sup>14</sup> Royal Academy of Engineering, “Shale Gas Extraction in the UK: A Review of Hydraulic Fracturing,” June 2012. accessed March 1, 2013. [http://royalsociety.org/uploadedFiles/Royal\\_Society\\_Content/policy/projects/shale-gas/2012-06-28-Shale-gas.pdf](http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/projects/shale-gas/2012-06-28-Shale-gas.pdf), 58.

<sup>15</sup> Chazan, G., *Wall Street Journal*, “Corporate news: U.K. gets big shale find --- discovery by cuadrilla resources may rival vast, new U.S. gas properties,” September 22, 2011, , <http://search.proquest.com/docview/893412068?accountid=8285>.

<sup>16</sup> Christopher A. Green, Peter Styles and Brian J. Baptie, “Preese Hall Shale Gas Fracturing : Review and Recommendations for Induced-Seismicity Mitigation,” Department of Energy and Climate Change, April 2012, accessed January 5, 2013, <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/oil-gas/5055-preese-hall-shale-gas-fracturing-review-and-recomm.pdf>.

<sup>17</sup> Green et al.

<sup>18</sup> “Cuadrilla Announces Plans to Hydraulically Fracture Well at Anna’s Road,” Cuadrilla Resources, accessed March 1, 2013, <http://www.cuadrillaresources.com/news/cuadrilla-news/article/cuadrilla-announces-plans-to-hydraulically-fracture-well-at-anna%E2%80%99s-road/>.

<sup>19</sup> Philip When, *Sydney Morning Herald*, “Lucas hits new heights with UK shale asset,” January 15, 2013,

## 2. Project Impacts

### 2.1 Social Impacts

After the earthquakes, Cuadrilla faced increasing pressure from multiple fronts to explain what happened and to address fears that hydraulic fracturing would harm public health and the environment. The DECC agreed with Cuadrilla's decision to halt hydraulic fracturing operations and commissioned British Geological Survey and Keele State scientists to establish the cause of the earthquakes and address how to mitigate future risks.

During this time, multiple grassroots groups, focused on hydraulic fracturing, began forming throughout the country. Their missions ranged from demanding that Cuadrilla do a better job of public engagement to halting the expansion of natural gas development across the UK. Frack Off, a national organization dedicated to stopping hydraulic fracturing, has been the most vocal. The group presents information about shale gas on its website, aggregates local environmental groups, produces a monthly newsletter, and tracks natural gas company actions in the UK. Frack Off held its first action in August 2011 after months of rising concerns over Cuadrilla's exploratory operations. In November of 2011, activists from the group stormed the Cuadrilla well site in Lancashire and hung banners from the drilling rig calling for an end to "extreme energy."<sup>20</sup> The action coincided with protests at an industry conference in London, in which Cuadrilla released its geochemical report indicating it was "highly probable" that hydraulic fracturing activities caused the earthquakes in April and May of 2011.<sup>21</sup>

Another influential local group is Ribble Estuary Against Fracking (REAF). The group describes itself as "a local pressure group which is opposed to this extreme form of fossil fuel extraction."<sup>22</sup> The group collects information on shale gas exploration in the Lancashire area and catalogs Cuadrilla's public outreach efforts. Members consist of local residents, academics, and concerned pensioners who are striving to provide accurate information to communities that may be affected by shale gas development.<sup>23</sup> Local residents in natural gas exploration areas are concerned about the impact these operations could have on the UK countryside, tourism, and farming; they also express an increasing determination to avoid the same adverse impacts from hydraulic fracturing as observed in the US.<sup>24</sup> Thus, even with a clean and indiscriminate operating record prior to the Preese Hall earthquakes, Cuadrilla has faced an entrenched civic resistance to resuming and expanding its shale gas activities.

Months after the earthquakes, a report prepared for Cuadrilla concluded that the company's practices were responsible for the tremors, but the results of the "study indicate that little (or no) seismicity could be expected to be induced by similar hydraulic treatments in the Bowland Shale."<sup>25</sup> It did recommend

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<sup>20</sup> James Melkle and Shiv Mallik, "Fracking protestors storm shale gas exploration site," *The Guardian*, November 2, 2011, <http://www.guardian.co.uk/environment/2011/nov/02/fracking-protesters-storm-shale-gas-site>.

<sup>21</sup> Juliette Jowitz and Hanna Gersmann, "Fracking 'probable' cause of Lancashire quakes," *The Guardian*, November 2, 2011, <http://www.guardian.co.uk/environment/2011/nov/02/fracking-cause-lancashire-quakes>.

<sup>22</sup> "About Us," Ribble Estuary Against Fracking, accessed March 1, 2013, <http://www.reaf.org.uk/news.php>.

<sup>23</sup> Ribble Estuary Against Fracking.

<sup>24</sup> James Melley, "New groups protest at shale gas," *BBC News*, September 28, 2011, <http://www.bbc.co.uk/news/science-environment-15021328>.

<sup>25</sup> Stefan Baisch and Robert Vörös, "Geomechanical Study of Blackpool Seismicity," Q-con GmbH, October 26, 2010.

[http://docs.noodls.com/viewDoc.asp?filename=124481/EXT/4A97832FB5415585276B464288EB286A4527B79D\\_B4543B0288563A047EB2712BFB1606BDAAEF19A7.PDF](http://docs.noodls.com/viewDoc.asp?filename=124481/EXT/4A97832FB5415585276B464288EB286A4527B79D_B4543B0288563A047EB2712BFB1606BDAAEF19A7.PDF).



additional seismic monitoring if drilling resumed, even with the low probability of seismic activity in the area.

The DECC reviewed Cuadrilla's suggestions and description of the incidents and released its own study by the British Geological Survey and Keele State University. This report agreed that additional seismic monitoring was necessary and mandated a number of new procedures related to seismicity that must be implemented before hydraulic fracturing could resume. The report differed from Cuadrilla's analysis, however, stating that it was not possible to predict categorically that there would be no future seismic activity in the area: "The analyses failed to identify a causative fault, and detailed knowledge of faulting in the basin is poor. In the present state of knowledge it is entirely possible that there are critically stressed faults elsewhere in the basin."<sup>26</sup>

Perhaps most troubling to the government and citizens at large was the apparent lack of communication and coordination between Cuadrilla's operating and management staff. The DECC reported that the seriousness of the earthquakes was not being relayed to management; nor was information provided that hydraulic fracturing could be the cause. A representative from Friends of the Earth and a Conservative Party MP from Lancashire both agreed that these revelations contributed to a lack of trust and confidence in Cuadrilla's operations among the public.<sup>27</sup> Nor were appropriate mitigation measures established in the weeks between the first and second earthquake. This was seen as a blatant oversight that could have compromised public safety and the environment.

Residents from the village of Singleton in Lancashire were especially disturbed by Cuadrilla's return to the community's rural landscape. The village lies one-half mile from the Preese Hall well and is largely owned by the Singleton Trust, which was established by a wealthy landowner in 2003. The guiding principles of the Trust are to preserve the landscape and heritage of Singleton, enhance personal development, and make the landscape accessible to all.<sup>28</sup> The Trust owns most of the village center and 580 acres of surrounding farmland. After the earthquakes, 200 people showed up to a public meeting held by Cuadrilla to learn about the company's neighboring well sites. Residents indicated they did not want the company to return, even as Cuadrilla issued notices to area households assuring them that advanced seismic warning system technology would be put in place when hydraulic fracturing resumed.<sup>29</sup>

## 2.2 Company Impacts

The lack of due diligence on the geologic and seismic history in the area around Preese Hall led to the suspensions of all hydraulic fracturing operations for over a year. A tremendous amount of asset potential was lost or delayed, and public opinion of Cuadrilla, and hydraulic fracturing overall, was substantially hampered by the incidents.

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<sup>26</sup> Green et al.

<sup>27</sup> Tim Webb and Laura Pitel, *The Times*, "Fracking Bosses 'left in dark' over causes of tremors," December 15, 2012.

<sup>28</sup> The Richard Dumbeck Singleton Trust, *About the Richard Dumbeck Singleton Trust*, accessed March 2, 2013, <http://www.singletontrust.co.uk/about-the-trust.php>.

<sup>29</sup> Mark Hennessy, *The Irish Times*, "Exploration company's arrival divides English village," December 12, 2011, accessed March 1, 2013. [www.lexisnexis.com/hotttopics/lnacademic](http://www.lexisnexis.com/hotttopics/lnacademic).

Immediate impacts on Cuadrilla included the lost ability to collect data on the potential productivity of their wells. The company drilled three wells in the area around Lancashire and detected the existence of gas, but was unable to determine how much gas would flow out of the formation via hydraulic fracturing. Such information is critical in assessing the profitability in gas fields. Due to the low porosity of the tight shale formations, the existence of gas in the rock does not necessarily mean the wells will be economically recoverable. The delay in production of assets negatively affected Cuadrilla's ability to report recoverable reserves, which is essential to attracting necessary investments. Furthermore, after the earthquakes and at the request of the DECC, Cuadrilla was required to install, at their expense, a "traffic light" early warning system of seismic sensors around the well sites. The sensors use sonar technology to track movements underground during fracturing and relay the data in real time to prevent causing any irregular tremors.<sup>30</sup>

Cuadrilla also moved to restructure its management team. In light of the report of communication problems, Francis Egan replaced founding CEO, Mark Miller. Formerly the President of Global Production Division at BHB Billington Petroleum, Egan was chosen to guide the company to profitable production from the moratorium in June 2012. In his acceptance speech, Egan stated that his driving principles as new CEO were dedication to safety and environmental protection. Miller was demoted to overseeing Cuadrilla's Bowland Shale operations.

There were also much broader impacts from the moratorium on hydraulic fracturing, not just on Cuadrilla and at the Preese Hall well, but on the overall feasibility of economical production of UK shale gas reserves. Egan testified before Parliament in December 2012 that if the DECC did not allow for hydraulic fracturing to resume, he would be forced to withdraw all of Cuadrilla's operations from the UK. Without the essential well completion technology, commercial production of the gas resources would not be realized.

Indeed, the impacts from the earthquakes reached even further to Cuadrilla's primary investor, AJ Lucas. The Australian drilling company was the initial investor in Cuadrilla and contributed tens of millions of dollars to exploring the Bowland Shale with anticipation of profitable commercial production. On May 28, 2011, Lucas announced it was cutting its annual earnings projection and had suspended trading on the Australian Stock Exchange a week earlier. This move was not publically seen as directly correlated with Cuadrilla's activities and the suspension of hydraulic fracturing, but rather due to unsustainable debt from a large expansion project the company undertook prior to the global financial crisis.<sup>31</sup> Lucas was faced with the possibility of selling its drilling assets until Kerogen Capital, a Hong Kong-based hedge fund, acquired a 15% stake in the company for \$151 million. However, the stock remained suspended for seven months before relisting on December 28, 2011, trading at \$1.35 per share.<sup>32</sup>

The Lucas 2012 Annual Report described the year as disappointing and difficult for its Cuadrilla investment. The report indicated it was necessary to remove Mark Miller as CEO as part of a

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<sup>30</sup> "Cuadrilla to Undertake Comprehensive Monitoring Seismic Monitoring," Cuadrilla Resources, accessed March 1, 2013, <http://www.cuadrillaresources.com/news/cuadrilla-news/article/press-release-cuadrilla-to-undertake-comprehensive-seismic-monitoring/>.

<sup>31</sup> Philip When, "Drilling group hits debt crisis," *The Age (Melbourne Australia)*, May 28, 2011.

<sup>32</sup> Philip When, *Focus on game changer for AJ Lucas*. Sydney Morning Herald, December 27, 2011.

reorganization strategy. It also described the stalled activity in the UK as a “cash drain.”<sup>33</sup> The report explained the company’s poor performance over 2012 as the product of global financial insecurity, an overly ambitious acquisition, weak debt markets, and poor management choices. Lucas posted a \$110.2 million loss for the fiscal year ending on June 30, 2012.<sup>34</sup> The loss could not entirely be attributed to the poor performance of Cuadrilla, but the continuing cash obligations to the company without incoming revenue were a pressing concern. Lucas called for a recapitalization of its operations and secured another \$14.1 million in loans from Kerogon to help meet Cuadrilla’s capital needs. Kerogon is expected to contribute \$34.3 million to Lucas to fund Cuadrilla through June 30, 2013.

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<sup>33</sup> AJ Lucas, *Annual Report 2012*, AJ Lucas Group Limited, 2012, 21.

<sup>34</sup> AJ Lucas, *Annual Report 2012*, 38.

Figure 16: AJ Lucas Stock Performance<sup>35</sup>



AJ Lucas stock continued to bounce back after the DECC decision to lift the ban on hydraulic fracturing, and reached a high of \$2.08 after confirmed reports that Cuadrilla was negotiating with major oil companies about the commercial prospects of its assets in the Bowland Shale.

The reported capacity of 200 tcf of gas in-ground has proved effective in generating investment dollars. After 18 months without the ability to complete the exploration phase by hydraulically fracturing and flow testing its wells, Cuadrilla was still able to stabilize its financial situation via recapitalization maneuvers by its parent, AJ Lucas.

The financial impacts from the earthquakes and hydraulic fracturing moratorium on Riverstone Holdings, the other chief Cuadrilla investor, were less clear. Riverstone, as a private equity firm, is not required to release earning statements and financial performance to the public. As one of the largest energy private equity firms, Riverstone has a more diverse investment portfolio. Thus, the firm is less exposed to risk in this case than is AJ Lucas, which has concentrated expertise and relies heavily on its Bowland Shale assets.

Eventually, the DECC was sufficiently convinced that the risks of hydraulic fracturing could be minimized and that the economic benefits to the UK were substantial. The challenge moving forward for Cuadrilla is convincing the public that operations can resume with low environmental and public disturbance.

<sup>35</sup> "Markets Data AJ Lucas Group Ltd," Financial Times, accessed March 1, 2013. <http://markets.ft.com/research/Markets/Tearsheets/Business-profile?s=AJL:ASX>.

## 3. Analysis

### 3.1 Regulatory Framework

The current regulatory regime governing shale gas development in the UK is the same for all oil and gas development, onshore and off. Under the authority of the Petroleum Act of 1998, which outlines that all rights to minerals belong to the government, a company proposing to explore for hydrocarbons must obtain a Petroleum Exploration and Development License (PEDL).<sup>36</sup> The Secretary of State issues the license in consultation with the local planning commission. The DECC requires that “applicants must prove technical competence, awareness of environmental issues and financial capacity before offer of a PEDL will be made.”<sup>37</sup> In this case, Cuadrilla secured PEDL license 165, to drill exploratory wells in the Bowland Shale near Lancashire, in 2008.<sup>38</sup>

To secure the PEDL license, Cuadrilla submitted a development plan that provided the technical basis for the area slotted for development. Pertinent details of the development plan included seismic interpretation and structural configuration of the area, a geological interpretation, and reservoir descriptions.<sup>39</sup> DECC guidance documents indicate these descriptions should include “relevant geological factors that may affect the reservoir parameters (both vertically and horizontally) and thereby influence reservoir continuity within the field...”<sup>40</sup> It is presumed that Cuadrilla included the necessary geological information, but its application is not publically available under the initial license term of six years.

Local planning commissions make the final determination on an exploration application after receiving federal approval. In June 2009, Cuadrilla submitted its application to the Lancashire County Council to drill exploratory wells near Preese Hall. The application included a description of the intended construction and drilling process, a site restoration plan, and a plan to reduce disturbance to the community and local environment. The application contained no mention of seismic activity.<sup>41</sup> An environmental impact assessment was deemed unnecessary beyond the information included in the application. According to documents Cuadrilla submitted, the Town and County Planning Regulations require an Environmental Impact Assessment (EIA) only if development extends beyond one hectare.<sup>42</sup> The Lancashire County Council granted permission on October 2009 without any major objections from the town groups or the borough council.<sup>43</sup>

After the Lancashire planning register granted permission, the Environmental Agency (EA) was responsible for assessing if the activity posed a risk to ground and surface waters, regulating wastewater

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<sup>36</sup> “Petroleum Act 1998,” National Archives, accessed March 1, 2013, <http://www.legislation.gov.uk/ukpga/1998/17/section/2>.

<sup>37</sup> “Oil and Gas: Petroleum licensing Guidance,” Department of Energy and Climate Change, accessed March 1, 2013, <https://www.gov.uk/oil-and-gas-petroleum-licensing-guidance>.

<sup>38</sup> “PEDL165, awarded to Cuadrilla Resources under the Petroleum Act 1998,” Department of Energy and Climate Change, accessed March 1, 2013, <http://tools.decc.gov.uk/en/content/cms/tools/oglicences/oglicences.aspx>.

<sup>39</sup> “Guidance notes for onshore oil and gas field Development Plans 2009,” Department of Energy and Climate Change, accessed March 1, 2013, [https://www.gov.uk/oil-and-gas-onshore-exploration-and-production#resumption-of-shale-gas-exploration\\_](https://www.gov.uk/oil-and-gas-onshore-exploration-and-production#resumption-of-shale-gas-exploration_).

<sup>40</sup> Department of Energy and Climate Change, “Guidance notes for onshore oil and gas field Development Plans 2009.”

<sup>41</sup> Lancashire County Council, Planning Application Display 05/09/0572, accessed March 1, 2013, <http://planningregister.lancashire.gov.uk/PlanAppDisp.aspx?recno=5155>.

<sup>42</sup> “Anna’s Road Hydrocarbon Exploration Site Planning Application.” Cuadrilla Resources, January 2013, accessed March 1, 2013, <http://planningregister.lancashire.gov.uk/Attachments/6221/Part%205%20Scoping%20Report%2011.01.2013.pdf>.

<sup>43</sup> Via initial application #05/09/0572.

discharges, and acted as a planning process consultation body for the local authorities. At the Preese Hall site, the EA completed technical assessments for the potential impacts on ground and surface water. It concluded that Cuadrilla's operations "deemed no risk of water contamination" and did not necessitate a permit.<sup>44</sup> Additionally, the Agency identified the chemicals used in the Cuadrilla's fracture fluid as non-hazardous.<sup>45</sup>

Obtaining all necessary approvals, Cuadrilla moved forward with well construction at the Preese Hall site in 2010 and followed with hydraulic fracturing treatments, which eventually led to the seismic events.

### 3.2 What Cuadrilla Could Have Done Differently

After a review of the planning applications and relevant UK regulations regarding exploratory onshore wells, it is clear that Cuadrilla was in compliance with the required preparations and procedures. Given the relatively new nature of hydraulic fracturing in shale formations, and the lack of extensive geological research in the Bowland Shale, Cuadrilla operated under what it deemed appropriate due diligence for hydraulic fracturing activity. Ultimately, the lack of knowledge of the faults in the shale, appropriate pressure levels and general characteristics of the formation led to operator-induced seismic activity. AJ Lucas CEO, Allan Campbell, admitted as much in an interview: "We should have done more analysis of the geology before we started fracking, but we commissioned our own report which concluded it was our activity that caused the geomechanical movement."<sup>46</sup>

In hindsight, Cuadrilla's management should have recognized the need for advanced geological knowledge above and beyond that required for regulatory approval, given the pioneering aspect of their operations. Cuadrilla's licenses in the Bowland Shale are potentially very lucrative investments, if developed in a socially and environmentally sound manner. Grasping the magnitude of initial drilling operations at Preese Hall, and recognizing its potential impacts not only on asset capitalization but also on shale gas development across the UK, would have provided a more cautious approach to hydraulic fracturing.

Indeed, seismic activity related to well injection activities is not unique to Cuadrilla's drilling operations. There have been a number of seismic events in the US related to natural gas development. For example, tremors related to the disposal of fracturing wastewater in underground injection wells were recorded in Arkansas, Colorado, Ohio and Texas.<sup>47</sup> In 2011, the US EPA established a technical working group to study the causes and impacts of induced seismic events. A comprehensive report, offering recommendations to states on how to reduce the impacts of these events, is forthcoming.<sup>48</sup> Still, seismic activity as a result of hydraulic fracturing, is a relatively new phenomenon, and increased risks are expected if commercial natural gas production in the UK is realized.

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<sup>44</sup> "Report and recommendations arising out of an in-depth scrutiny review of the impacts of Shale Gas exploration activities in Fylde," Fylde Borough Council, April 2012, accessed March 2, 2013, [http://www.reaf.org.uk/downloads.php?cat\\_id=1&download\\_id=22](http://www.reaf.org.uk/downloads.php?cat_id=1&download_id=22), 50.

<sup>45</sup> Fylde Borough Council.

<sup>46</sup> Andrew Main. "AJ Lucas chief Allan Campbell hopes things will get better as company is set to relist on ASX," *The Australian*, December 28, 2011, accessed March 15, 2013, <http://www.theaustralian.com.au/business/companies/aj-lucas-chief-allan-campbell-hopes-things-will-get-better-as-company-is-set-to-relist-on-asx/story-fn91v9q3-1226231376637>.

<sup>47</sup> Mike Soragahn, "Drilling-related earthquake report stalled in draft stage," *E&E News*, March 19, 2013, accessed March 21, 2013, <http://www.eenews.net/energywire/2013/03/19/archive/2?terms=seismic+regulations+>.

<sup>48</sup> Mike Soragahn, "Drilling-related earthquake report stalled in draft stage."

In the fallout of the controversy, a Freedom and Information Act investigation revealed that the earthquakes were only part of the concerns with Cuadrilla's operations. After the initial 2.3 M earthquake, Cuadrilla discovered significant damage to the well casing.<sup>49</sup> As reported, Cuadrilla suspended fracturing for a month before resuming operations and triggering another earthquake. However, during this period and for months afterward, Cuadrilla did not report the seriousness of the damaged well casing to the DECC. Well casing deformation has the potential to lead to water contamination from fluid and methane migration into overlying aquifers.

The investigation revealed letters to Cuadrilla from Charles Hendry, the energy minister at the time, who indicated that it took six months to report the damages. Hendry stated "I have formed the view that this failure discloses weaknesses in Cuadrilla's performance as a licensee, which need to be addressed."<sup>50</sup> A DECC spokesperson concluded "As part of our investigation, which included Cuadrilla's report, it became clear there was an issue with Cuadrilla's internal reporting procedures."<sup>51</sup>

Cuadrilla responded, noting that the issues caused no real threat to public safety or the environment and that they were not required to report such issues to the DECC. However, the chairman of the company, Lord Browne responded by saying afterward that the company instituted a "clear policy that operational incidents judged to have a potentially serious impact on health and safety or infrastructure integrity will be communicated to DECC immediately, before testing whether such matters are indeed germane."<sup>52</sup>

### 3.3 Fracturing Resumes and Best Practices Emerge

Energy and Climate Change Secretary Ed Davey declared in December 2012 that hydraulic fracturing could resume with these additional seismic monitoring requirements:

- Conduct a prior review of information on seismic risks and the existence of faults in the area;
- Submit to DECC a plan showing how any seismic risks are to be addressed;
- Conduct pre and post fracture seismic monitoring;
- Implement a "traffic light" system to identify unusual seismic activity requiring reassessment, or halting, of operations.<sup>53</sup>

Cuadrilla complied with the new monitoring requirements and instituted the "traffic light" systems at its drill sites. The new monitoring equipment consists of 156 holes around the drilling area, fitted with devices that monitor sound from deep in the rock to analyze vibrations in real time.<sup>54</sup> This helps ensure that hydraulic fracturing operations do not cause perceptible seismic tremors above a certain

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<sup>49</sup> Fiona Harvey, Damian Carrington and Terry Macalister, "Fracking company Cuadrilla halts operations at Lancashire drilling site," *The Guardian*, March 13, 2013, accessible at <http://www.guardian.co.uk/environment/2013/mar/13/fracking-cuadrilla-halts-operations-lancashire>.

<sup>50</sup> Harvey, Carrington, and Macalister, *The Guardian*

<sup>51</sup> Harvey, Carrington, and Macalister, *The Guardian*

<sup>52</sup> Harvey, Carrington, and Macalister, *The Guardian*

<sup>53</sup> "Announcement New controls announced for shale gas exploration," Department of Energy and Climate Change, December 13, 2012, accessed March 19, 2013, <https://www.gov.uk/government/news/new-controls-announced-for-shale-gas-exploration>.

<sup>54</sup> "Cuadrilla brings full monitoring kit to Anna's Road site," Cuadrilla Resources, accessed March 19, 2013, <http://www.cuadrillaresources.com/news/cuadrilla-news/article/cuadrilla-brings-full-monitoring-kit-to-anna%E2%80%99s-road-site/>.

magnitude. In order to establish best practices, Cuadrilla implemented further monitoring devices to illustrate that the fractures do not reach into the overlying aquifer.<sup>55</sup>

Acknowledging that one of the most common concerns with hydraulic fracturing in the US is the lack of regulation to disclose chemicals used in the fracture fluid, Cuadrilla released on its web site in-depth and complete data on the chemical makeup of the fracture fluid. As with most fracture operations, 99% of their fluid is water and sand. In addition, Cuadrilla uses polyacrylamide as a friction reducer, hydrochloric acid as a corrosive, biocide, and small amounts of sodium as a tracing agent.<sup>56</sup> In depth fracture fluid information is listed in Appendix II. Disclosing these chemicals is a valuable practice that increases transparency and can help alleviate concerns about the potentially hazardous nature of the fracture fluid.

In another move to build public confidence and comprehensive environmental protection, Cuadrilla announced in 2013 that it would conduct an EIA on future exploration well sites. This process means that additional hydraulic fracturing will likely not take place until 2014. A company statement outlined the reason: "Cuadrilla is not required to carry out a full Environmental Impact Assessment (EIA) for Anna's Road at this stage. However, we have decided to spare no effort in meeting our exploration targets in an environmentally and socially sustainable manner and in full discussion with the local communities. That's why we will complete a full EIA for each exploration well site where we seek planning consent for drilling, hydraulic fracturing and flow testing."<sup>57</sup>

Cuadrilla submitted EIA scoping documents to hydraulically fracture the Anna's Road well site in early 2013. These documents outlined proposals to study the local geology and seismic safeguards the company will implement at the site.<sup>58</sup> The measures are listed in depth in Appendix III. Reviewing the scoping information it is clear that conducting this type of thorough EIA before fracturing the Preese Hall well likely would have avoided the induced earthquakes and, in turn, the subsequent moratorium on hydraulic fracturing. Over the past three years Cuadrilla has invested an estimated £100 million in the Bowland Shale.<sup>59</sup> This level of investment, without a return on its assets, gives Cuadrilla every reason to take precautionary planning steps to avoid further disruptions in their operations in the long term.

In light of Cuadrilla's drilling activity, the Fylde Borough Council established a Shale Gas Task and Finish Group to investigate concerns from local elected officials and residents. The Group compiled an extensive report on the potential environmental and health impacts of shale gas development in Lancashire and listed recommendations for future activity by Cuadrilla. The report made clear that specific regulations tailored to onshore shale gas extraction were necessary to ensure optimal protections. The Council called for the new regulatory framework to include "well integrity, cement quality, casing strings, annular pressures, surface methane detectors, formation integrity tests, cement bond logs, tests and thresholds for seismic activity, post-tremor actions, sourcing of water for fracking,

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<sup>55</sup> "Cuadrilla brings full monitoring kit to Anna's Road site," Cuadrilla Resources.

<sup>56</sup> "Fracturing Fluid," Cuadrilla Resources, accessed March 1, 2013, <http://www.cuadrillaresources.com/what-we-do/hydraulic-fracturing/fracturing-fluid/>.

<sup>57</sup> Harvey, Carrington, and Macalister, "Fracking company Cuadrilla halts operations at Lancashire drilling site."

<sup>58</sup> Cuadrilla Resources Limited, *Scoping Report Related to Environmental Statement for Hydraulic Fracturing*, January 2013, accessed March 1, 2013, <http://planningregister.lancashire.gov.uk/PlanAppDisp.aspx?recno=6221#>.

<sup>59</sup> Harvey, Carrington, and Macalister, "Fracking company Cuadrilla halts operations at Lancashire drilling site."



storage, disposal and recycling of produced water and the testing of local bore holes/wells before and after operational activities.”<sup>60</sup>

Crediting Cuadrilla’s performance aside from the triggered earthquakes, the report noted that specific regulations were needed because “in the absence of any legislation/ regulations, there would be concerns that other operational companies may not keep to the same standards/ best practice as set by Cuadrilla.”<sup>61</sup>

## 4. Conclusions and Recommendations

In this ongoing case, there are a number of different areas in which federal policy, local policy, and management decisions should have coalesced differently. Cuadrilla should have understood its position as a shale gas pioneer in the UK and proceeded with excess caution. Part of an abundantly cautious and thorough exploration process should have included a robust EIA of the Preese Hall site before fracturing, even though it was not statutorily required. Local oversight similarly should have grasped the magnitude of the first hydraulic fracturing operations in shale formation making up the foundation their town. To that end, the Lancashire County Council should have asked for a more in-depth analysis of the geology and seismic history of the area. The Environmental Agency could have required a permit for exploratory operations. If these measures were taken in 2011, shale gas development could have been approaching commercial levels and redefining energy security strategy in the UK.

Understanding what Cuadrilla did wrong and now looking forward, UK shale gas production is still going to emerge much differently than in North America. Cuadrilla faces several challenges: the country is densely populated, the geology is complicated, mineral rights belong to The Crown, and many influential environmental groups are active. These challenges need to and can be handled in a way that leads to the most beneficial outcome for the industry, the public, and the country at large.

If public concerns and questions are sufficiently addressed, then shale gas in the UK may have a prosperous future. If Cuadrilla again exhibits imprudent oversight and poor management communication on any aspect of the exploration process, the future of hydraulic fracturing and shale gas could be substantially impaired.

### 4.1 Require Environmental Impact Assessments for Exploratory Wells

After increasing public pressure, Cuadrilla introduced a best practice of requiring an EIA for exploratory wells when the company restarted operations 2013. Although this measure likely would have avoided the earthquakes it is still not statutorily required. DECC should transition this practice into law. As the Fylde Borough Council noted, and understanding the potential for commercial production, new companies to the area may not follow the same best practices now implemented by Cuadrilla.

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<sup>60</sup> Fylde Borough Council, Final Report Shale Gas Task and Finish Group, May 17, 2012., accessed March 1, 2013, [http://www.reaf.org.uk/downloads.php?cat\\_id=1&download\\_id=22](http://www.reaf.org.uk/downloads.php?cat_id=1&download_id=22).

<sup>61</sup> Fylde Borough Council, 28.

## 4.2 Develop Regulations Specific to Onshore Shale Exploration

There is a need for specific onshore shale regulations from the DECC, which deals with issues unique to unconventional natural gas production. This includes mandatory public consultations at all phases of the permitting process, wastewater disposal plans, and attention to quality of life parameters such as truck traffic and drilling noise. Strict monitoring and oversight is also necessary, including random and unannounced well site visits from regulators. This should not be an onerous oversight requirement for the DECC given the relatively small amount of drilling rigs in the country.

Modeling the new regulations on the International Energy Agency's Golden Rules for Gas would be a good place to start. The report's authors indicate that implementing these best practices, compiled from around the industry; on typical shale gas wells would only increase costs by seven percent.<sup>62</sup> This margin is substantially lower than the millions of dollars lost in delayed asset capitalization, seismic monitoring costs, and squandered investment options already suffered by Cuadrilla. Additionally, the DECC should develop the regulations in a collaborative effort between environmental and industry groups to accurately address the needs and concerns of all stakeholders. This measured and realistic approach to natural gas development will ensure the process proceeds in a manner that is both cost-effective, and highly protective of public health and the environment.

## 4.3 Reduce the Seismic Monitoring Threshold

Cuadrilla's recommendations after its study of the seismic events indicated that a monitoring system should be put in place to mitigate future risks. As such, the report suggested that the trigger point for the traffic light monitoring system to shut off fracturing operations be set at 1.7 M. The British Geological Study indicated that the maximum allowable seismic level be placed much lower at 0.5 M. In the first scenario, the stated trigger threshold would have required no action prior to the 2011 earthquakes. The lower level will ensure well integrity protection and greatly reduce or eliminate public disturbance by seismic events.

## 4.4 Improve Risk Communication

Cuadrilla must improve its risk communication by managing not only the actual impacts but also the public perception of shale gas development. This entails balancing outrage in proportion to hazard. The seismic events were largely inconsequential, causing little surface damage and minimal public disturbance outside the immediate area. Nevertheless, the lack of due diligence prior to hydraulic fracturing led to an 18-month ban on potential production as well as heightened public concern that could have been avoided. The earthquakes galvanized opposition groups, and Cuadrilla did not properly communicate the level of risk the earthquakes posed to local communities nor how they would mitigate future risks.

It is important for Cuadrilla to go above and beyond regulatory requirements and civic engagement in this new era of natural gas development. Acute public awareness of industrial activity in densely populated areas makes it important to reexamine what it means to take civic concerns into account

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<sup>62</sup> International Energy Agency, "IEA sets out the 'Golden Rules' needed to usher in a Golden Age of Gas," May 29, 2012, accessed March 1, 2013, <http://www.iea.org/newsroomandevents/pressreleases/2012/may/name,27266,en.html>.

when commencing hydraulic fracturing operations. In this way, Cuadrilla should recruit as many employees as possible from local areas, sponsor local events, and continue to hold public information days showcasing a commitment to transparency and interest in community stakeholders.

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## Appendix

### I. Hydraulic Fracturing Description<sup>63</sup>

Gas exploration companies drill boreholes down into the gas-bearing shales, thousands of metres below the surface. Then, the drilling continues horizontally for thousands of metres.

The borehole is lined with a steel and concrete casing. A 'perforating gun' is lowered into the borehole to make small holes into the concrete casing; explosive charges from the gun create perforations in the borehole casing.

A mixture of water, chemicals and sand is pumped — at very high pressure — along the borehole and through the perforations, which fracture the shale. The water opens up cracks in the rock, and the sand grains lodge into the spaces and keep them open, allowing the released gas to flow out of the rocks and to travel back up the borehole casing.

High volumes of water — up to a million gallons — are required to fracture, and hold open, the shales. About a third of the 'waste' water, containing treatments, sands and other chemicals, is returned to the surface.

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<sup>63</sup> "British Geological Survey House of Commons Report December 2012," British Geological Survey, accessed March 1, 2013, <http://www.bgs.ac.uk/research/energy/shalegas.html>.

## II. Cuadrilla Fracture Fluid Composition<sup>64</sup>

### FRACTURING FLUID

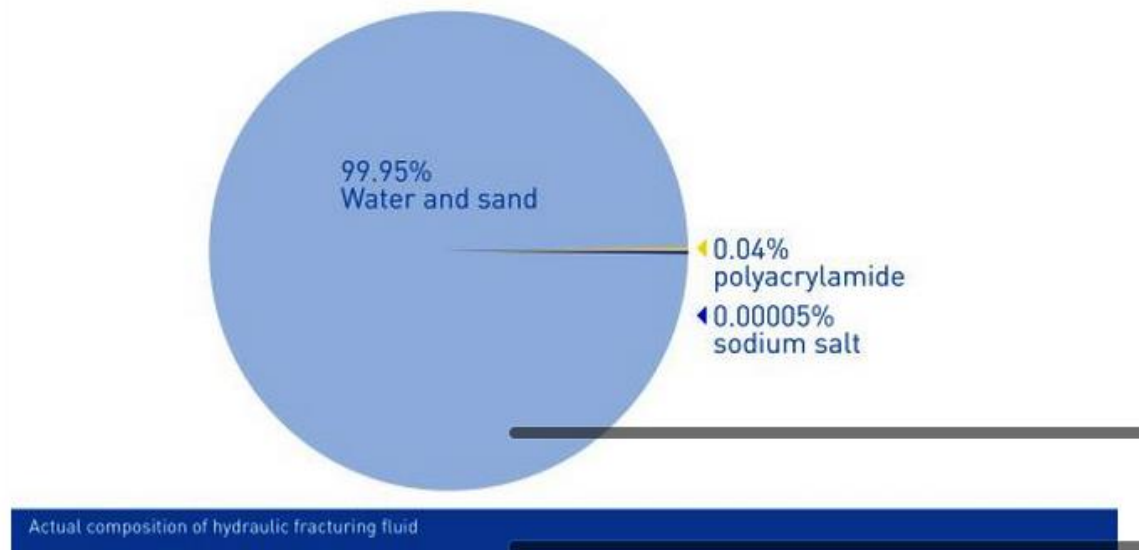
During Hydraulic fracturing, fracturing fluid is released at high pressure into the rock formation to create millimetre-sized cracks.

Before hydraulic fracturing takes place, the EA must approve the proposed composition of Cuadrilla's fracturing fluid, along with fresh water and sand includes:

- Polyacrylamide friction reducer
- Hydrochloric acid
- Biocide
- Sodium salt

None of Cuadrilla's fracturing fluid contains hazardous or toxic components.

So far, Cuadrilla has only used a friction reducer along with a miniscule amount of salt, which acts as a tracer.



<sup>64</sup> "Fracture Fluid," Cuadrilla Resources, accessed March 2, 2013, <http://www.cuadrillaresources.com/wp-content/uploads/2012/02/Chemical-Disclosure-PH-1.jpg>.



### III. EIA Scoping Information on Seismic Monitoring<sup>65</sup>

#### 4.2 Seismic Monitoring

4.2.1 In association with the shale gas fracturing and testing of the well, and following an Induced Seismicity Mitigation Report on the hydraulic fracturing process by a research panel engaged by the Department of Energy and Climate Change, a series of seismic monitoring safeguards have been put in place. This will ensure that the proposed testing operations are undertaken in a safe and controlled manner having regard to the localised environment and to prevent tremors such as those that occurred at the Preese Hall well site during the late Spring of 2011.

4.2.2 As outlined in the Induced Seismicity Mitigation Report the hydraulic fracture procedure will include a smaller pre-injection and monitoring stage before the main injection. Additionally, the hydraulic fracture growth and direction will be monitored in order to determine automatic locations and magnitudes of any seismic events in near real time.

4.2.3 The system of seismic monitoring will include the following items:

- “Microseismic” monitoring sites – There are 88 microseismic monitors buried in shallow wells (60 to 90 m deep). They measure extremely small seismic events associated with creating hydraulic fractures in the shale. These seismic events are thousands of times smaller than what can be felt at the surface by people, or even by conventional seismic monitors. The microsesimic data are used to conduct “fracture mapping”, which is basically an estimate of the fracture azimuth and the fracture geometry (length, width and height). We use this to calculate the “stimulated rock volume” or “SRV”. We then use that number to optimize future designs, including parameters such as spacing between frac stages and volumes of fluid pumped per stage. Additionally the fracture mapping allows the company to determine the fracture height, and ultimately confirms that the fractures are confined to intervals very deep in the well, and do not grow anywhere near the shallow aquifers;
- “Tilt” monitoring sites - There are 60 tiltmeter units buried in shallow wells (10 m). The tiltmeter survey measures extremely small deformations at the surface, which provides a very reliable method of determining the maximum upward growth of the fracture. The data are also used as an alternate way to conduct fracture mapping, to allow for optimization in frac design;
- “Real Time” monitoring sites - A “traffic light” system is proposed which relies on 4 seismic monitors surrounding the well. The purpose of these

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<sup>65</sup>“Scoping Report Relating to Environmental State for Hydraulic Fracturing,” Cuadrilla Resources, January 2013, accessed March 1, 2013, <http://planningregister.lancashire.gov.uk/Attachments/6221/Part%201%20Scoping%20Report%2011.01.2013.pdf>.

are to provide a real time method of spotting “abnormal seismicity”, should it occur during the course of injecting fluid during a fracture stage. If the abnormal seismicity reaches the “red light” level, then the company will immediately terminate the fracture operations on that particular stage, before the seismicity can escalate to a level that may disturb local residents. There are also realtime monitoring stations in the microseismic array which can feed into and complement the surface monitoring data set.

- 4.2.4 These sites will have already been installed in a pre-determined pattern designed to provide a 360 degree coverage of an area up to 5 kilometres from the well location. When all hydraulic fracturing processes are operating these devices will record the seismic activity of the well site, and surrounding strata, during the hydraulic fracturing process and if the magnitude of seismic activity reaches a pre-determined level the hydraulic fracturing operations will be suspended.

## **5.5 Details of The Proposed Hydraulic Fracturing Programme Including Induced Seismicity**

- 5.5.1 This section will describe the testing operations for which planning permission is sought. The description of the development will form the basis against which the impacts have been assessed during the EIA.

- 5.5.2 With regards to seismicity induced by the hydraulic fracturing process the following will be detailed within the EIA. These points are taken from shared conclusions of the “geomechanics study of Bowland shale seismicity” conducted on behalf of Cuadrilla Resources Ltd and the “review and recommendations for induced seismic mitigation” conducted on behalf of DECC.

- Mechanism for induced seismicity
- Maximum magnitude of any future possible induced seismicity
- Seismic hazard related to induced seismicity
- Casing deformation and wellbore integrity
- Potential for upward fluid migration

- 5.5.3 These points will then be addressed outlining the processes in place to mitigate any possibility of felt induced seismicity and upward fluid migration associated with hydraulic fracturing. These mitigation measures will include:

- A seismic array automated to perform a traffic light system limiting induced seismicity to a controlled threshold
- Detailed microseismic analysis to monitor in real time fracture evolution
- Detailed nano radian ground deformation analysis to confirm fracture evolution
- A limited design on the volume and rate of hydraulic fracture job
- A Set flow back period following a hydraulic stimulation job.

# The Camisea Natural Gas Project in Peru

Controversial and Financial Implications

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## Abstract

The Camisea Natural Gas Project in Southern Peru is arguably one of the world's most controversial extractive industry projects. It consists of multiple operations – extraction of natural gas, transportation through two pipelines, and distribution facilities on the coast -controlled by a select group of multinational companies known as the consortium.

Due to operations in the fragile environments where the Camisea project is located, the Peruvian government has initiated new regulations to protect the country's unique environment and disenfranchised communities.<sup>1</sup> Despite these environmental safety and mitigation measures, the consortium's practices have arguably caused negative environmental and social harm among diverse stakeholder groups, including local indigenous groups in "voluntary isolation" such as the Machiguenga, Yine, Nanti, Nahua and Kirineri.

The consortium's poor CSR practices have arguably caused deforestation in the Amazon's primary forests, contaminated waterways, food insecurity among indigenous communities, waste, and pollution. Inadequate EIA processes and approval has allowed the consortium to "cut corners" and use inadequate technology throughout upstream and downstream operations, which in multiple instances, lead to spills in the TGP pipeline and financial setbacks for the TGP consortium.

As an extremely large and complex project with a political agenda, it became difficult to monitor and enforce sound environmental and social practices throughout the project. In certain situations, this allowed the consortium to continue operations without proper monitoring, appropriate environmental practices, and sound stakeholder engagement.<sup>2</sup> By examining the positive and negative impacts of this complex project, this report will provide several recommendations to promote greater environmental and social responsibility among oil and gas companies doing business in this region.

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<sup>1</sup> Inter-American Development Bank (October 29, 2007), "Report evaluates economic benefits of Camisea Project," accessed on March 3, 2013, <http://www.iadb.org/en/news/webstories/2007-10-29/report-evaluates-economic-benefits-of-camisea-project,4111.html>.

<sup>2</sup> Valqui, Michael, Riveros, Juan Carlos, and Brehaut, Ivan, World Wildlife Fund Macroeconomics Program Office (November 2005), "Hydrocarbon Development in the Lower Urubamba Region, Peru: Learning from Camisea," accessed on March 3, 2013, <assets.panda.org/downloads/sevaperu.pdf>.

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## Acronyms

AIDSESP	Asociacion Interetnica de Desarrollo de la Selva Peruana
BNDDES	Brazilian National Development Bank
CAF	Andean Development Corporation
COMARU	Consejo Machiguenga del Río Urubamba
CSR	Corporate social responsibility
EDF	Environmental Defense Fund
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
Ex-Im	United States Export Import Bank
FENAMAD	Federacion Nativa del rio Madre de Dios y Afluentes
GTCI	Camisea Inter-Institutional Technical Coordination Group
IDB	Inter-American Development Bank
IFI	International Financial Institutions
LNG	Liquid natural gas
MEM	Ministry of Energy and Mines
MNCs	Multinational Corporations
ORAU	Organizacion Regional Aidesep
OSINERG	Oversight Agency for Energy Investments
OPIC	Overseas Private Investment Corporation (OPIC)
PPA	Participatory rural appraisal
SNG	Sub-national governments
TGP	Transportadora de Gas del Peru
WWF	World Wildlife Fund
WRI	World Resource Institute

## 1. Introduction

The Camisea Gas Project is Peru's largest energy project, in terms of size and investment, and is arguably one of the most controversial natural gas projects in the world. Since its inception in 2004, the project has consisted of three different components – upstream production, downstream production, and distribution – which extract, transport and export natural gas from the Urubamba Valley in the southeastern part of the Peruvian Amazon Rainforest to the Peruvian market and other parts of the world (See Figure 1).<sup>3</sup> The current project is financed through a public-private partnership, which includes a consortium of multinational corporations (MNCs), private banks, the U.S. Export-Import Agency and international financial institutions (IFIs). In 2000, a consortium led by Argentina's Pluspetrol won a bid from the Peruvian central government to operate the upstream portion of the project, while Argentina's Techint owns the majority of the downstream operations and Tractebel owns and operates the main distribution facility. Major operations are taking place in biologically sensitive areas, such as the Peruvian Amazon Rainforest, a biological hotspot that is home to many indigenous tribes; operations also take place in the buffer zone of the Paracas National Reserve, a protected marine reserve.<sup>4</sup> Even with new environmental regulations and safeguards put in place by the Peruvian Government and IFIs, there has been a lack of environmental responsibility and sound stakeholder engagement from the consortium, leading to conflict with various stakeholders. Despite the many benefits from this project, continuous conflicts continue due to mistrust, miscommunication, and a lack of transparency and accountability, mainly with the local communities. As a result, this has negatively affected the reputation and profitability of the consortium and more broadly, the project as a whole.

## 2. Background

### 2.1 Importance to Peru's national energy agenda

Since the discovery of large natural gas reserves in the Peruvian Amazon in the 1980s, Peru's national energy security policies have heavily relied on natural gas. Peru has proven natural gas reserves of 12.5 trillion cubic feet, with an estimated 8 to 11 trillion cubic feet within the area known as the Camisea gas fields.<sup>5</sup> The government's national energy agenda focuses on increasing the country's gas-fired electricity generation from 0.3 GW to 6.0 GW by 2030 with natural gas making up 44% of the electricity generation mix.<sup>6</sup> Through the exploitation of the Camisea gas fields, Peru focused on establishing its national energy market to meet increasing national consumption and eventually increase natural gas

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<sup>3</sup> Inter-American Development Bank (June 2003), "Peru: Camisea Project Environmental and Social Impact Report," accessed on March 3, 2013, <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35379544>.

<sup>4</sup> Pluspetrol (2010), "Environmental and Social Sustainability Report," Accessed on March 3, 2013 <http://www.pluspetrol.net/enfsocsustreport2010.pdf>, 8.

<sup>5</sup> U.S. Energy Information Administration (2012), "Peru: Background," Retrieved from <http://www.eia.gov/countries/cab.cfm?fips=PE>, (May 1, 2012), (and) Hydrocarbons-technology.com, "Camisea Gas Project, Peru," Accessed on March 3, 2013 <http://www.hydrocarbons-technology.com/projects/camisea/>.

<sup>6</sup> UK Trade & Investments (2010), "Sector briefing: Power Opportunities in Peru," accessed on April 1, 2013, <http://www.globaltrade.net/f/business/pdf/Peru/Investing-Power-Opportunities.html>, 3.

exports. The Camisea project is also projected to add one percentage point to the country's rate of annual GDP growth.<sup>7</sup>

According to the central government, the Camisea project has the potential to contribute in a number of ways. Camisea is considered the nation's most important natural gas project due to its sheer size. It has the potential to produce \$4.1 billion in energy cost savings for the country and reducing the air pollution in Lima by replacing petroleum with cleaner natural gas.<sup>8</sup> In addition, the Camisea is said to make Peru a net exporter of energy and increase economic development throughout the entire country. With the increase of natural gas exploitation throughout the country, the central government developed new policies and practices to mitigate the environmental risks and manage the influx of foreign investment.

## 2.2 The political stage in Peru

The political and social environment in Peru has gone through many changes since the country's large discovery of natural gas. In the 1980s, Peru lacked enforceable environmental laws and regulations. With an abundance of natural resources, this made the country highly attractive to foreign investors, such as Shell and Exxon Mobil. It wasn't until 1990 when the first comprehensive environmental law, the

### Figure 1.

#### **Upstream production:**

This sector includes the exploration for and extraction of petroleum and natural gas by means of drilling and operating exploratory wells and gas fields.

#### **Downstream production:**

This sector includes the transportation and refining of petroleum crude oil, natural gas, natural gas liquids and assorted byproducts.

#### **Distribution:**

This sector consists of the selling and distribution of processed natural gas and other products for internal use or through export. Distribution processes are sometimes included in the downstream processes.

Source: Inter-American Development Bank, (March 25, 2004), "Camisea Project: Overview," Accessed on March 4, 2013 <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=462033>.

Environmental and Natural Resources Code (Legislative Decree 613) was formed. Soon thereafter, in 1993, the first hydrocarbon environmental legislation was ratified. This new legislation put in place new

<sup>7</sup> Hennessy, Hannah, BBC News (August 10, 2004), "Peru prepares for the gas age," accessed on March 3, 2013, [http://thewe.cc/weplanet/news/camisea\\_project.htm](http://thewe.cc/weplanet/news/camisea_project.htm).

<sup>8</sup> Inter-American Development Bank (June 2004), "Report Summarizing Performance of Environmental and Social Commitments in the Camisea Project," accessed on April 1, 2013, <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=884224>, 5.



environmental protection rules and required hydrocarbon companies to obtain environmental authorization prior to operations in a specific area.<sup>9</sup>

In addition to these environmental laws, the government has implemented new policies and processes relating to fiscal decentralization and transparency that have altered the landscape of foreign investment in Peru's extractive resources. In the early 1990s, Peru's fiscal decentralization increased the role of sub-national governments (SNGs) in the collection and management of revenue associated with extractive industries within their jurisdictions. With full implementation in 2002, decentralization reforms were set up to support local development and alleviate poverty across the country. Yet, two of the country's poorest regions that were directly affected by a part of the Camisea project, Ayacucho and Huancavelica, still trail behind in key development indicators such as literacy (about one-third of women are illiterate) and basic technology infrastructure.<sup>10</sup>

New integrated Environmental Impact Assessment (EIA) legislation was passed in 2001 with EIA requirements being approved by the Ministry of Energy and Mines.<sup>11</sup> Then in 2008, new EIA legislation was issued at the federal level due to the new free trade agreement between the United States and Peru. However, the new modifications were difficult to implement at the local level, which led sectorial authorities to continue enforcing sectorial EIA regulations.<sup>12</sup> This could possibly be due to miscommunication as well as lack of resources and training on the new regulations.

### 2.3 Environmental and social context

The upstream portion of the Camisea project, consisting of the Cashiriari and San Martin fields as well as the Malvinas Gas Processing Plant, is situated deep in the southeastern part of the Peruvian Amazon Rainforest in the Lower Urubamba River Basin and the Cordillera of Vilcabamba, approximately 268 miles east of Lima.<sup>13</sup> This area is considered "one of the world's most environmentally and socially sensitive areas" due to its rich biodiversity and large number of indigenous communities.<sup>14</sup> According to Conservation International, the Cordillera of Vilcabamba is one of twenty-five global "hotspots" for conservation.<sup>15</sup> Major operations also take place in the buffer zone of the Manu National Park and within the Nahua-Kupakagori Territorial Reserve.<sup>16</sup> Today, the downstream portion of Camisea consists of two main pipelines. One pipeline traverses across the Andes to the port city of Pico, where a Natural

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<sup>9</sup> Quiroz, Cecilia, (–), "Evolution of environmental regulations in the hydrocarbons (sector)," accessed on March 3, 2013, [http://www.perenco-peru.com/fileadmin/Evolution\\_of\\_environmental\\_regulations\\_in\\_the\\_hydrocarbons\\_sector.pdf](http://www.perenco-peru.com/fileadmin/Evolution_of_environmental_regulations_in_the_hydrocarbons_sector.pdf).

<sup>10</sup> Greenspan, Emily, Oxfam America (February 2013), "From Pennsylvania to Peru: "Promised Land" Movie Highlights Universal Extraction Challenges," accessed on March 3, 2013, <http://politicsofpoverty.oxfamamerica.org/2013/02/05/from-pennsylvania-to-peru/>.

<sup>11</sup> Shoobridge, Diego and Kapila, Sachin, United Nations University (August 15, 2006), "Environmental impact assessment of the Camisea Gas Project: the importance of consultation and local participation," accessed on March 3, 2013, [http://eia.unu.edu/wiki/index.php/Environmental\\_impact\\_assessment\\_of\\_the\\_Camisea\\_Gas\\_Project:\\_the\\_importance\\_of\\_consultation\\_and\\_local\\_participation](http://eia.unu.edu/wiki/index.php/Environmental_impact_assessment_of_the_Camisea_Gas_Project:_the_importance_of_consultation_and_local_participation).

<sup>12</sup> Aldana, Martha Ines (2011), "Track D: Improving Implementation of Environmental Legislation," accessed on March 3, 2013, [http://inece.org/conference/9/proceedings/48\\_Aldana.pdf](http://inece.org/conference/9/proceedings/48_Aldana.pdf), 416.

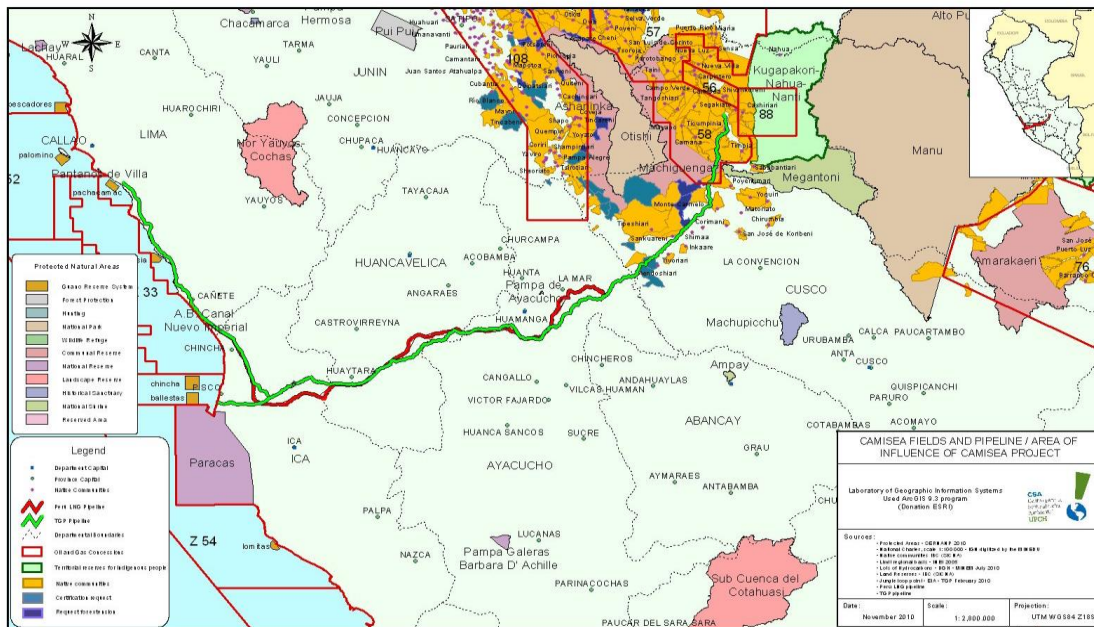
<sup>13</sup> PeruPetro, Alexander's Gas & Oil Connections (June 2, 2004), "Camisea: A key project for the Peruvian economy," accessed on March 3, 2013, <http://www.gasandoil.com/news/2004/06/ntl42455>.

<sup>14</sup> Caffrey, Patricia, Amazon Watch, (April 1, 2002), "An Independent Environmental and Social Assessment of the Camisea Gas Project," accessed on March 3, 2013, <http://amazonwatch.org/news/2002/0401-an-independent-environmental-and-social-assessment-of-the-camisea-gas-project--by-patricia-b-caffrey>.

<sup>15</sup> Caffrey, Patricia, Amazon Watch, (2010), "An Independent Environmental and Social Assessment of the Camisea Gas Project."

<sup>16</sup> Pluspetrol, "Environmental and Social Sustainability Report," accessed on March 3, 2013, <http://www.pluspetrol.net/enfocsustreport2010.pdf>, 8.

Gas Liquids Fractionation Plant and a Maritime Delivery Terminal are located, and then continues up the coast to Lima.<sup>17</sup> The second and newest pipeline connects operations in the Amazon to the Melchorita Plant, a natural gas liquefaction plant (See Figure 2). These pipelines will be discussed in more detail in the section titled *The Project*. Along the way, the pipelines pass over mountainous terrain and through several poor communities.



**Figure 2.** Diagram of the Camisea project. Source: South Peru Panel (—). “Area of Influence of Camisea Project.” Accessed on April 1, 2013. <http://www.southperupanel.org/img/1base.jpg>.

Social disputes arose from the very beginning of the Camisea project, when Shell first conducted exploratory testing in the mid-1980s. During this time, the Nahua indigenous tribe experienced epidemics of whooping cough and influenza through contact with the outside workers. As a result, approximately 50% of the population died and the political and social risks associated with the project quickly escalated. This set the tone for current relationships between the consortium and affected communities.

## 2.4 The project

Royal Dutch/Shell (“Shell”) first discovered the Camisea gas reserves during exploration activities in the mid-1980s. The gas fields, Cashiriari and San Martin, are mainly referred to as Blocks 88A and 88B (collectively, Block 88), in the region of Cusco. Together, the proven reserves from these fields are

<sup>17</sup> Pluspetrol (2010), “Environmental and Social Sustainability Report,” accessed on March 3, 2013, <http://www.pluspetrol.net/enfocsustreport2010.pdf>, 8.

approximately 8.12 trillion cubic feet of gas and 516 million barrels of liquid natural gas (LNG).<sup>18</sup> The Camisea gas reserves can also be found in what is known as Block 56, Block 58, and Block 57 but for purposes of this study we will mainly refer to Block 88.<sup>19</sup> After investing over \$250 million in the project, Shell and its partner Mobil decided to withdraw from the project in 1998 due to alleged unresolved differences with the Peruvian Government.<sup>20</sup> This prompted the Peruvian Government to divide the project into three parts and issue bids for each.

In early 2000, the Peruvian government awarded a 40-year production license to a consortium led by Pluspetrol, an Argentine Oil Company, to drill in Block 88. Financing for the three components are estimated to be US\$730 million for the upstream process, US\$850 million for the downstream process, and US\$71 million for the distribution process.<sup>21</sup> Within the first year of drilling in 2002, the Pluspetrol-led consortium had invested US\$250 million with approximately US\$1.6 billion in investment anticipated during its 40-year contract.<sup>22</sup> There is also a 33-year contract with the consortium for the transportation and distribution side of the project.<sup>23</sup>

A large part of the Camisea project consists of what is known as Peru LNG - the 336-mile pipeline that carries LNG at a capacity of 450 million cubic feet per day to an LNG Plant and export facility on the Peruvian coast.<sup>24</sup> Hunt Oil Company, a Texas-based oil company, owned the majority (50%) of the project when development began in 2005. The Peru LNG pipeline connects to the previously constructed 444-mile pipeline, which was awarded to the Transportadora de Gas del Peru (TGP) consortium with primary ownership going to Techint, an Argentine-Italian company.<sup>25</sup> A chart illustrating the divided ownership of the Camisea project can be found in Figure 3. Although each part of the Camisea project has a different mix of investors, Pluspetrol, Techint, Hunt Oil, and SK Corp have the largest stake in both upstream and downstream operations.<sup>26</sup> Belgium's Tractebel owns and operates the majority of distribution operations.

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<sup>18</sup> Munilla, Isabel, World Resource Institute, BIC, Oxfam America (2010), "People, Power, and Pipelines: Lessons from Peru in the governance of gas production revenues," accessed on March 3, 2013, [http://www.bicusa.org/wp-content/uploads/2013/01/People\\_Power\\_Pipelines.pdf](http://www.bicusa.org/wp-content/uploads/2013/01/People_Power_Pipelines.pdf), 19.

<sup>19</sup> Munilla, Isabel, "People, Power, and Pipelines: Lessons from Peru in the governance of gas production revenues," Page 65.

<sup>20</sup> ECA Watch (January 25, 2001), "Peru. Project: Camisea Gas Field and Pipeline Project," accessed on March 3, 2013, [http://www.eca-watch.org/problems/americas/peru/2001\\_01\\_25\\_sace.html](http://www.eca-watch.org/problems/americas/peru/2001_01_25_sace.html).

<sup>21</sup> Inter-American Development Bank (June 2004), "Report Summarizing Performance of Environmental and Social Commitments in the Camisea Project," accessed on April 1, 2013, <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=884224>, 2.

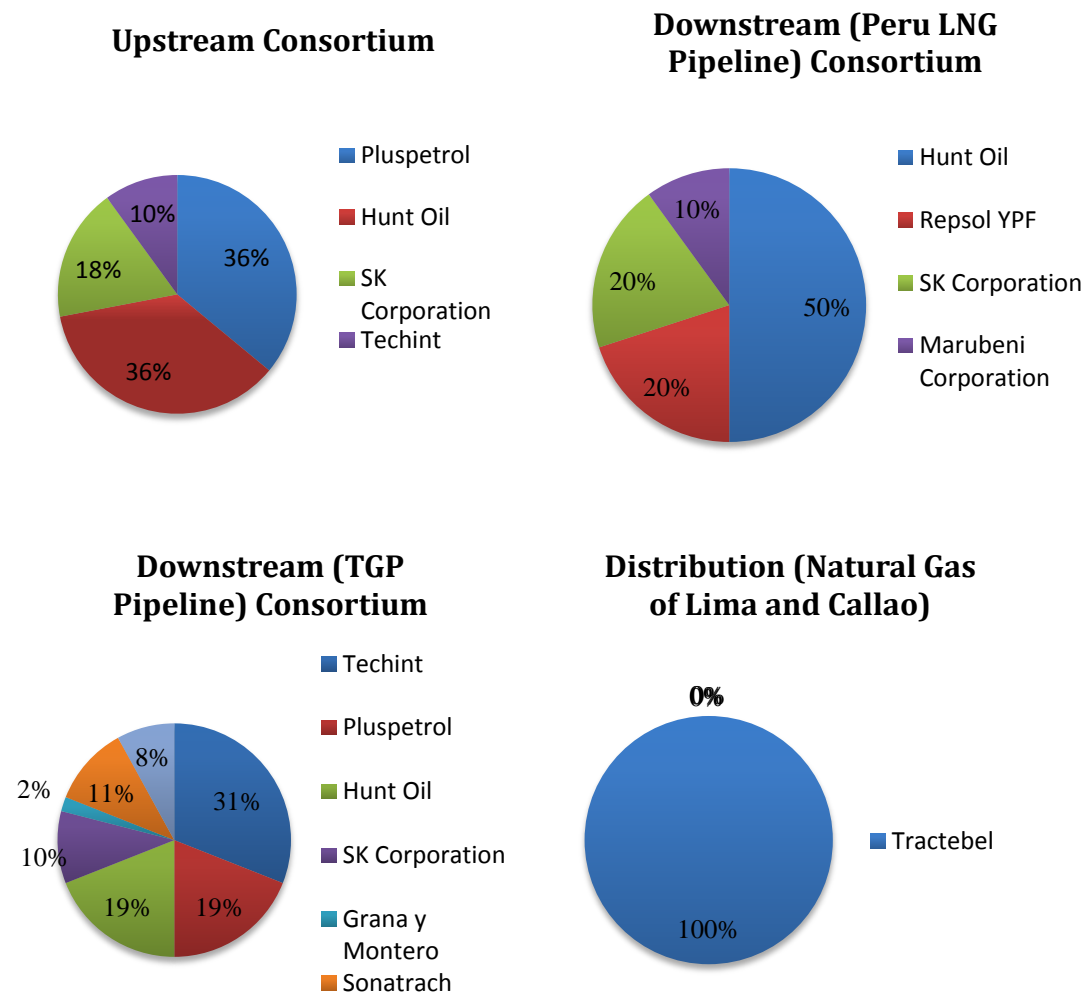
<sup>22</sup> Van Gelder, Jan Willem (2003), "The Financing of the Camisea Project: A Research Paper Prepared for Focus on Finance," accessed on March 3, 2013, [www.profundo.nl/files/download/BankTrack0302b.pdf](http://www.profundo.nl/files/download/BankTrack0302b.pdf).

<sup>23</sup> Pipelines International (December 2009), "Peru to complete Camisea pipeline expansion ahead of schedule," accessed on March 3, 2013, [http://pipelinesinternational.com/news/peru\\_to\\_complete\\_camisea\\_pipeline\\_expansion\\_ahead\\_of\\_schedule/009317/](http://pipelinesinternational.com/news/peru_to_complete_camisea_pipeline_expansion_ahead_of_schedule/009317/).

<sup>24</sup> U.S. Energy Information Administration (May 1, 2012), "Peru: Background," accessed on March 3, 2013, <http://www.eia.gov/countries/cab.cfm?fips=PE>.

<sup>25</sup> U.S. Energy Information Administration, "Peru: Background."

<sup>26</sup> Munilla, Isabel, World Resource Institute, BIC, Oxfam America (2010), "People, Power, and Pipelines: Lessons from Peru in the governance of gas production revenues," accessed on March 3, 2013, [http://www.bicusa.org/wp-content/uploads/2013/01/People\\_Power\\_Pipelines.pdf](http://www.bicusa.org/wp-content/uploads/2013/01/People_Power_Pipelines.pdf), 19.



**Figure 3.** Camisea ownership structure. Source: Cannock, Geoffrey (2004). *Gas Market Integration in the Southern Cone*, Washington D.C.: IDB Sustainable Development Department. 159.

## 2.5 Stakeholders

### 2.5.1 Major consortium players

The most important investors within the consortia have a history of poor environmental and social records in the region.<sup>27</sup> This study will highlight several companies, which together, hold a majority stake in the project. **Pluspetrol** is an oil and gas company from Argentina that has major operations in Bolivia, Venezuela, Columbia and Peru. It is the largest producer of hydrocarbons in Peru.<sup>28</sup> In its 2010 Corporate Social Responsibility (CSR) report, Pluspetrol stated its commitment to the Extractive Industries

<sup>27</sup> Amazon Watch (2006), "Peru: Camisea Natural Gas Project – Project Overview," accessed on March 3, 2013 <http://www.ibcperu.org/doc/isis/5771.pdf>.

<sup>28</sup> Munilla, Isabel, World Resource Institute, BIC, Oxfam America (2010), "People, Power, and Pipelines: Lessons from Peru in the governance of gas production revenues," accessed on March 3, 2013, [http://www.bicusa.org/wp-content/uploads/2013/01/People\\_Power\\_Pipelines.pdf](http://www.bicusa.org/wp-content/uploads/2013/01/People_Power_Pipelines.pdf), 64.

Transparency Initiative (EITI), an initiative that increases transparency of revenue and payments, within the consortium. Yet, the company is not listed by EITI as a supporting company.<sup>29</sup>

**Hunt Oil** is headquartered in the United States and contained US\$4 billion in revenue. The company leads all major operations for the LNG pipeline. **Techint** is an engineering and construction company from Argentina that was contracted to build the TGP pipeline. **SK Energy** is a conglomerate based in South Korea that has multiple businesses in the chemical, petroleum and energy business as well as in the wireless mobile phone industry. SK energy has investments in the upstream and downstream components of the Camisea project. **Repsol S.A.** is a Spanish oil and gas company that has ownership stake in the upstream consortium and in the Peru LNG project. Among these firms, Repsol S.A. is listed by EITI as the sole supporter of the EITI.<sup>30</sup>

### 2.5.2 International financial institutions

Along with private financing from the consortium, the Camisea project receives financing from public and private financial institutions. In September 2003, the Inter-American Development Bank (IDB) approved a US\$75 million loan to finance a portion of the transport component, Transportadora de Gas del Peru (TGP) pipeline. Other regional public banks, including but not limited to, the Andean Development Corporation (CAF) who contributed US\$50 million and the Brazilian Development Bank (BNDES) who contributed US\$103 million, assisted IDB in co-financing the TGP pipeline project. Initial financing from the IDB was only for the downstream process.<sup>31</sup> Peru's Banco de Credito provided US\$270 million by selling domestic bonds.<sup>32</sup> During this time, IDB also loaned US\$5 million to strengthen the government's ability to monitor and ensure compliance with the project's environmental and social safeguards.<sup>33</sup>

### 2.5.3 Regulators

Due to the environmental and social risks associated with the Camisea project, Peru's central government developed multiple regulatory agencies that would oversee all energy sector activities. Two of the most important organizations included the Ministry of Energy and Mines (MEM) and the Oversight Agency for Energy Investments (OSINERG). MEM is an executive body within the central government of Peru that manages 15 governmental agencies as well as regional and local governments that supervise the Camisea project and the environmental and social impacts that this project has on their specific area.<sup>34</sup> All environmental impact studies and assessments pertaining to the energy sectors need to be approved by MEM so that the project can continue.<sup>35</sup> In 2002, MEM created a group called

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<sup>29</sup> Pluspetrol (2010), "Environmental and Social Sustainability Report," accessed on March 3, 2013, <http://www.pluspetrol.net/enfsocsustreport2010.pdf>, Page 10.; EITI website, (-), "Stakeholders," accessed on March 3, 2013, [http://eiti.org/supporters/companies?page=2\\_](http://eiti.org/supporters/companies?page=2_)

<sup>30</sup> EITI website, "Stakeholders."

<sup>31</sup> Inter-American Development Bank (June 2004), "Report Summarizing Performance of Environmental and Social Commitments in the Camisea Project," accessed on April 1, 2013, <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=884224>, Page iv.

<sup>32</sup> Munilla, Isabel, "People, Power, and Pipelines: Lessons from Peru in the governance of gas production revenues," 22.

<sup>33</sup> Hamilton, Roger, Inter-American Development Bank (June 2007), "Can an energy project save a rainforest?," accessed on March 3, 2013, [http://www.iadb.org/idbamerica/index.cfm?thisid=4381\\_](http://www.iadb.org/idbamerica/index.cfm?thisid=4381_)

<sup>34</sup> Hamilton, Roger, Inter-American Development Bank (August 2006) "A long way from Block 88," accessed on March 3, 2013, <http://www.iadb.org/idbamerica/index.cfm?thisid=4261>.

<sup>35</sup> Cannock, Geoffrey, Gas Market Integration in the Southern Cone, 155 – 182.

the Camisea Inter-Institutional Technical Coordination Group (GTCI) that would manage the challenges associated with the project's large financial and physical capacity and its social and environmental impacts.<sup>36</sup>

A number of agencies or organizations received extra funding to monitor and enforce certain standards throughout the Camisea project. OSINERG, Peru's supervisory agency for energy investments, grew in size and responsibility due to the Camisea project. This agency became responsible for investigating problems and initiating sanctions. Peru's environmental health agency DIGESA also received extra funding to perform inspections and environmental quality assessments. The Camisea Ombudsman, also known as Defensoria Camisea, was created to resolve certain issues brought up against the project.<sup>37</sup>

#### 2.5.4 Non-governmental organizations

Despite the number of government agencies and organizations in place to monitor and enforce certain standards, the project continues to receive heavy criticism from local and international activists groups. Many local organizations, including Asociacion Interetnica de Desarrollo de la Selva Peruana (AIDSESP), Federacion Nativa del rio Madre de Dios y Afluentes (FENAMAD), Organizacion Regional Aidesep (ORAU), and Consejo Machiguenga del Río Urubamba (COMARU), have expressed environmental and social concerns.<sup>38</sup> According to these organizations, the project has had dire impacts on the indigenous populations in the Amazon rainforest.

From its inception, international organizations, such as Amazon Watch, Rainforest Alliance, Oxfam International, World Resource Institute (WRI), Environmental Defense Fund (EDF), and the World Wildlife Fund (WWF) among others, have voiced concern on environmental and human rights grounds. Through consistent public pressure, these organizations were able to influence the decision-making process of large lending institutions, leading many to pull funding from the project.

#### 2.5.5 Local indigenous communities

Due to the size of the Camisea project, operations in the upstream, downstream, and distribution processes affect over dozens of communities throughout the southern part of Peru. This report concentrates on indigenous communities affected by the project, such as the Machiguenga, Yine, Nanti, Nahua and Kirineri.<sup>39</sup> Major upstream operations take place in the buffer zone of the Manu National Park and within the Nahua-Kupakagori Territorial Reserve.<sup>40</sup>

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<sup>36</sup> Munilla, Isabel, "People, Power, and Pipelines: Lessons from Peru in the governance of gas production revenues," 26.

<sup>37</sup> Hamilton, Roger, Inter-American Development Bank, "A long way from Block 88."

<sup>38</sup> Forest Peoples Programme (December 10, 2012), "Indigenous organizations oppose Camisea expansion as Peru postpones decision to create new concession," accessed on April 1, 2013, <http://www.forestpeoples.org/topics/extractive-industries/news/2012/12/indigenous-organisations-oppose-camisea-expansion-peru-pos>.

<sup>39</sup> Caffrey, Patricia, Amazon Watch (April 1, 2002), "An Independent Environmental and Social Assessment of the Camisea Gas Project," accessed on March 3, 2013, <http://amazonwatch.org/news/2002/0401-an-independent-environmental-and-social-assessment-of-the-camisea-gas-project-by-patricia-b-caffrey>.

<sup>40</sup> Pluspetrol, (2010), "Environmental and Social Sustainability Report," accessed on March 3, 2013, <http://www.pluspetrol.net/enfsocsustreport2010.pdf>, 8.

## 2. Project Impacts

### 2.1 The Initial EIA Process

The Camisea project had a bad reputation among environmental and social activists around the world even before operations began in 2004. After poor environmental management from Shell during its exploration activities in the 1980s, several non-governmental organizations have been protesting and voicing their concerns on the development of the project. They were prompted by the fact that, at the time, an EIA was not required. However, since the early 1990s, Peruvian law has required that all new projects undergo an EIA to “ensure that adequate provision for environmental protection can be incorporated into the planning, design, execution, monitoring and decommissioning of the project”.<sup>41</sup>

An independent contractor, Environmental Resources Management (ERM Peru), performed the first EIA on the Camisea project in 1997, when Shell was still involved. The field surveys focused on stakeholder consultation with local community members on or near the Camisea Field Production Facilities. Through meetings, workshops and “participatory rural appraisal” (PPA) techniques, such as semi-structured interviewing and participatory mapping, a number of environmental issues were identified among the communities in the Lower Urubamba.<sup>42</sup> Although there was a generally positive attitude from the communities in regards to economic development, the main environmental concerns included water pollution, an increase in the general river traffic, control of access along roads, and the use of helicopters.<sup>43</sup>

### 2.2 Environmental impacts

When the consortium took over operations of the Camisea project, the EIA review and appraisal process continued on the gas and oil fields, the TGP pipeline, distribution facilities and newer developments such as the Peru LNG pipeline. For the upstream portion of the project, Pluspetrol implemented several new, environmentally sensitive techniques and practices. The company incorporated the “off-shore inland” concept during construction. Under this concept, each platform is isolated with a limited number of roads to each site. Workers, equipment, and other material are transported via helicopter or boat to the site.<sup>44</sup> New techniques, such as “directional drilling” (the drilling of multiple wells from a single site) and the reinjection of cuttings (fragments of rock dislodged by drilling) to reduce excess waste, were also used to minimize the impact of operations in the fragile ecosystem of the Peruvian Amazon.<sup>45</sup>

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<sup>41</sup> Shoobridge, Diego and Kapila, Sachin, Environmental Resources Management – Peru, (-), “Environmental Impact Assessment of the Camisea Gas Project: The Importance of Local Participation,” accessed on March 3, 2013, <http://infohouse.p2ric.org/ref/26/25595.pdf>, 1.

<sup>42</sup> Shoobridge, Diego, “Environmental Impact Assessment of the Camisea Gas Project: The Importance of Local Participation,” 12.

<sup>43</sup> Shoobridge, Diego, “Environmental Impact Assessment of the Camisea Gas Project: The Importance of Local Participation,” 10.

<sup>44</sup> Falzarano, W. and Gaurisse, R, World Oil Online (December 2004), “Camisea project in Peruvian Amazon rainforest meets environmental and social challenges,” accessed on March 3, 2013, <http://www.worldoil.com/December-2004-Camisea-project-in-Peruvian-Amaon-rainforest-meets-environmental-and-social-challenges.html>.

<sup>45</sup> Pluspetrol, “Environmental and Social Sustainability Report,” accessed on March 3, 2013, <http://www.pluspetrol.net/enfsocsustreport2010.pdf> (2010), 10.

Despite extra measures to tread lightly during upstream operations, the project has allegedly caused many **negative environmental impacts**, which include but are not limited to,

- Deforestation in the Amazon’s primary forests
- Water pollution
- Soil erosion



**Figure 4.** Diagram of pipeline spills within the first 14 months of operations. Source: Schexnayder, C.J. Engineering News-Records (March 16, 2006). “Despite Explosion, Peru Pushes Forward with \$2B LNG Project.” Accessed on April 1, 2013. <http://enr.construction.com/news/intl/archives/060316.asp>.

**Deforestation in the Amazon’s primary forests.** During the initial stages, the consortium faced allegations from over twenty environmental, social, and indigenous organizations for illegal deforestation in the Amazon and along the construction route of the pipeline. Deforestation and landscape disturbances have altered the natural movement of the Amazon’s flora and fauna, making it difficult for natural forest regeneration to reoccur.<sup>46</sup> These allegations were substantiated in November 2002, when OSINERG imposed a US\$1 million fine on the consortium for deforesting and using non-approved machinery. Almost a year later, the fine was still not paid.<sup>47</sup>

<sup>46</sup> World Wildlife Fund Global (July 10, 2005), “The many faces of the Camisea natural gas project,” accessed on March 3, 2013, [http://wwf.panda.org/what\\_we\\_do/where\\_we\\_work/amazon/problems/other\\_threats/oil\\_and\\_gas\\_extraction\\_amazon/camisea\\_amazon/](http://wwf.panda.org/what_we_do/where_we_work/amazon/problems/other_threats/oil_and_gas_extraction_amazon/camisea_amazon/).

<sup>47</sup> Amazon Watch, The Truthout Online (August 26, 2003), “Peru’s Camisea Project Tip Sheet,” accessed on March 3, 2013, <http://archive.truthout.org/article/perus-camisea-project-tip-sheet>.



**Water pollution.** Prior to operations of the TGP pipeline, water quality standards were not being met. Yet, construction and operations continued.<sup>48</sup> Then in October 2006, Carlos Salazar Tirado, a certified pipeline-welding inspector, conducted an independent report for E-Tech International, a U.S. based non-profit environmental consultancy group, on the TGP pipeline. Results showed that there had been five ruptures in the first 15 months of operation (See Figure 4).<sup>49</sup> According to the report, the ruptures were due to poor planning and hurried construction to meet the project deadline. The report states that “Each day of delay beyond the target completion date in mid-2004 would have resulted in fines that could have risen to as much as US\$90 million”<sup>50</sup> The TGP pipeline, which passes through mountainous terrain, was constructed using an inadequate soil stability evaluation and hydrostatic testing. These gas leaks continued to occur: In the fall of 2005, it was reported by the *Associated Press* that the TGP pipeline suffered three gas leaks in 2005 alone, contaminating five waterways and sickening more than 500 people in the affected area.<sup>51</sup>

**Soil erosion.** Local and international NGOs have expressed concerns that the project is triggering harmful environmental impacts, such as soil erosion, throughout the project’s entire operations. During pipeline construction, deforestation and heavy usage caused landslides and soil erosion incidents. According to a report done in 2003, the time of initial construction, “soil along the pipelines had been eroded up to two meters deep.”<sup>52</sup> This affected the clarity and turbidity of the waterways nearby, causing fish mortality and eutrophication.

## 2.3 Social impacts

Throughout operations, the consortium allegedly brought westernized development, like schools and health clinics, to local communities that have been impacted by the project. Under the “strict” environmental and social standards set by the IDB, stakeholder participation is critical to the project’s development. As such, certain participatory approaches were used including public meetings and workshops.<sup>53</sup> However, without consistent culturally sensitive participatory approaches, these developments could leave indigenous groups to feel like they are not involved in the dialogue.

In its 2010 Corporate Social Responsibility (CSR) report, Pluspetrol states that it engaged in dialogue and participatory processes with organizations that represent local indigenous communities to set up health projects and environmental education programs. According to the 2010 CSR report, Pluspetrol and the Local Education Management Unit in Pisco implemented an environmental education program in 25

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<sup>48</sup> Portocarrero, Geannine Gisset Chabaneix, Lund University (May 2010), “The Camisea gas Project in the Peruvian Amazon,” accessed on March 3, 2013, [http://www.lumes.lu.se/database/alumni/08.10/Thesis/Chabaneix\\_Geannine\\_Thesis\\_2010.pdf](http://www.lumes.lu.se/database/alumni/08.10/Thesis/Chabaneix_Geannine_Thesis_2010.pdf), 23.

<sup>49</sup> Biller, David, BNamericas.com (March 3, 2006), “Independent Report Alleges TGP Botched Camisea Construction – Peru,” accessed on March 3, 2013, <http://amazonwatch.org/news/2006/0303-independent-report-alleges-tgp-botched-camisea-construction--peru>.

<sup>50</sup> Biller, David, “Independent Report Alleges TGP Botched Camisea Construction – Peru.”

<sup>51</sup> Associated Press, ENN Environmental News Network (September 22, 2005), “Peru Mayor Says Camisea Gas Pipeline Leak Contaminated Jungle Rivers, Sickening Hundreds,” accessed on April 1, 2013, [http://www.enn.com/top\\_stories/article/2667](http://www.enn.com/top_stories/article/2667).

<sup>52</sup> Portocarrero, Geannine Gisset Chabaneix, Lund University (May 2010), “The Camisea gas Project in the Peruvian Amazon,” accessed on March 3, 2013, [http://www.lumes.lu.se/database/alumni/08.10/Thesis/Chabaneix\\_Geannine\\_Thesis\\_2010.pdf](http://www.lumes.lu.se/database/alumni/08.10/Thesis/Chabaneix_Geannine_Thesis_2010.pdf), 22.

<sup>53</sup> Inter-American Development Bank (–), “Camisea,” accessed on April 14, 2013, <http://iadb.org/en/civil-society/public-consultations/camisea/camisea,5722.html>.

educational institutions, reaching 14,345 students and 450 teachers.<sup>54</sup> Yet, there have been multiple complaints regarding inadequate consultation and dialogue.

The project also brought jobs and a surplus of revenue to some of the most impoverished areas of Peru. According to a study performed by WRI and Oxfam, the Camisea project “impacted five of Peru’s 24 regions, three of which are among the poorest in the country” and brought in over US\$1 billion to these regional governments within the first five years of operation. Yet despite these economic benefits, approximately 60% of the regional population was still in poverty in 2008 due to a lack of technical capacity and just revenue distribution to assist the disadvantaged population.<sup>55</sup> As financial investors in these areas, the consortium should actively promote and assist in community development to build partnerships and demonstrate corporate social responsibility. Yet, despite these measures, community members are still expressing frustration with adequate development

Even with large economic benefits at the regional and national levels, the environmental harms outweigh the benefits at the local level, directly impacted the livelihoods of many of the local communities. These **negative social impacts** include but are not limited to,

- Cultural identity loss and health issues
- Food insecurity
- Noise pollution
- Security

**Cultural identity loss and health issues.** Before operations in Block 88 started, exploration and testing greatly affected the way of life of indigenous tribes in the region. Roughly 75% of Block 88 is situated inside the Nahua-Kupakagori Territorial Reserve, home to one of the tribes in “voluntary isolation.”<sup>56</sup> Indigenous and environmental groups have publicly stated that operations in and around the reserve have threatened the “physical and cultural survival” of these “isolated peoples”. During construction of the gas wells, contact with Pluspetrol workers has allegedly caused disease and ultimately the death of several Nahua-Kupakagori.<sup>57</sup>

**Food insecurity.** Due to soil erosion and landslides caused by the pipeline construction, many indigenous communities have been unable to fish in their local streams. This not only has food security implications but also cultural implications as indigenous communities had to adapt to new means of subsistence.<sup>58</sup>

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<sup>54</sup> Pluspetrol (2010), “Environmental and Social Sustainability Report,” accessed on March 3, 2013, <http://www.pluspetrol.net/enfsocsustreport2010.pdf>, Page 10.

<sup>55</sup> Ranganathan, Janet and Laestadius, Linnea, World Resource Institute, (August 2, 2010), “REDD Alert: Lessons from Peru’s Camisea Pipeline Project,” accessed on March 3, 2013, <http://www.wri.org/stories/2010/08/redd-alert-lessons-perus-camisea-pipeline-project>.

<sup>56</sup> Munilla, Isabel, World Resource Institute, BIC, Oxfam America (2010), “People, Power, and Pipelines: Lessons from Peru in the governance of gas production revenues,” accessed on March 3, 2013, [http://www.bicusa.org/wp-content/uploads/2013/01/People\\_Power\\_Pipelines.pdf](http://www.bicusa.org/wp-content/uploads/2013/01/People_Power_Pipelines.pdf), 19.

<sup>57</sup> Valqui, Michael, Riveros, Juan Carlos, and Brehaut, Ivan, World Wildlife Fund Macroeconomics Program Office (November 2005), “Hydrocarbon Development in the Lower Urubamba Region, Peru: Learning from Camisea,” accessed on March 3, 2013, [assets.panda.org/downloads/sevaperu.pdf](http://assets.panda.org/downloads/sevaperu.pdf).

<sup>58</sup> World Wildlife Fund Global (July 10, 2005), “The many faces of the Camisea natural gas project,” accessed on March 3, 2013, [http://wwf.panda.org/what\\_we\\_do/where\\_we\\_work/amazon/problems/other\\_threats/oil\\_and\\_gas\\_extraction\\_amazon/camisea\\_amazon/](http://wwf.panda.org/what_we_do/where_we_work/amazon/problems/other_threats/oil_and_gas_extraction_amazon/camisea_amazon/).

**Noise pollution.** During the exploration phase, the upstream consortium relied on helicopters to transport goods and workers to and from Block 88 in the Amazon. These helicopters disturb the habitat and natural migration of the wildlife, causing these animals to find shelter elsewhere. This directly impacts the livelihoods of the indigenous tribes in the Amazon like the Shivankoreni in the Machiguenga village by making it more difficult and time consuming to hunt.<sup>59</sup>

**Security.** With avid opposition to the project from antagonists, the security of the workers continues to be put at risk. In 2003, 60 pipeline workers were kidnapped while more recently in 2012, 36 pipeline workers were kidnapped by rebel groups. In both instances, the hostages were later released.<sup>60</sup>

## 2.4 Financial impacts

According to the IDB, the economic benefits of the Camisea project are considered to be tremendous. With a wide range of investors spanning the private and public sectors, this project has changed the energy infrastructure of Peru by replacing petroleum with natural gas throughout parts of the country. Yet, opposition from environmental and human rights activists and poor environmental practices have led to negative financial impacts.

### 2.4.1 Financial setbacks to the project

Environmental and social concerns from the onset of the Camisea project have led to significant financial setbacks and delays for the consortium and the project as a whole. During the planning and construction phase of the project, there were rejections for project loans from Citigroup, the U.S. Export-Import Bank, and the Overseas Private Investment Corporation (OPIC) due to environmental and social pressures from large international NGOs. In 2003, the U.S. Export-Import Bank (Ex-Im) also denied US\$214 million of requested loan guarantees due to petitions, letters, and conversations from Peruvian civil society and international NGOs, including World Wildlife Fund (WWF), Environmental Defense Fund (EDF) and Amazon Watch.<sup>61</sup> Through an in-depth analysis, EDF was able to persuade Ex-Im that the Camisea project “would violate Ex-Im’s sector guideline on oil and gas development, as well as two of Ex-Im’s seven environmental objectives.”<sup>62</sup> The analysis goes on to emphasize that the project’s EIAs are not transparent and lack certain requirements found in credible EIAs.

Further opposition against the construction of the pipeline and the processing plant on the coast led to delays in obtaining financial backing from the IDB. After considering the concerns from a wide range of stakeholders, the IDB pushed back its loan decision for approximately a month until additional studies were conducted. Even though the US\$75 million IDB loan eventually went through, there continued to

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<sup>59</sup> Oxfam America (April 18, 2008), “Peruvian village sees pollution, few benefits from gas pipeline project,” accessed on March 3, 2013, <http://www.oxfamamerica.org/articles/peruvian-village-sees-pollution-few-benefits-from-gas-pipeline-project>.

<sup>60</sup> Environmental Defense Fund (June 10, 2003), “Ex-Im Support For Camisea Project Would Violate Bank’s Own Environmental Guidelines,” accessed on March 3, 2013, <http://www.edf.org/news/ex-im-support-camisea-project-would-violate-banks-own-environmental-guidelines.>; Pipoli, Renzo (July 19, 2012), “Security Concerns Halt Peru Camisea Gas Pipeline Expansion Work: Source,” accessed on March 3, 2013, <http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Oil/6485021>.

<sup>61</sup> Amazon Watch (August 26, 2003), “Peru’s Camisea Project Tip Sheet,” accessed on March 3, 2013, <http://archive.truthout.org/article/peru-camisea-project-tip-sheet>.

<sup>62</sup> Environmental Defense Fund (June 10, 2003), “Ex-Im Support For Camisea Project Would Violate Bank’s Own Environmental Guidelines,” accessed on March 3, 2013, <http://www.edf.org/news/ex-im-support-camisea-project-would-violate-banks-own-environmental-guidelines>.

be delays in loan distributions as the IDB attempted to monitor the project for environmental and social impacts.<sup>63</sup>

Other financial setbacks and sanctions arose when the consortium failed to comply with or obtain approval from the government in regards to the project's EIA obligations and regulations. The five pipeline spills had severe financial repercussions on the TGP consortium. The consortium was fined US\$1 million by the Peruvian government and had to invest US\$50 million towards cleanup and mitigation measures.<sup>64</sup> In early 2011, OSINERG delivered 34 sanctions, totaling approximately US\$8 million against the consortium for violation of EIA obligations or the non-approval of EIAs on environmental and social grounds. One sanction in particular was US\$1.2million. This sanction was issued because the consortium did not follow the required EIA approval processes before development of pipeline activities.<sup>65</sup>

#### 2.4.2 Impacts on doing business in this region

Conflicts with the project's various stakeholders has led to delays and, on occasion, halted operations. As mentioned earlier in this report, the Camisea project is a policy priority for the government and as such, it is critical that reserves in Block 88 are first distributed to the internal market at a low price. Contractual negotiations based on the MEM energy policy have established a discounted internal price for the length of the contract, making it difficult to increase revenue through operations without expansion further into the Amazon.<sup>66</sup>

In addition, the upstream consortium has also seen major impacts on expansion due to activist pressures. Most recently in February 2013, Pluspetrol halted its plans to expand its operations into Manu National Park, a UNESCO World Heritage Site and declared "more bio diverse than any other place on the planet."<sup>67</sup> Prior to this decision, Pluspetrol denied any plans to expand into the site as indigenous rights activists and environmentalists loudly accused the company of expansion. Only after *The Guardian* and the indigenous rights organization Survival International leaked a document, a report by consulting firm Quartz Services, on the expansion plans in which Pluspetrol publicly states its intentions to backtrack on its plans.<sup>68</sup>

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<sup>63</sup> The Economist Intelligence Unit (2003), "Peru industry: Green concerns hamper camisea project," accessed on March 3, 2013, <http://search.proquest.com/docview/466312822?accountid=8285>.

<sup>64</sup> Spencer, Nicole, Americas Society and Council of the Americas (June 2010), "Energy in Peru: Opportunities and Challenges," accessed on March 3, 2013, [http://www.as-coa.org/sites/default/files/ASCOA\\_Energy\\_in\\_Peru.pdf](http://www.as-coa.org/sites/default/files/ASCOA_Energy_in_Peru.pdf), 13.

<sup>65</sup> Aldana, Martha Ines (2011), "Track D: Improving Implementation of Environmental Legislation," accessed on March 3, 2013, [http://inece.org/conference/9/proceedings/48\\_Aldana.pdf](http://inece.org/conference/9/proceedings/48_Aldana.pdf), 419.

<sup>66</sup> The World Bank (December 1, 2010), "Peru Recent Economic Development in Infrastructure (REDI) (vol. 2)," accessed on March 3, 2013, [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/05/21/000427087\\_20120521171443/Rendered/PDF/434940ESWOP1060olume02000Dec0102010.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/05/21/000427087_20120521171443/Rendered/PDF/434940ESWOP1060olume02000Dec0102010.pdf), 123.

<sup>67</sup> Hill, David, *The Guardian* (February 11, 2013), "Gas company targets protected Manu park in Peruvian Amazon," accessed on March 3, 2013, <http://www.guardian.co.uk/environment/2013/feb/11/gas-company-manu-park-amazon>.

<sup>68</sup> Spooner, Rebecca, TakePart, LLC (February 25, 2013), "Survival Alert: Petroleum Equals Death for Peru's Tribal People," ccessed on March 3, 2013, <http://www.takepart.com/article/2013/02/25/survival-alert-peru-place-tribal-peril>; Buczynski, Beth, Care2 online, (February 22, 2013), "Gas Company Withdraws Plans to Drill in Manu National Park," accessed on March 3, 2013, <http://www.care2.com/causes/gas-company-withdraws-plans-to-drill-in-manu-national-park.html#ixzz2LuVQP1Xa>.

### 3. Analysis

Multiple factors indicate that the lack of transparency and accountability from the upstream and downstream consortia will have profound impacts on the way that business is conducted. In order to operate safely and successfully with limited risk, companies need to follow high standards set by the IFIs and exhibit a CSR strategy that demonstrates sound environmental practices, inclusion, and transparency; this should be done even when there is a lack of environmental enforcement.

#### 3.1 Enforcement of national government

Enforcement of environmental laws and regulations from national and sub-national governments seem to be either lacking or non-existent. With such a complex project, compliance with EIA standards and guidelines is critical in order to prevent environmental and social harms. Yet, the consortium was able to continue operations without approval of such development. This could be due to the lack of communication and due diligence between the central government and SNGs. According to WWF, problems arose due to “the lack of a centralized supervision and enforcement agency for environmental issues and the lack of a national environmental policy framework.”<sup>69</sup> There are many agencies with environmental departments spread throughout Peru with monitoring and enforcement responsibilities of environmental laws and regulations. However, these agencies do not appear to have much influence on the MNCs doing business in their area.<sup>70</sup>

Even after the US\$5 million loan from the IDB to strengthen the government’s ability to monitor certain environmental and social safeguards, the legal framework contained gaps and contradictions, affecting enforcement and oversight of the project. EIAs lacked clear and direct language, making it difficult to enforce inadequate procedures.<sup>71</sup> The approval processes were inconsistent and mismanaged as inadequate technology and procedures were overlooked. Furthermore, it is possible that governmental laws and regulations were poorly enforced due to conflict of interest. The project was of high importance to the central government’s energy agenda (Refer to section 2.1 of this report). Within the initial years of operations, roughly 17% of the violations found by OSINERG were not resolved.<sup>72</sup>

Yet, not all of the monitoring responsibilities fall on the national and sub-national governments. The IDB has also assumed responsibility for monitoring the environmental and social impacts of this complex project. This could have possibly caused miscommunication with the governments, which led to a misallocation of resources and a lack of enforcement.

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<sup>69</sup> Valqui, Michael, Riveros, Juan Carlos, and Brehaut, Ivan, World Wildlife Fund Macroeconomics Program Office (November 2005), “Hydrocarbon Development in the Lower Urubamba Region, Peru: Learning from Camisea,” accessed on March 3, 2013, [assets.panda.org/downloads/sevaperu.pdf](http://assets.panda.org/downloads/sevaperu.pdf).

<sup>70</sup> Davis, Bob (December 20, 2007), “The Wall Street Journal: Hunting Resources in Peru,” accessed on March 3, 2013, <http://royaldutchshellplc.com/2007/12/20/the-wall-street-journal-hunting-resources-in-peru/>.

<sup>71</sup> Aldana, Martha Ines (2011), “Track D: Improving Implementation of Environmental Legislation,” accessed on March 3, 2013, [http://inece.org/conference/9/proceedings/48\\_Aldana.pdf](http://inece.org/conference/9/proceedings/48_Aldana.pdf), 420.

<sup>72</sup> Valqui, Michael, Riveros, Juan Carlos, and Brehaut, Ivan, World Wildlife Fund Macroeconomics Program Office (November 2005), “Hydrocarbon Development in the Lower Urubamba Region, Peru: Learning from Camisea” accessed on March 3, 2013, [assets.panda.org/downloads/sevaperu.pdf](http://assets.panda.org/downloads/sevaperu.pdf).

### 3.2 Company performance

Acknowledging that the Camisea project is located in the most fragile ecosystems in Peru, the central government awarded concessions to a consortium of companies which were inexperienced with any history of working on complex projects in high bio diverse areas.<sup>73</sup> Even with proactive measures like directional drilling from the upstream consortium, the companies took more of a reactive approach to environmental compliance and stakeholder engagement.

**Reactive approach.** Apart from the study done by E-Tech, other reports also allude to the fact that the TGP pipeline spill could have been avoided. Further investigation by an independent audit requested by the Peruvian government showed that the TGP consortium did not perform geological and social studies before construction.<sup>74</sup> Instead, the pipeline's damage affected poor community members along the pipeline's boundaries who lacked the capacity and resources to clean up the spill themselves. As a reactive response, the TGP consortium paid over US\$50 million to fix the problem and promised to increase safety measures by US\$25 million in 2006 alone.<sup>75</sup>

Another example which affected local community members in the Amazon is the Shivankoreni. Shivankoreni community members along with Oxfam America and other activist groups wanted Pluspetrol and the upstream consortium to address community grievances, citing helicopter noise as one of the problems. Pluspetrol responded by restricting helicopter flights over the area, although it is unclear as to how limited these restrictions were and the duration.<sup>76</sup>

**Reporting.** Select companies in the consortium, such as Pluspetrol are illustrating positive environmental impacts through CSR reporting and press releases. Reporting on environmental and social impacts demonstrates a proactive approach. Yet, without candidness and transparency, CSR reporting is nothing more than a public relations scheme. As operations continue, there continues to be a disconnect between what the consortium is reporting and what stakeholders are saying. For example, according to Pluspetrol's 2010 CSR report, the company has consulted with many of its stakeholders before important development decisions. Yet, these communities continue to feel left out of the decision-making process and as a result, have cited inappropriate development that does not meet their needs.<sup>77</sup>

### 3.3 Reputational implications

Strong opposition against the Camisea project continues to come from organizations around the world. With new technologies and the spread of globalization, information is now being shared more quickly

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<sup>73</sup> Hennessey, Hannah, BBC News (August 10, 2004), "Peru prepares for the gas age," accessed on March 3, 2013, [http://thewe.cc/weplanet/news/camisea\\_project.htm](http://thewe.cc/weplanet/news/camisea_project.htm).

<sup>74</sup> Spencer, Nicole, Americas Society and Council of the Americas (June 2010), "Energy in Peru: Opportunities and Challenges," accessed on March 3, 2013 [http://www.as-coa.org/sites/default/files/ASCOA\\_Energy\\_in\\_Peru.pdf](http://www.as-coa.org/sites/default/files/ASCOA_Energy_in_Peru.pdf), 13.

<sup>75</sup> Hearn, Kelly, The Christian Science Monitor (July 17, 2006), "Leaky pipes, stingy aid slow Peru gas project," accessed on March 3, 2013, <http://www.csmonitor.com/2006/0717/p04s01-woam.html>.

<sup>76</sup> Oxfam America (April 18, 2008), "Peruvian village sees pollution, few benefits from gas pipeline project," accessed on March 3, 2013, <http://www.oxfamamerica.org/articles/peruvian-village-sees-pollution-few-benefits-from-gas-pipeline-project>.

<sup>77</sup> Bast, Elizabeth, et al, Friends of the Earth, et al (January 2005), "Environmental and Social Impacts of IDB Projects Since the Eighth Capital Replenishment," accessed on March 3, 2013, [www.internationalrivers.org/files/attached-files/idbimpact\\_en.pdf](http://www.internationalrivers.org/files/attached-files/idbimpact_en.pdf), 12.

than ever before. Stories of protesters and the challenges that remote indigenous communities face due to the project and its investors are being shared through large international news sources, such as *The Washington Post* and *The Guardian*. This can have negative reputational impacts and in turn, affect the project's profitability. It is important that the consortium maintains timely and transparent stakeholder engagement with NGOs and civil societies to mitigate any current or potential damage or risks.

## 4. Conclusions and Recommendations

The Camisea project has been wrought with controversy from the very beginning. From a political economy perspective, the project has arguably promised economic growth and poverty reduction within Peru's poorest areas, while on a macro-level, positioning Peru as an important regional player in the oil and gas industry. According to a study released by Apoyo Consultoria, an economic consulting firm in Peru, the project was said to add approximately 0.8 percent to Peru's annual GDP.<sup>78</sup> The World Bank reports that between 2004 and 2009, Peru has increased its GDP by at least one percentage point per year, although its correlation with the Camisea project is questionable.<sup>79</sup> However, inequality and poverty still remain high throughout the country, most notably in the regions that are touched by the Camisea project.

As an extremely large and complex project with a political agenda, it became difficult to monitor and enforce sound environmental and social practices throughout the project. In certain situations, this allowed the consortium to continue operations without proper independent monitoring, appropriate environmental practices, and sound stakeholder engagement.<sup>80</sup>

### 4.1 Long-term impacts

It was important to consider several long-term impacts of this project in order to mitigate future risks. Most notably, the consortium and other oil and gas companies doing business in Peru should acknowledge the following:

- Operations in fragile ecosystems can have profound impacts on the flora and fauna in the area if a sound environmental management plan is not implemented and utilized.
- Conflict with the indigenous communities is bound to continue if they continue to be left out of the decision making process.
- The need for transparency throughout the energy and mining sector is being stressed by Peru's central government. Recently in June 2012, the current President of Peru, Ollanta Humala stressed the need for transparency at the EITI conference.<sup>81</sup>

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<sup>78</sup> Inter-American Development Bank (October 20, 2007), "Report evaluates economic benefits of Camisea Project," accessed on March 3, 2013, <http://www.iadb.org/en/news/webstories/2007-10-29/report-evaluates-economic-benefits-of-camisea-project,4111.html>.

<sup>79</sup> The World Bank (2013), "World DataBank: World Development Indicators," accessed on March 3, 2013, <http://databank.worldbank.org/data/views/reports/tableview.aspx>.

<sup>80</sup> Valqui, Michael, Riveros, Juan Carlos, and Brehaut, Ivan, World Wildlife Fund Macroeconomics Program Office (November 2005), "Hydrocarbon Development in the Lower Urubamba Region, Peru: Learning from Camisea," accessed on March 3, 2013, <assets.panda.org/downloads/sevaperu.pdf>.

<sup>81</sup> EITI (June 26, 2012), "President Humala: transparency and EITI needed to 'heal the wounds' in Peru," accessed on March 3, 2013, <http://eiti.org/new-events/peru-president-says-eiti-needed-to-heal-the-wounds>.

## 4.2 Recommendations

By examining the positive and negative impacts of this complex project, this report will provide several recommendations as to why environmental and social responsibility is critical for oil and gas companies doing business in this region.

### 4.2.1 Implement an effective stakeholder engagement strategy

As investors in the region, it is important for the consortium to collectively consider an effective stakeholder engagement strategy that would include both direct and indirect stakeholders. With multiple stakes in each of the project's processes, a collective strategy would allow the companies to avoid miscommunication with each other and their stakeholders. A stakeholder strategy would allow a company to identify its most important stakeholders. These are individuals or groups that are not only affected by the project but can also directly or indirectly affect the project's operations.

In this particular case, the direct stakeholders would include but are not limited to the various indigenous communities which are directly affected by the impacts of the project, the SNGs who allegedly monitor and enforce environmental laws and regulations but also collect royalties, and the central government whose main interest is influenced by Peru's new energy agenda and also collects royalties. With these competing interests to consider, it is important that all voices are heard and considered through consultation and encouraged participation.

After years of a disconnect with its stakeholders, the consortium should focus on transparency and accountability for its actions. Much of the criticism about the consortium thus far is due to a lack of transparency and its inability to consult with various stakeholders before beginning operations. This has led to social conflicts and a lack of trust among local communities. By implementing activities and approaches like culturally sensitive meetings and participatory approaches into daily operations, the consortium would demonstrate a greater level of transparency and accountability, mitigating social and environmental risks.

### 4.2.2 Consider the geopolitical climate in host countries prior to investment

The central government is highly dependent on the Camisea project to generate revenue, lower energy costs, and curb air pollution.<sup>82</sup> The government's heavy involvement in the project has led to greater opposition from local communities, which feel their needs are not being met. Before investing in a project in Peru, it is crucial to understand the country's social unrest, unenforced environmental regulations and safeguards as well as any other geopolitical risks associated with doing business in the country.

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<sup>82</sup> Bloomberg (September 10, 2012), "IDB Approves \$135 Mln in Financing for Peru's Camisea (Update2)," accessed on March 3, 2013, [http://www.bloomberg.com/apps/news?pid=newsarchive&sid=agpMX\\_rx.Pao](http://www.bloomberg.com/apps/news?pid=newsarchive&sid=agpMX_rx.Pao).



In reference to the Camisea project, the consortium was heavily fined for non-approval of EIA processes and violation of environmental and social practices. Yet, due to a lack of effective enforcement, it was possible to continue operations without timely payment of the fines and a complete disregard for environmental and social safeguards. This exacerbated the situation as it became public knowledge that the consortium was noncompliant. As such, the consortium should abide by higher environmental and social standards and perform an applicable EIA assessment before all construction projects. Assessments should also be performed periodically throughout its operations to mitigate financial setbacks.

#### **4.2.3 Invest in sustainable community development**

Community development is an important component to complex projects like the Camisea project as it can mitigate risks and build partnerships in the region. Yet, without initial consultation as to how or even if the communities want to develop, the consortium could experience backlash and continued conflict. By taking a proactive approach through CSR, the upstream and downstream consortium can exhibit strong leadership, mitigate financial and reputational risks associated with past poor performances.

Due to the nature of their operations, oil and gas companies like the ones that operate the Camisea project have to constantly manage the interests of a wide range of stakeholders, including civil society, large international institutions and national and local governments. It is evident that due to its exploitive nature, oil and gas companies can have negative environmental and social impacts. Even though cultural aspects and natural environments can be different, oil and gas companies can learn best practices from one another.

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# Sustainable Hydropower Development

Nam Theun 2 Hydropower Project in Lao PDR

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## Abstract

This report analyzes the sustainability issues related to the Nam Theun 2 hydropower dam (NT2) in Lao People's Democratic Republic (Lao PDR). Ninety-five percent of the electricity produced by the dam is exported to Thailand, and the dam will serve as one of the largest income-generating projects in Lao PDR. However, large dams have considerable environmental and social consequences, as thousands of people are displaced and substantial environmental impacts ensue. In this report, the expected environmental and social impacts of the dam and its related activities are investigated, as well as the interests and relations of the stakeholders involved in the project. The impacts are evaluated in relation to some of the guidelines for equitable and sustainable development of water and energy resources developed by the World Commission on Dams. Moreover, the report also investigates the Nam Theun 2 Power Company's mitigation measures on the project. Finally, the discussion on the lessons learned from the NT2 project that could be utilized in future hydropower projects in Lao PDR and other developing countries.

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## Acronyms

ADB	Asian Development Bank
CA	Concession Agreement
EAMP	Environmental Assessment and Management Plan
EDL	Electricité du Laos
EGAT	Electric Generating Authority of Thailand
EIB	European Investment Bank
EMU	Environmental Management Unit of STEA
FDI	Foreign Direct Investment
GOL	Government of Lao PDR
ICUN	International Union for Conservation of Nature
INGO	International Non-Government Organization
MIGA	Multilateral Investment Guarantee Agency
NBCA	National Biodiversity Conservation Area
NSEDP	Lao National Socio- Economic Development Plan
NT2	Nam Theun 2
NTPC	Nam Theun Power Company
NGPES	National Growth and Poverty Eradication Strategy
PoE	Panel of Experts
STEA	Science, Technology and Environment Agency
WB	World Bank
WCS	Wildlife Conservation Society
WMPA	Watershed Management and Protection Agency

## 1. Introduction

### 1.1 Lao PDR

Lao People's Democratic Republic (Lao PDR) is a small, landlocked, poor country. It covers an area of 236,800 km<sup>2</sup> with a population of 6.5 million in 2012. Lao PDR shares borders with Thailand, Cambodia, China, Myanmar and Vietnam, and is located in the center of the dynamic, energy-hungry Mekong region. Lao PDR has an extensive natural resource base of water, tropical forests, and minerals. As the Mekong River flows through the country, there is substantial hydropower potential—estimated at 26,000 megawatts (MW), on which the government intends to capitalize.<sup>1</sup> At present, Lao PDR has completed construction of more than 17 power plants with a combined installed capacity of about 3,000 MW<sup>2</sup>, or 10% of the total potential.<sup>3</sup> Demand for electricity in Lao PDR and foreign markets has increased rapidly due to economic growth throughout the region.

The country's economy has been growing rapidly in the past decade, largely driven by high investment in natural resource sectors, especially hydroelectric power and minerals. During 2001-2010, Lao PDR's real GDP grew at an average of 7.1 percent annually and is expected to increase to 7.5-8 percent during 2011-2015.<sup>4</sup> Despite this rapid growth, the country's economy is becoming less diverse. In 2010, mining and electric power exports accounted for 68% of total exports, and these exports are expected to rise in the coming years. Mining and hydropower now account for more than 80% of Lao PDR's total incoming foreign direct investment (FDI), which in turn, affects the composition of export growth.<sup>5</sup> Although Lao PDR's economy has rapid growth in the past decade, in 2008, Transparency International—an authority INGO that tracks corruption—ranked Lao PDR as 150<sup>th</sup> amongst the 180 countries, suggesting a high level of corruption.<sup>6</sup>

### 1.2 Hydropower and Lao PDR Development Plan

The Lao Government has taken action to create effective links between its long-term vision and medium-term strategies. Every five years, it formulates the constitutionally required National Socio-Economic Development Plan (NSEDP), aimed at addressing development priorities including poverty alleviation. The seventh five-year Lao NSEDP (2011-2015) states that the government intends to build 10 large dams from 2011 to 2015, and will generate 5,015 MW of electricity. Another objective of the

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<sup>1</sup>Department of Energy Business Powering Progress, "Laos Plans to Become Battery of ASEAN by 2020, KPL," last modified July 01, 2009, accessed March 19, 2013. [http://poweringprogress.com/index.php?option=com\\_content&view=article&id=430:01st-july-2009-laos-plans-to-become-battery-of-asean-by-2020&catid=86:hydropower-in-the-media&Itemid=50](http://poweringprogress.com/index.php?option=com_content&view=article&id=430:01st-july-2009-laos-plans-to-become-battery-of-asean-by-2020&catid=86:hydropower-in-the-media&Itemid=50).

<sup>2</sup>CPWF.MEKONG. Vientiane Times, "Laos commits to build sustainable hydropower plant," last modified January 16, 2013, accessed May 03, 2013. [http://www.vientianetimes.org.la/FreeContent/FreeContent\\_Laos%20commits.htm](http://www.vientianetimes.org.la/FreeContent/FreeContent_Laos%20commits.htm)

<sup>3</sup>Renewable Energy for Sustainable Development Association (RESDALAO), "Final Report on Energy Status in Lao PDR." Last modified November 2005. Accessed at March 22, 2013. [http://www.sunlabob.com/data/documents/energy\\_issues/O-05-11-Laos\\_Energy\\_status.pdf](http://www.sunlabob.com/data/documents/energy_issues/O-05-11-Laos_Energy_status.pdf).

Department of Energy Business Powering Progress, "Hydropower in Lao PDR", last modified May 16, 2008. Accessed April 23, 2013. [http://www.poweringprogress.org/index.php?option=com\\_content&view=article&id=90&Itemid=125](http://www.poweringprogress.org/index.php?option=com_content&view=article&id=90&Itemid=125).

<sup>4</sup>The Fourth Meeting of Trade Ministers of Landlocked Developing Countries, Almaty, Kazakhstan (2012), (statement of H.E. Nam Viyaketh, Minister of Industry and Commerce)

Statement by H.E. Nam Viyaketh, Minister of Industry and Commerce, accessed May 03, 2013,

<http://www.unohrrls.org/UserFiles/File/LLDC%20Documents/ALMATY%20+10/Almaty%20Sept%202012/IV%20trade%20ministers%20meeting%2012%20sept%202012/1%20Lao%20PDR%20Opening.pdf>.

<sup>5</sup>"Statement by H.E. Nam Viyaketh, Minister of Industry and Commerce at the Fourth Meeting of Trade Ministers of Landlocked Developing Countries,"

<sup>6</sup>Program on Forests (PROFOR), "Improving Forest Governance in the Mekong Region," Volume 1, Working Paper, last modified April 2011, accessed March 03, 2013, <http://www.profor.info/sites/profor.info/files/docs/WorkingPaper-Mekong-Vol1-final.pdf>.

seventh NSDP is to build on the previous plans for generating revenue through electricity exports. The proposed dams are part of the plan to become the 'battery' of ASEAN and rid itself of its status as a least-developed country by 2020.<sup>7</sup>

The Nam Theun 2 (NT2) project, which was partly funded by the World Bank and Asian Development Bank (ADB), is one of the most important projects for the Lao government. The ADB estimates that under the agreement, the GOL will earn from dividends, taxes, and royalties approximately US\$ 2billion over 25 years, with average annual revenues expected to be \$80 million.<sup>8</sup> These revenues will be invested in Lao PDR's national education and public health care systems as well as in protection and preservation of the environment.<sup>9</sup>

## 2. Background

### 2.1 Project Overview



**Figure 1. Nam Theun Power Station. Credit: Axel Drainville. From <http://www.flickr.com/photos/axelrd/7593745066/>**

The Nam Theun 2 Hydropower Project (NT2) is a trans-basin diversion power plant on the Nam Theun River in Khammouane and Bolikhamxay provinces in Lao PDR.<sup>10</sup> The multi-purpose project was under

<sup>7</sup> Laos Plans to Become Battery of ASEAN by 2020, 2009.

<sup>8</sup> Lao National Committee For Energy. "Social and Environmental Factors," Newsletter, Issue#1, last modified September 2004, accessed February 2013, [http://poweringprogress.updates/news/newsletters/2004/newsletter\\_issue\\_sep2004.pdf](http://poweringprogress.updates/news/newsletters/2004/newsletter_issue_sep2004.pdf).

<sup>9</sup> Laos Plans to Become Battery of ASEAN by 2020, 2009.

<sup>10</sup> World Bank Group Multilateral Investment Guarantee Agency, "Hydropower in Asia: The Nam Theun 2 Project," Nam Theun 2 Brief, last modified June 2006, accessed May 03, 2013, <http://www.miga.org/document/NT2006/pdf>.

construction for over a decade. A substantial 995 MW of electricity generated from this plant is exported to the Electricity Generating Authority of Thailand (EGAT) as part of a long-term power purchase agreement (PPA) signed in 2003. In addition, it will supply 75MW of electricity to the state-owned Electricité du Laos (EDL).<sup>11</sup> The GOL expects that NT2 revenues will account for between three and five percent of government revenues from 2005 to 2020, equivalent to about 60% of domestically financed expenditures on education and health.<sup>12</sup> Moreover, the GOL and International Development Agency (IDA) have also agreed on detailed revenue management arrangements to ensure that NT2 revenues generated will be allocated for poverty reduction and environmental conservation programs.<sup>13</sup> The GOL has developed indicative allocation for priority sectors, which have been approved by the legislative assembly for use by eligible programs as part of the FY2009/2010 budget year. The revenue will be spending on (i) education 35%; (ii) rural roads 30%; (iii) health 20 %; and (iv) environment and forestry 15%. These allocations would be adjusted in the future, depending on their performance.<sup>14</sup>

### **Box 1: Nam Theun 2 Hydropower Construction**

The NT2 hydropower project included the development, construction and operation of a trans-basin diversion power plant that comprised a dam, a reservoir, a power plant, a regulating pond and transmission lines to connect to the Lao grid and to export to Thailand. A dam 39m high and 325m long was constructed to the northwest of the Nakai plateau across the Nam Theun River to form a reservoir. To the west bank of the reservoir, 13 small earthwork saddle dams have been constructed. The 450km<sup>2</sup> reservoir is 7m deep and covers 40% of the plateau. At full supply, the reservoir can store up to 3,530 million m<sup>3</sup>. The surface area reduces to 70km<sup>2</sup> at the end of the dry season. To control the water level in the reservoir during the wet season, a spillway and a stilling basin have been constructed. Water from the reservoir is directed to the intake structure through a 5km long headrace tunnel. There is a 3km long tunnel, a pressure shaft, and a pressure tunnel to carry the water from the intake structure to the power station, situated 350m below the plateau in the Nam Kathang valley.

The power station is equipped with four 250MW Francis unit turbines, which can generate 995MW or 5,636GWh of electricity annually. Two 37.5MW turbines that generate 75MW or 300GWh of electricity per year have also been installed in the power station for a total generating capacity of 1050 MW. Water from the intake structure passes through these turbines and enters the regulating pond below the powerhouse. Installed with a storage capacity of 8 million m<sup>3</sup>, the regulating pond releases water into the Xe Bang Fai River through a 27km man-made downstream channel. The project began generating 1,000MW of electricity for commercial purposes on March 24, 2010.

Source: Nam Theun Power Company Limited. "The Facilities." Accessed April 22, 2013. <http://www.namtheun2.com/images/stories/key/construction-%20new.pdf>.

<sup>11</sup> "Hydropower in Asia: The Nam Theun 2 Project."

<sup>12</sup> "Hydropower in Asia: The Nam Theun 2 Project."

<sup>13</sup> "Hydropower in Asia: The Nam Theun 2 Project."

<sup>14</sup> World Bank, "Update on the Lao PDR: Nam Theun 2 (NT2) Electric Project," (Minutes from the board meeting, 21 June 2009).

## 2.2 Company Profile

The GOL has been planning for a large dam on the Nam Theun River since late 1970s, but needed foreign investment to carry out the project. In the early 1990s, the World Bank, the Asian Development Bank and the Multilateral Investment Guarantee Agency involved themselves in the project to provide financial guarantees to the investors in NT2.<sup>15</sup> The Nam Theun Power Company (NTPC) was established in 2003 to manage construction and implementation of the NT2. At first, ownership of the Nam Theun 2 Power Company was divided between four shareholders:

1. EDF International of France (EDF) holds 35% ownership;
2. Lao Holding State Enterprise of the Lao PDR (LHSE) holds 25% ownership through Nam Theun 2 Power Investment Company (NTPI). NTPI—a newly created public company—invests in NTPC on behalf of the Electricité du Lao (EDL), the country’s state-owned power company, and represents it on the company’s board of directors;
3. Electricity Generating Public Company Limited of Thailand (EGCO) holds 25% ownership;
4. Italian-Thai Development Public Company Limited of Thailand (ITD) holds 15% ownership.<sup>16</sup>

However, in October 2010, ITD had entered into a Share Purchase Agreement with EGCO for 450,000 shares, with the remaining 225,000 shares to be sold to EDF international. NTPC will now be held by EGCO with a 35% share, by EDF with a 40% share, and by LHSE with 25%.<sup>17</sup>

The NTPC was responsible for constructing the dam, as well as implementation of the resettlement and social development measures related to the project, in partnership with GOL. The actual construction work was carried out by a number of sub-contractors, led by the head contractor, EDF.<sup>18</sup> Other main contractors included Nishimatsu Construction CO, General Electric/ABB/Clemmessy, Mitsubishi Corporation, and JPower Systems Corp.<sup>19</sup>

The NT2 Project is a build-own-operate-transfer (BOOT) project, which has a concession period of 31 years, including a 25-year operating period. At the end of the operating period, the project will be transferred to the GOL.<sup>20</sup>

## 2.3 Project Cost and Financing

A total finance package worth US\$1,580 million in capital commitments to NTPC was completed in May 2005. This funds the total base project cost of \$1,250 million, with additional amounts for contingency and ancillary bonding facilities. The financing arrangements reflect the project economics: just as NTPC

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<sup>15</sup> “Hydropower in Asia: The Nam Theun 2 Project.”

<sup>16</sup> Nam Theun 2 Power Company Limited, “Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited,” November, 2005, accessed April 25, 2013, <http://siteresources.worldbank.org/INTLAOPRD/Resources/293582-1092106399982/492430-1092106479653/SummaryofCA.pdf>.

<sup>17</sup> EGCO group. Annual registration statement As of December 31, 2011 Electricity Generating Public Company Limited. Accessed May 5, 2013. <http://egco.listedcompany.com/misc/FORM561/20130330-EGCO-Form561-2012-EN.pdf>

<sup>18</sup> “Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited.”

<sup>19</sup> Nam Theun Power Company Limited, “The Facilities.”

<sup>20</sup> Nam Theun Power Company Limited, “The Facilities.”

will receive payment for the electricity it generates in a US dollar/Thai baht split, so its credit is arranged in a half dollar-half baht arrangement. This increases the financial stability of the agreement.<sup>21</sup>

The US dollar senior debt facilities<sup>22</sup> include political risk guarantees from the ADB, the World Bank (WB) and the Multilateral Investment Guarantee Agency (MIGA), export credit agency support from COFACE of France, EKN of Sweden and GIEK of Norway, and direct loans from a number of multilateral and bilateral development agencies including the Nordic Investment Bank, Agence Française de Développement (AFD), PROPARGO, and the Export-Import Bank of Thailand. Nine international commercial banks (including Australia and New Zealand Banking Group Limited, BNP Paribas, The Bank of Tokyo-Mitsubishi UFJ, Ltd., Calyon, Fortis Bank, The ING group, KBC, SG and Standard Chartered) and seven Thai commercial banks (including Bangkok Bank, Bank of Ayudhya, Kasikornbank, Krung Thai Bank, Siam City Bank, Siam Commercial Bank and Thai Military Bank) are providing long-term loans to NTPC. In addition to senior loan facilities, shareholders completed the project financing by contributing equity proportional to their respective participation in NTPC.<sup>23</sup> The equity contribution of LHSE is financed by means of loans, grants and other financing from institutions, including the AFD, ADB, European Investment Bank and WB.<sup>24</sup>

## 2.4 Legal Framework

NT2 is governed by a variety of legal agreements that outline the obligations of NTPC and the GOL. The NT2 legal framework includes the Concession Agreement between the GOL and NTPC, and loan agreements with project financiers, such as the World Bank and the ADB.<sup>25</sup> The Concession Agreement (the CA) signed between NTPC and the GOL is the basis on which the Government granted NTPC a concession to develop, own, finance, construct, and operate the hydroelectric and related facilities, and to transfer the project to GOL at the end of the concession period.<sup>26</sup> The CA is for a period of 25 years from the Commercial Operation Date. Through the CA, NTPC has the right of using the water stored in the reservoir, subject to certain limitation and release obligation as stated in the Agreement. The CA, therefore, makes NTPC responsible for the whole water management aspect and associated release obligations and restrictions.<sup>27</sup> The WB and ADB loan and guarantee agreements with the GOL and NTPC, in turn, require compliance with these institutions' own policies. These legal agreements constitute the promises made to Lao villagers regarding compensation and mitigation measures, and the allocation of responsibility between NTPC and the GOL.<sup>28</sup>

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<sup>21</sup> "Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited."

<sup>22</sup> In the case of the company goes bankrupt, senior debtholders will be the first one that need to be repaid, followed by junior debt holders, preferred stock holders and common stock holders. Senior debt is secured by collateral, and that collateral can be sold to repay the senior debt holders. As such, senior debt is considered lower risk and carries a relatively low interest rate. Investopedia, "Definition of Senior Debt," accessed April 25, 2013, <http://www.investopedia.com/terms/s/seniordebt.asp>.

<sup>23</sup> "Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited."

<sup>24</sup> "Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited."

<sup>25</sup> "Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited."

<sup>26</sup> "Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited."

<sup>27</sup> "Summary of the Concession Agreement between the Government of Lao PDR and Nam Theun 2 Power Company Limited."

<sup>28</sup> Shannon Lawrence, International Rivers Network, "Nam Theun 2 Trip Report and Project Update," May 2007, accessed March 04, 2013, [http://www.banktrack.org/download/nam\\_theun\\_2\\_trip\\_report\\_and\\_project\\_update/070523\\_irn\\_nt2\\_trip\\_report.pdf](http://www.banktrack.org/download/nam_theun_2_trip_report_and_project_update/070523_irn_nt2_trip_report.pdf).

## 3. Project Impacts

### 3.1 Environmental Impacts

The Nam Theun River is situated in the Khammouane province in central Lao PDR. The central part of Laos is internationally recognized as a region of important biological diversity. The NT2 project is surrounded by three national biodiversity conservation areas (NBCA): the Nakai Nam Theun NBCA; the Phou Hun Poun NBCA; and the Hin Nam Nor NBCA. The Nakai Nam Theun NBCA is the largest protected area in Lao PDR.<sup>29</sup> It is seen as one of Asia's most important NBCAs in the light of global biodiversity, as it has a great extent and quality of forest cover and is ranked very high in terms of threatened bird and mammal species. The Phou Hun Poun NBCA and the Hin Nam Nor NBCA are located south of the project. These two areas constitute the habitats for several threatened and endangered species, such as the Asian elephant, the tiger, and the white winged duck. Several new species have been discovered in the area, such as the soala (a new species of muntjac), and the Heude's pig.

#### 3.1.1 Terrestrial Biodiversity

Diversity of geological conditions and regional climate has broadened the variety of habitats in the area. The climate of the region has led to a highly diverse deciduous forest at the expense of evergreen forests. A combination of different faunal characteristics in the region has caused a high level of biodiversity, isolation and endemism. A large part of the Nakai Nam Theun NBCA remains in nearly pristine condition because of it being sparsely populated, remote, and difficult to access.<sup>30</sup> Biophysical, climatic, and anthropogenic factors have resulted in a highly diversified area of forest and vegetation.<sup>31</sup> However, after the NT2 project was constructed, it created a large reservoir that inundated an enormous area. This change has various impacts in an area rich in biodiversity and natural resources. It is important to highlight that the area impacted by NT2 was not in a pristine state before dam construction activities began. Some of the land in the reservoir area is unsuitable for agriculture and forestry since the forest and soil are heavily degraded,<sup>32</sup> and illegal unsustainable logging and hunting have been practiced for many decades.

Biodiversity of the region is greatly affected by the inundation, because it will create an uninhabitable area for local plant and animal species. As a result, species inhabiting the flood area will be forced to find other habitats or, if they cannot, suffer population decline.<sup>33</sup> Although animal species may find new habitats, they can have trouble adapting to or surviving in another area. In studies done by the NGO International Rivers, they argue that the NT2 project will negatively affect more than 60 species of mammals and birds, and three to four species risk extinction.<sup>34</sup>

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<sup>29</sup> Nam Theun 2 Power Company Limited, "Environmental Assessment and Management Plan—Nam Theun 2 Hydroelectric Project," 2005, accessed March 04, 2013, <http://www.namtheun2.com/reports/summary-environmental-a-social-impact-assesment-sesia.html>.

<sup>30</sup> Holt Julie, Hogh Jacob, Jacobsen Rune, Jensen Mads, Nielsen Dorthe, "Environmental and Social Sustainability Issue in the Nam Then 2 Hydropower Project," last modified 2007, accessed March 03,2013,

<sup>31</sup> "Environmental Assessment and Management Plan—Nam Theun 2 Hydroelectric Project."

<sup>32</sup> Nam Theun 2 Power Company Limited. "Safegurd Documents," accessed April 22, 2013, <http://www.namtheun2.com/enviroment/safeguard-documents.html>.

<sup>33</sup> "Environmental and Social Sustainability Issue in the Nam Then 2 Hydropower Project,"

<sup>34</sup> International Rivers Network, " Power Struggle: The Impacts of Hydro-Development in Laos," last modified February 1999, accessed April 04, 2013, <http://www.internationalrivers.org/resources/power-struggle-the-impacts-of-hydro-development-in-laos-4058>.

### 3.1.2 Aquatic Biodiversity

Sedimentation in the river will increase as a consequence of the construction of the Nakai Dam and the Downstream Channel.<sup>35</sup> Construction material from road construction can be washed into the river by rainfall, and roads that have not been stabilized properly can be partly washed into the river during the rainy season. This could potentially lead to a number of negative impacts.<sup>36</sup> First, the fish in the river can suffer damage to their gills from the sediments, leading to fish deaths. Second, fish depending on rocky habitats could lose their habitats because of sediment cover. Moreover, silt covers newly laid eggs or newly hatched larvae. This is a problem not only for aquatic biodiversity, but also for local communities, since it will put at risk the livelihood of those people who use the fish a food source.



**Figure 2: Livelihood of Laos Local Community: fishery. Credit: Alen Laguta. [http://www.123rf.com/photo\\_18494492\\_a-fisherman-in-a-long-boat-on-the-mekong-river-amid-the-big-mountain.html](http://www.123rf.com/photo_18494492_a-fisherman-in-a-long-boat-on-the-mekong-river-amid-the-big-mountain.html)**

The changes in rainfall during the year will cause the water level in the reservoir to fluctuate as the seasons change. Only a limited number of species, both terrestrial and aquatic, in the area affected by the fluctuation will be able to use this area as a habitat. In extreme cases, the fluctuation will mean that the water level will be 12.5 m below the water level when the reservoir's full storage is reached. In this case, 81.8% or 362 km<sup>2</sup> of the area of the reservoir will not be covered by water.<sup>37</sup> In combination with the other effects, the fluctuation will put several native species at risk of extinction.

### 3.2 Social Impacts

The NT2 displaced 6,738 people from 17 villages and 1298 households.<sup>38</sup> According to ABD and WB definitions, this population is characterized as indigenous and is considered to be poor even within Lao PDR standard.<sup>39</sup> The construction of the dam brings much attention to the area. Some of the resulting activities have great development potential, and areas that would remain neglected are receiving attention and funding. For example, the NBCAs in the area have a budget that is significantly larger than national protected areas in other parts of Laos. Despite the many criticisms of displacement and resettlement as well as the environmental impacts, it is an activity that has produced some positive results. Resettled populations have been provided with new housing and livelihoods that could be the basis for a general development of the population. Bounsouk Souksawath and Mikiyasu Nakayama have

<sup>35</sup> "Environmental Assessment and Management Plan—Nai Theun 2 Hydroelectric Project."

<sup>36</sup> "Environmental and Social Sustainability Issue in the Nam Theun 2 Hydropower Project,"

<sup>37</sup> "Environmental Assessment and Management Plan—Nai Theun 2 Hydroelectric Project."

<sup>38</sup> Bounsouk Souksawath, Mikiyasu Nakayama, International Journal of Water Resources Development, "Reconstruction of the livelihood of resettlers from the Nam Theun 2 hydropower project in Laos," last modified December 10, 2013, accessed April 22, 2013, <http://www.tandfonline.com/doi/abs/10.1080/07900627.2012.738792#preview>.

<sup>39</sup> "Environmental Assessment and Management Plan—Nai Theun 2 Hydroelectric Project."



argued in “Reconstruction of the livelihood of resettlers from the Nam Theun 2 hydropower project in Laos” that, “Most resettlers surveyed by this report that they are satisfied with their present resettlement villages and that they will continue to live there. Most residents believe that the place they now live in is good for their children because of the improved public infrastructure.”<sup>40</sup> Although, there are positive effects in the short-term, some residents are still concerned about long-term effects. Many of the residents were concerned about housing.

Although, the NT2 contributes positive effects to the area; it also negatively impacts the local community. The construction of the dam will considerably increase the amount of people living in the project area, which can undermine the traditional way of life for the community. Since the NT2 did not have enough land for resettlement, some of the villages have to merge with other villages, which might have different traditional ways of life. As a result, the resettlement can both affect the local community emotionally and physically. It can be difficult for people from a specific ethnic background to integrate into a different culture. Changing livelihoods is also a major change in the lives of the resettled. For many villagers, their new livelihoods will mean adjusting to a money-based economy, different from their previous subsistence economy.<sup>41</sup>

### 3.3 Controversial Issues

From the start of NT2 project, International Rivers was opposed to WB and ADB support for NT2. International Rivers’ main arguments have been that the NT2 project does not meet the World Commission on Dams guidelines, that the risks to affected communities outweigh any potential project benefits, and that the project will not contribute to poverty reduction in Laos. In 2005, International Rivers published *An Analysis of Nam Theun 2 Compliance with World Commission on Dams Strategic Priorities*. The analysis shows that the project fails to comply with six of the seven strategic priorities outlined in the WCD report. On this basis, International Rivers recommended that the WB not provide guarantees and other assistance for NT2, but instead should work immediately on developing alternative plans for conserving the watershed area and improving the livelihoods of people living on the Nakai Plateau.<sup>42</sup> The discussion that follows will focus only on the WCD priorities identified previously as part of the framework for analysis for this report.

International Rivers argued that the fundamental problem is the political climate in Laos, which makes a truly open and participatory decision-making process almost impossible. Although there have been innumerable public participation workshops and meetings, most of these took place within the context of a decision already made, seeking input solely on project design or mitigation measures. Indigenous people who are directly affected by NT2 have not given their free, prior and informed consent to the project, as defined by the WCD and international human rights convention.<sup>43</sup>

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<sup>40</sup> “Reconstruction of the livelihood of resettlers from the Nam Theun 2 hydropower project in Laos,”

<sup>41</sup> “Environmental Assessment and Management Plan—Nam Theun 2 Hydroelectric Project.”

<sup>42</sup> Aviva Imhof and Shannon Lawrence, International Rivers, “An Analysis of Nam Theun 2 Compliance with World Commission on Dams guideline,” accessed March 22, 2013, <http://www.internationalrivers.org/resources/an-analysis-of-nam-theun-2-compliance-with-world-commission-on-dams-guidelines-4124>.

<sup>43</sup> “An Analysis of Nam Theun 2 Compliance with World Commission on Dams guideline.”

In addition, International Rivers argued that the decision to construct the dam was made well before the public was invited to participate in the decision-making process. The majority of the public consultation and participation effort took place after 1995, when the project's detailed design had already been finalized.<sup>44</sup> Moreover, villagers were never given the opportunity to consent to or reject the project or the resettlement options and mitigation measures.<sup>45</sup>

Finally, enforcing compliance is a fundamental problem within Laos. Lao PDR's rudimentary legal, administrative, and political structures make enforcement of GOL and NTPC commitments difficult.<sup>46</sup> The WB has been unable to ensure compliance with conditions imposed prior to project approval, and thus, it is difficult to see how they will be able to ensure compliance now that money and guarantees have been disbursed and the project is built.<sup>47</sup>

#### 4. Response

In order to implement and manage the mitigation measures, GOL has Established the Watershed Management and Protection Agency (WMPA) to be one of the main organizations to manage and monitor NT2 impacts on the environment and inhabitants. The agency's main task is conservation and management of the watersheds and areas around them, especially the National Biodiversity Conservation Areas. They also perform activities, such as education of local citizens in hygiene and coexistence with the surrounding environment in the watershed.<sup>48</sup> The organization also monitors the environmental impacts that NT2 has on the surrounding area, which includes wildlife and water quality in the Nakai Plateau and the number of endangered flora and fauna species in the watershed area.

GOL created the Resettlement Management Unit to arrange the resettlement activities. The unit works in cooperation with the NTPC to carry out resettlement of villagers, construction of new houses, and other activities that were described in the Environmental Assessment and Management Plan for NT2.

In an attempt to mitigate NT2's impacts and compensate Xe Bang Fai villagers, NTPC has developed a resettlement plan for the affected local community (see Appendix I) and also the Downstream Livelihood and Asset Restoration Program (Downstream Program). This program will be implemented in approximately 220 villages, including nearly 90 riparian villages. The Downstream Program focuses on micro-credit funds to support agriculture, aquaculture, and live-stock projects. NTPC is also supporting water and sanitation improvement, and in some villages, water gate rehabilitation or mini-polder flood protection. Pilot livelihood restoration projects were initiated in a downstream demonstration village, Boeung Xe, in 2005.<sup>49</sup>

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<sup>44</sup> Shamali Guttal. "Public Participation and Consultation for the Nam Theun 2 Dam, accessed April 25, 2013, <http://focusweb.org/publications/researchpapers/Research%20Papers/public%20consultation.html>.

<sup>45</sup> Shamali Guttal and Bruce Shoemaker, "Manipulating Consent: The World Bank and Public Consultation in the Nam Theun 2 Hydroelectric Project," accessed April 25, 2013, <http://www.internationalrivers.org/files/attached-files/manipulating0904.pdf>.

<sup>46</sup> "An Analysis of Nam Theun 2 Compliance with World Commission on Dams guideline."

<sup>47</sup> Update on the Lao PDR: Nam Theun 2 (NT2) Electric Project."

<sup>48</sup> "Update on the Lao PDR: Nam Theun 2 (NT2) Electric Project."

<sup>49</sup> "Update on the Lao PDR: Nam Theun 2 (NT2) Electric Project."

In January 2008, NTPC proposed a revised US\$16 million Downstream Implementation Plan to the GOL and the international financial institutions. This plan provides an analysis of expected physical impacts and the consequent social and economic effects of the project, as well as measures defined in relation to the specific anticipated impact for each area. The Downstream Program's mitigation, compensation, and livelihood restoration activities involve people living along the Xe Bang Fai, from the junction of the Nam Gnom to the Mekong River. It also includes villages not located along the Xe Bang Fai, but who rely on the Xe Bang Fai for fish or aquatic products. The Downstream Program also covers villages that rely on the impacted waterway for fish or aquatic and will take into account any impact on historic or spirit sites and temples.<sup>50</sup>

In addition, the project is directly contributing funding of US \$ 1 million per year in each the 25 years after the beginning of commercial operation in order to support the actions and provide technical management of the (WMPA),<sup>51</sup> a special-purpose government entity established under the Prime Minister's office that is responsible for the management and operations of Project Watershed. An Additional US\$6.5 million was contributed during the construction phase. Detailed conservation plans are provided in the Social and Environmental Management Framework and Operational Plan (SEMFOP).<sup>52</sup>

Finally, two Grievance Offices have been set up in Nakai and Gnommalath to allow villagers affected by construction activities to express their concern or request.<sup>53</sup>

## 5. Analysis

### 5.1 World Commission on Dams guidelines for sustainability in hydropower

The frame for the sustainability discussion used in this report is compiled on the basis of seven strategies to promote sustainability of hydropower projects. The World Commission on Dams (WCD) developed these strategies in 2000.<sup>54</sup> The WCD guidelines have been considered the most useful standard for the discussion of environmental and social sustainability, because they seek equitable and sustainable development of water and energy resources,<sup>55</sup> specifically in the context of hydropower projects. The seven strategic priorities that make up the guidelines are as follows:

1. Gaining public acceptance
2. Comprehensive options assessment
3. Addressing existing dams
4. Sustaining rivers and livelihoods

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<sup>50</sup> Nam Theun Power Company Limited, "Downstream Programme," accessed April 30, 2013, <http://www.namtheun2.com/emiroment/downstream-programme.html>.

<sup>51</sup> Nam Theun Power Company Limited, "Watershed Management," accessed April 30, 2013, <http://www.namtheun2.com/emiroment/watershed-management-protection-.html>.

<sup>52</sup> "Watershed Managemen.t"

<sup>53</sup> Nam Theun Power Company Limited, "Social Improvement and Opportunities," accessed April 30, 2013, <http://www.namtheun2.com/emiroment/social-improvements-and-opportunities.html>.

<sup>54</sup> International Rivers, "Dams and Development: A New Framework for Decision-Making," accessed April 30, 2013, <http://archive.org/details/DamsAndDevelopmentANewFrameworkForDecision-making>.

<sup>55</sup> "Dams and Development: A New Framework for Decision-Making."

5. Recognizing entitlements and benefit sharing
6. Ensuring compliance
7. Sharing rivers for peace, development, and security

Each of these priorities consists of several principles that specify how to ensure contributions to sustainability in hydropower projects. All the issues of the strategic priorities outlined and discussed by WCD are relevant when working to ensure environmental and social sustainability of a hydropower project. However, in this report only a selection of the relevant priorities was applied to serve as the framework for the study.

#### **BOX 2: WORLD COMMISSION ON DAMS**

On the 50th anniversary of the WB in 1994, more than 2,000 organizations signed the Manibeli Declaration, calling for the WB to establish an “independent comprehensive review of all Bank-funded large dam projects.” At the end of 1994, the WB’s Operations Evaluation Department (OED) announced that it would undertake a review of large dams the Bank had funded. The review was completed in 1996 but never released to the public. NGOs critical of the review argued that the OED had not only exaggerated the benefits of the dams, but also displayed a deep ignorance of the social and ecological effects and impacts of dams.

In March 1997, the first international conference of dam-affected people was held in Curitiba, Brazil. The conference called for an immediate moratorium on all dam-building until a number of conditions were met. Shortly after the Curitiba conference, the WB and IUCN invited around 40 representatives from different fields to a workshop in Switzerland, to discuss a second phase of the OED’s 50-dam review. Participants at the workshop agreed on the urgent need for an independent commission to review large dams in general. Agreement was reached on the mandate and composition of the WCD in February 1998. The group that had overseen the Commission’s establishment was enlarged to serve as a consultative body and named the WCD Forum. The 68-member Forum met three times between 1998 and 2001 to provide input into the work of the Commission.

Twenty affected people’s groups and NGOs under the name of the International Committee on Dams, Rivers, and People, which provided input into the WCD, were represented in the Forum. Stakeholders from around the world, including a broad spectrum of those with an interest in large dams, rivers, and energy—government and dam operators, corporations and industry associations, river basin authorities and academics, NGOs and people’s movements sent in submissions, gave presentations at regional consultations, participated in meetings on the detailed case studies and commented on drafts of the thematic reviews.

After the WCD Commissioners worked to overcome their different backgrounds and perspectives, they agreed on a report at the end of the process. The report, formally titled *Dams and Development: A New Framework for Decision-Making*, was launched by Nelson Mandela at a ceremony in London on November 16, 2000. The report is commonly referred to as “the WCD Report.”

Source: International Rivers. “Dams and Development: A New Framework for Decision-Making.” Accessed April 30, 2013.  
<http://archive.org/details/DamsAndDevelopmentANewFrameworkForDecision-making>.

### 5.1.1 Gaining public acceptance

This priority stresses the importance of involving adversely affected people in the decision-making process of a hydropower project. By including people living in the project area both directly and indirectly, people's legal and customary rights regarding their livelihood, resources, habitat, social networks and cultural heritage may be compromised. According to this principle, people in the affected area should be full and active participants in the decision-making process. Local community participation makes it possible to address social and economic disparities during the planning process of the dam. Their acceptance of the project can legitimate the project socially and produce a positive and lasting outcome. However, if this acceptance fails, it may cause conflicts and debate about the social legitimacy of the project.<sup>56</sup>

### 5.1.2 Sustaining rivers and livelihoods

The rationale for this priority is that rivers, watersheds and aquatic systems are the basis for life and livelihood of local communities; therefore, the maintenance of rivers, watersheds and aquatic systems is important. Moreover, rivers are also far-reaching, and effects on ecosystems, livelihoods, and economic activities in a huge area can lead to losses, conflicts, irreversible impacts, and inequity. It is important to address the effects dams have on rivers to avoid or mitigate these diverse effects.<sup>57</sup>

### 5.1.3 Recognizing entitlements and sharing benefits

People living within the reservoir and along the rivers are concerned that they are at risk of being impoverished as a result of dam building. Joint negotiation can help identify the adversely affected people and has to be done by consult with all stakeholders. The adversely affected people must be beneficiaries of the project and their livelihood and quality of life must be improved as a consequence of the project. It is crucial to have joint negotiations with local people to ensure that they are mutually agreed upon and legally enforceable mitigation and development measures, the responsibility of which falls on the developers and the State.<sup>58</sup>

### 5.1.4 Ensuring Compliance

Meeting all commitments for the planning, implementation and operation of the dam is important in order to ensure public trust and confidence. Failure to do this can result in impoverishment of affected people, under-performance, and environmental degradation, leading to criticism and stakeholders' distrust of the project. This may, in turn, lead to difficulties in leading the given project to decision points, as issues are to be reassessed until commitments are met. The government, developers, regulators and operators are responsible to work in compliance with regulations, guidelines and project-specific negotiated agreements, at all critical stages.<sup>59</sup>

## 5.2 Stakeholders Analysis

For the stakeholders affected by a dam project, the multifarious impacts cause a difference in interest with the shareholders who benefit financially from the project. The conflicting interests in a project

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<sup>56</sup> "Dams and Development: A New Framework for Decision-Making."

<sup>57</sup> "Dams and Development: A New Framework for Decision-Making."

<sup>58</sup> "Dams and Development: A New Framework for Decision-Making."

<sup>59</sup> "Dams and Development: A New Framework for Decision-Making."

mean that not all interests will be provided for. When these interests are weighed by planners, some interests are at risk of being prioritized lower than others. Especially environmental interests are at risk of being under-prioritized. This can constitute a challenge to the social and environmental sustainability of a project. Previous hydropower projects in Laos and other parts of the world have shown that economic interest is often prioritized above that of the interest of the ones adversely affected by the dam.<sup>60</sup>

### 5.2.1 Local Community

The interests among this group of stakeholders are rather difficult to outline precisely, as it is impossible to generalize about the situation of the affected people. First, the local citizens in different areas will be affected differently by NT2. The majority of the local citizens living near the location of the dam are dependent on the resources located in or near the river; and these people are affected and even resettled as a result of the dam. In the case of extreme poverty, as in the case of NT2, the reaction may be different if local people see the project as a way of escaping poverty and for that reason react positively towards the project.<sup>61</sup> Timing is also of great importance, because if the project cycle is delayed, positive attitudes may change.<sup>62</sup> When it is hard to affect the decision-making process, the interest among the affected citizens may be to be compensated in a way that their living standards will at least not be reduced. In this context, the transition from a subsistence economy to a market economy can be very challenging for the local community. Where the villagers had previously pursued self-sufficient livelihoods, now they must function in a system where money is necessary. Whether people will be interested in this new form of livelihood presumably depends on whether they are interested in adapting to a new lifestyle and culture.

### 5.2.2 Lao PDR Government

GOL's interest as a stakeholder would mainly be to serve the population's interests, but in this case, GOL has a double role in NT2. As the national government, they serve the nation's interests, but they also have a 25% share in the project, which splits this stakeholder into two of the stakeholder categories. GOL has some development goals; among these are to achieve rapid economic growth and to improve the living conditions of poor Laotians. Furthermore, the goals of halving poverty by 2015 and graduating from the status as one of the world's least-developed countries by 2020 are to be achieved through establishment of the NT2 and the revenues this power plant will bring to the country.<sup>63</sup>

### 5.2.3 Nam Theun Power Company

Nam Theun Power Company is the owner of NT2. The company cooperates with GOL on resettlement issues and monitoring the environmental impacts during the construction period. The building of NT2 is to be carried out by a number of investors, donors and shareholders. Among the shareholders with a long-term commitment in the work, the interest among shareholders in a project like NT2 is primarily to make a profit. However, the situation is more complicated. The companies do not benefit if they are

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<sup>60</sup> "Dams and Development: A New Framework for Decision-Making."

<sup>61</sup> Scudder, Thayer, *The Future of Large Dam; Dealing with Social, Environmental, Institutional and Political Costs* (Taylor & Francis, 2005), 244.

<sup>62</sup> *The Future of Large Dam; Dealing with Social, Environmental, Institutional and Political Costs*, 244.

<sup>63</sup> Holt Julie, Høgh Jacob, Jacobsen Rune, Jensen Mads, Nielsen Dorthe, "Environmental and Social Sustainability Issue in the Nam Then 2 Hydropower Project," last modified 2007, accessed March 03, 2013, <http://rudar.ruc.dk/bitstream/1800/2714/1/Nam%20Theun%202020report.pdf>.

viewed as only trying to make a profit with no thought of the local citizens and the environment. On the basis of the facts mentioned, the companies within NTPC can have different interests. On the one hand, all of the shareholders have the interest of profiting from what they have invested in NT2, although how this is achieved can be different for each company. On the other hand, at least one of the shareholders, LHSE, is a state-owned enterprise, meaning that interests from GOL also can play a role in the interest of this company.

#### 5.2.4 Lender: World Bank/ Asian Development Bank

The organizations ADB and WB have an important role in the decision making of the NT2 project. Because of their roles as lenders of considerable amounts of financial resources to GOL, this group of stakeholders is seen as having a dominant position in the project, with the WB in front.<sup>64</sup> One of the WB's interests is to be viewed as having concern for both the local citizens and the special environment of the Nakai Plateau because of some negative experiences related to earlier hydropower projects. The lenders, as they provide the economic guarantees for the project, have central economic power in relation to NT2; therefore, they play a major role in forming the economic, environmental, and social guidelines. This power is manifested in the way that WB and ADB can make sure that their safeguards for sustainability define the implementation of the project activities. This means that NTPC must accept a range of demands from the lenders. It also means, though, that the interests of the lenders are easier to carry through than the interests of those with more limited power and more limited voice in the project-affected areas.

#### 5.2.5 Non-Government Organization

Among the relevant stakeholder groups in the construction of NT2 are international non-governmental organizations (INGOs). As in relation to many other large-scale hydropower projects in developing countries, there are INGOs that have been critical of NT2.<sup>65</sup> The views and comments about NT2 of the organization International Rivers are relevant, because it is the most engaged critical NGO in the NT2 project. The fact that NGOs have been able to contribute with knowledge through the planning stage can be seen by the fact that the World Conservation Union (IUCN) and the Wildlife Conservation Society (WCS) have caused the National Biodiversity Conservation Area (NBCA) to be established in order to protect biodiversity in the area. After the first environmental assessments for NT2 were done in mid-1980s, the criticism from International Rivers and other INGOs was so massive that the studies were redone more comprehensively. This is also another important example of the impact of INGOs on the project.<sup>66</sup>

However, there are no significant Lao NGOs working on the NT2 project, in part because of the lack of space for independent NGOS to participate in the country's authoritarian political system. The Lao PDR legal system is at a rudimentary stage of development, and there is no independent judiciary. In such a political environment, it is hard for local NGOs to criticize and engage in the project. All NGOs critical to

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<sup>64</sup> Phomsoupha Xaypaseuth, 2006, "Nam Theun 2 Project—Lao PDR: Stakeholders Forum May 2006," Nam Theun 2 Project Steering Committee.

<sup>65</sup> *The Future of Large Dam; Dealing with Social, Environmental, Institutional and Political Costs.*

<sup>66</sup> Goldman, Michael, Ethno Graphy, "The Birth of a Discipline: producing Authoritative Green Knowledge, World Bank Style," accessed April 22, 2013, <http://institutionalorganizational/ecologies.files.wordpress.com/2011/01/world-bank2.pdf>

NT2 are from other countries, and in that case, there is no locally founded organized critique of the project. This outlines a problem when the interests of the affected communities and the local citizens are to be defended, as the local population often does not have the power to defend its own interests.<sup>67</sup>

## 6. Conclusions

NT2 hydropower project is large and complex, which makes it impossible to plan for every impact, as it is impossible to predict exactly what the long-term environmental and social consequences will be. However, the planning should strive to avoid predictable problems and to mitigate the problems that do occur in a thorough manner.

It is necessary to fully recognize the development potential of a project like NT2 in order to make the best of future projects. The income generated by electricity sales from NT2 will fund development programs in Laos. These benefits provide a primary rationale for building the dam. The underlying rationale seems to be that negative impacts on a relatively small area are acceptable, as long as there is a net benefit for the country. This rationale is not likely to change in future projects, but further emphasis could be put on the dam as a development project in itself. This is already done to some extent with the project-related activities in NT2, but future hydropower projects should increasingly act as a catalyst for development of the local community, and not just development of the country.

## 7. Recommendations for Future Hydropower Projects

### 7.1 Stakeholders Engagement

Nam Theun Power Company should engage NGOs during design and planning stages. NTPC can learn lessons from existing dams in the region from NGOs who are able to provide knowledge regarding sustainability of the project. In the case of NT2, knowledge of NGOs, especially International Rivers can add a great value to the strategy related to resettling citizens. NTPC can gain relevant knowledge about methods, lessons learned from other projects similar to NT2 and the area where NT2 is located from NGOs.

The role of the WB and ABD have been of great importance, and it is an institution that has had significant influence in deciding that mitigation, compensation and other project-related activities should be a part of NT2. However, addressing and acting on these lessons will be exceedingly important in future dam projects, as the role of international development banks and agencies is expected to decrease in coming years. If Lao PDR proves itself capable of handling the implementation of a large-scale hydropower project, investors and banks that are likely to be more focused on financial sustainability will enter the arena. This makes it crucial to secure a stronger framework for sustainability.

Moreover, the company needs to engage the adversely affected local community which has the most important information about the area and these people. The local community is the main group of people who will be directly affected from the project. For example, in case of NT2, Nakai NBCA is located

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<sup>67</sup> "Environmental and Social Sustainability Issue in the Nam Then 2 Hydropower Project."



in a remote region; the local community is the only asset which can help NTPC improve the knowledge within the area. Therefore, the company needs to include the local community into its process from the start and inform them throughout the project.

By including all relevant stakeholders into design and planning stages, the company will get a better picture of the overall project as well as increase positive affects on all stakeholders, which will help the company finish the project more smoothly.

## **7.2 Sustainable community development**

GOL faces serious challenges in terms of its ability to administer large hydropower revenues in a transparent and accountable way. The development of legally binding benefit sharing legislation at the national level appears to be the most promising approach seen so far towards ensuring some consistent level of benefit sharing over the long-term. GOL can apply lessons learned from Vietnam's government, which could help improve Lao PDR's image as a best practice as a low-risk destination for foreign investment.

For the compensation program, the NTPC should take the lifestyle of indigenous people into account while designing the program. Upon resettlement, these people will be introduced to a new way of life, from a subsistence economy to a more market oriented organization of the rural local societies' economic structure. Moreover, the way of life is not only limited to economic interest but also traditional livelihoods of the local community. For example, the company has resettled local communities from Nakai Plateau; in this area, rice has been a main food resource for many years and is not a subject for trade in a market economy. The company should carefully consider this issue, the land quality of the new settlement, whether it is suitable to grow rice, and if not, the company needs to find new solutions to solve this problem for the local community.

Moreover, WB and ADB also should take action to prepare GOL to be able to administer the project in the future. After 25 years of concession agreement, NTPC will hand the NT2 to Lao PDR. Therefore, it is important that WB and ADB, as lenders, help Lao PDR to have capacity to administer the project and manage revenue from the project. In addition to the national level, WB and ADB also need to assist GOL on how to improve administrative capacity at the local level.

## **7.3 Abide by Best International Standards**

Large dams for hydropower have been subject to major controversy regarding benefits and adverse impacts.<sup>68</sup> The developers should take international standards into account during planning processes to deal with these controversial issues. These are several frameworks that can be applied to hydropower projects, which include the International Hydropower Association that developed the Sustainability Guidelines in 2004 and a Sustainability Assessment Protocol in 2006. In addition, various assessment techniques, such as Social Impact Assessments, Multi-Stakeholder Platforms, and Transboundary Environmental Impact Assessments need to be applied to evaluate dam projects.

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<sup>68</sup> *The future of large dams: Dealing with social, environmental and political costs.*

Highly corrupt countries with weak legal frameworks like Lao PDR are easily influenced by developers and other actors with money and access to political power.<sup>69</sup> Lao PDR has addressed laws and regulations regarding hydropower development in its national policy; however, the government still lacks capacity and willingness to enforce these.<sup>70</sup> GOL has developed comprehensive legal frameworks to support sustainable hydropower development,<sup>71</sup> which the GOL has gradually improved to meet international financing requirements.<sup>72</sup> However, this development progress has been criticized because of poor compliance by dam builders and inadequate enforcement of laws by the GOL.<sup>73</sup> Therefore, regulatory practices need to be addressed and reformed.

Moreover, GOL should improve the transparency of its authority to gain public acceptance, which will help ensure the legitimacy of the project. The measures that GOL should take will be conducted publicly for greater transparency. The GOL should provide information which can be accessed by the public throughout all of the stages of the project. The GOL should play an important role in educating people about the project.

In the NT2 project, the potential for conflicted interests exists when contractors also serve as equity investors, when government also accepts an equity investment, and when consulting engineers drawn from the industry serving as the main source of technical advice. Therefore, the developers should assign project definitions, pre-feasibility and feasibility responsibilities to an independent institute with a mandate to protect the public interest. The lenders and the equity shareholders are relying on independent technical advisors to certify that the project is meeting environmental and social commitments. The technical advisors who serve a third party for particular projects should have no financial interest in that project.

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<sup>69</sup> Lawrence, S. CGIAR Challenge Program on Water and Food (CPWF), *Contested Waterscapes in the Mekong Region: Hydropower, Governance and Livelihoods*, (Lonson: Earthscan, 2009).

<sup>70</sup> *Contested Waterscapes in the Mekong Region: Hydropower, Governance and Livelihoods*.

<sup>71</sup> International Union for Conservation of Nature, Mekong Region Water Resources Decision-making National Policy and Legal Frameworks vis-à-vis World Commission on Dams Strategic Priorities, The World Conservation Union, Gland, Switzerland.

<sup>72</sup> Viraphonh Viravongl "Powering Progress," Presentation Ministry of Energy & Mines; Regional consultation on MRC's Hydropower Programme, Vientiane, Lao PDR, September 25-27, 2008.

<sup>73</sup> International Rivers, "Power Surge: The Impacts of Rapid Dam Development in Laos," last modified September 24, 2008, accessed April 22, 2013, Power Surge: The Impacts of Rapid Dam Development in Laos.

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## Appendix

The NTPC has developed a resettlement plan for Nakai Plateau Infrastructure as one part of the compensation to the adversely affected local community. The NTPC has resettled 1,310 families and 6,289 people in 17 villages; these have been resettled in 15 areas. The resettlement started in 2003 with construction of a pilot village for 30 volunteer families. The company provided a house with a ratio of 14 square meters for each person. House and land are owned by those resettled (Land titles were issued for housing plots and for 0.66 ha agricultural plots). The company also built roads to access every house and agricultural plot, and every house and building in the new village is connected to the electricity grid. Moreover, each village has a new primary and nursery school, market, village official, and meeting hall, ware house and rice mill. Other village community buildings, including a health center, seed processing center, and organic fertilizer factory for agricultural purposes. For water supply, boreholes and hand pumps were installed at a ratio of 1 per 5 households.<sup>74</sup>

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<sup>74</sup> Nam Theun Power Company Limited. "Resettlement on Nakai Plateau Infrastructure." Accessed April 30. <http://www.namtheun2.com/images/stories/key/resettlement-new.pdf>.



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