Investments into the Agribusiness, Extractive, and Infrastructure Sectors of Liberia

An Overview

The Rights and Resources Group

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Executive Summary

This paper seeks to characterize and quantify the regional investment trends of organizations investing in Liberian agribusiness, infrastructure, and extractive industries, to better understand their roles in land acquisition as related to deforestation and human rights. Though the methodology is here applied to Liberia, the same analysis will be applied to other countries including Cameroon, Lao PDR, Cambodia, Colombia, and Peru.

The analysis revealed a number of key points:

- Extractive investment in Liberia is focused on specific resources: iron ore, gold, diamonds, timber, palm oil, rubber, rice, and petroleum.
- The analysis generated a sample of 133 organizations, 44 of which provided land holding data, and 19 that were publicly traded.
- Foreign organizations doing business in Liberia hail from at least 18 different countries.
- Over 5.10 million hectares in government land concessions were identified.
- Concession area was dominated by transnational corporations at 5.02 million hectares of land, 98 percent of total concession area identified.
- Mining accounted for 56 percent of total identified area, forest products for 21 percent, and agriculture for around 19 percent.
- Gold miners accounted for over 43 percent of total identified area, timber companies about 21 percent, and palm oil producers 12 percent.
- Iron miners control only five percent of the identified concession area.

The average market capitalization of transnational corporations doing business in Liberia is US$16 billion. In terms of sector, mining companies averaged the largest with capitalization of US$21 billion, followed by agricultural firms at US$7.5 billion, and energy firms at US$20 million. In terms of resource, the capitalization of iron miners averaged US$42 billion, oil palm at US$8.2 billion, and rubber producers at US$6.9 billion. Average market capitalization of gold miners averaged only US$60 million.

The investment environment is dominated by transnational corporations. Transnational corporations have budgeted at least US$19 billion for future investment in Liberia, and have invested at least US$1.3 billion in Liberian operations and capital assets. Multi-lateral development agencies have committed at least US$697 million to Liberian projects in the form of grants, loans, and risk guarantees. In terms of sector, mining accounted for 69 percent of total budgeted Liberian investment, followed by agriculture at 30 percent, and forest products at one percent. Investment in specific resources was led by iron with 65 percent of total budgeted Liberian investment, palm oil with 30 percent, and gold with 4 percent. Future investment by private equity funds and sovereign wealth funds was estimated at US$23 million and US$590 million, respectively, though data was not readily available.

Debt was present on the balance sheets of transnational corporations operating in Liberia. Mining companies were most leveraged, with an average debt to equity ratio of 28 percent. Agricultural firms follow with a ratio of 20 percent. Companies in the energy, forest products, and infrastructure sectors either carried no debt in the capital structure or did not disclose it. In terms of specific resources, iron ore producers were the most leveraged, with an average debt to equity ratio of 32 percent, followed by rubber producers at 26 percent, and oil palm companies at 14 percent.

Of 19 publicly traded firms operating in Liberia, 12 provided a readily available corporate, social, or environmental policy statement. There were 12 publicly traded mining companies, five of which provided a CSR or environmental policy statement. All 6 publicly traded agricultural firms disclosed a CSR or environmental policy in an annual report or on their website. Most mining companies hail from developed, Western markets, where adherence to industry standards of "best-practices" is encouraged.

The risks of insecure tenure are ultimately revealed in an organization's cost of financing. As interest rates increase to reflect risk, so does an organization's fixed cost structure. In practical terms, entities with higher levels of debt in the capital structure are more sensitive to marginal changes in interest rates. Therefore, firms with higher levels of leverage are more vulnerable to the risks of insecure tenure. The findings for Liberia show that the sectors exhibiting the highest levels of debt to equity are mining and agriculture, specifically iron mining at 32 percent, rubber at 26 percent, and oil palm at 14 percent.

Investment in major infrastructure assets has been undertaken by transnational corporations as part of concession agreements negotiated with the Government of Liberia. However, multi-lateral development organizations have committed the bulk of their dedicated Liberian funds to improving infrastructure.

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1.0 Introduction

Increasing global demand for land over the past decade has resulted in large-scale land acquisitions, primarily focused in the developing world. The International Land Coalition recorded around 203 million hectares of large scale land deals from 2000 to 2011, increasing in pace toward the end of the decade.[1] Drivers of global land acquisition include farm production, forestry, industry, and mineral extraction.[1] Participants in the land-grab include public entities like governments, as well as private entities motivated by profit generation. Unfortunately, the developing world focus of acquisitions means that the transfer of land often occurs at the expense of small holder agriculture and local tenure. [1]

Kissinger, Herold, and de Sy (2012) examined the drivers of deforestation and forest degradation in Africa, Latin America, and subtropical Asia. The paper identified the primary global drivers of deforestation as commercial agriculture, local agriculture, mining, infrastructure, and urban expansion.[2] Taken in conjunction with the drivers of the global land grab, it follows that recent large-scale land acquisitions may be contributing to forest loss and degradation. This paper seeks to characterize and quantify the regional investment trends of organizations investing in Liberian agribusiness, infrastructure, and extractive industries, to better understand their roles in land acquisition as related to deforestation and human rights.

Liberia was chosen as the initial country on which to test the tracking methodology. The Government of Liberia is actively recruiting foreign investment to develop its natural resources. Liberia is also compliant under the Extractive Industries Transparency Initiative (EITI), meaning that organizations operating in the extractive industries are required to report all payments made to the government. This means that land deals in Liberia tend to be relatively well publicized both by the government, the EITI, and the media. In addition to Liberia, the methodology will be applied to Cameroon, Lao PDR, Cambodia, Peru, and Colombia.

2.0 Methodology and Indicators

The United Nations Conference on Trade and Development (UNCTAD) publishes an annual World Investment Report, wherein sources of foreign direct investment are divided between transnational corporations, sovereign wealth funds (SWFs), and private equity funds (PEFs). The following analysis utilizes these UNCTAD investor classifications as a base from which to quantify and characterize investment flows in target countries.

Transnational corporations are defined as "incorporated or unincorporated enterprises comprising parent enterprises and their foreign affiliates."[3] TNC cash holdings in 2011 were estimated at between US$4 and 5 trillion.[4] This analysis also includes state-owned enterprises under the classification of TNC. State-owned enterprises are "those enterprises comprising parent enterprises and their foreign affiliates in which the government has a controlling interest, whether or not listed on a stock exchange."[5] UNCTAD estimates that globally, there are over 650 State-owned enterprises, along with 8,500 foreign affiliates.[5] Information on transnational corporations doing business in a particular country was gathered from a variety of sources including the Extractive Industries Transparency Initiative, the International Land Coalition, local and regional stock exchanges, and the Land Portal database. Financial and investment information was generally gathered from company financial statements or periodicals.

UNCTAD defines sovereign wealth funds as "government investment vehicles that are funded by the accumulation of foreign exchange assets and managed separately from the official reserves of the monetary authorities."[6] SWFs have tended to adopt long-term, passive investment strategies, allocating the majority of portfolio assets towards investments in "investment-grade, short-term, liquid sovereign assets in major currencies, particularly United States Treasury securities," though recently with an increasing appetite for equities.[6] Globally, SWFs are estimated to manage over $5 trillion in assets.[6] Periodical searches provided the most fruitful source of information on sovereign wealth fund activity.

Private equity funds are described as "funds controlled and managed by . . . firms that collect funds from private investors . . . and buy majority or entire ownership stakes in companies and/or business units with a view to restructuring the management and organization, and thereby raising the stock value of the latter for resale."[7] As opposed to SWFs, PEF investments are more short-term in duration, averaging from 5 to 8 years.[4, 6] In 2007, UNCTAD estimated that private equity funds managed around $540 billion in assets. [6] Information on private equity funds was gathered through periodical searches.

Multi-lateral development banks (MDBs) are included as a fourth investor classification. The analysis is concerned with linkages between the public and private sectors, through which private sector actions may be influenced. Here, those private firms receiving financial support from development agencies will be subject to policies imposed by the lender. For simplicity, this portion of the analysis is limited to projects attributable to the World Bank Group, the Asian Development Bank, the African Development Bank, and the Inter-American Development Bank. MDB investment information was gathered from each organization's website.

Several strategies were used to characterize and quantify the activities of transnational corporations operating in Liberia. Methods and indicators were chosen based upon their utility for the comparison of organizations across sectors and countries of operation. In quantitative terms, the analysis compares firms based on valuation, leverage, investment size, and investment impact. Qualitatively, firms are compared based upon counterparty, concession term, sources of financing, location, and the presence (or lack) of a Corporate Social Responsibility policy.

Financial analysts use a variety of different measures to compare companies in terms of size and valuation. Three of the most commonly employed are market capitalization, book value of assets, and enterprise value. These measures are important because comparing company size across sectors is key to understanding the market landscape.

Market capitalization is calculated as the current market price of a company multiplied by the number of common shares outstanding.[8] It is perhaps the most popular metric for comparing company size. Companies are organized by capitalization into one of five classifications: 1) mega-cap (greater than US$200 billion), 2) large-cap (US$200 to US$10 billion), 3) mid-cap (US$10 to US$2 billion), 4) small-cap (US$2 billion to US$250 million), 5) micro-cap (US$250 to US$50 million) or nano-cap (less than US$50 million).[8]

The second metric is book value. Book value is calculated as the value of total assets, less the value of total liabilities, less the value of preferred stock. [8] The result is the net equity value of the firm's assets. As a valuation measure, book value provides an indication of the true value to shareholders of the firm's assets.

Enterprise value is the final metric, and represents the price that a buyer of a company would pay in the event of an acquisition.[9] It is calculated as market capitalization, plus debt, less cash.

Debt in the capital structure is measured using the debt to equity ratio. This metric is calculated by summing the value of short and long term debt carried on the balance sheet, and dividing by total equity.[10] A higher amount of debt in the capital structure implies that a company is more sensitive to changes in interest rates.

Ideally, quantification of current and future investment flows could be accomplished by a look at a firm's capital budget forecast. However, budget data is not typically available to the public. Furthermore, many of the firms identified in this paper are multi-national in scale. In such cases, company financials may not provide country specific budget data, but rather consolidated, regional allocations. Given these complicating factors, three methods were derived to estimate country-specific capital budget allocations.

The first method involved an extensive literature and periodical review to identify concession or investment agreements negotiated between large firms and domestic governments. Large-scale investments by multi-national firms are generally well publicized in the media, and typically include a company estimate for gross investment over the life of the resource. When available, these figures serve as a proxy for the portion of a firm's budget devoted to operations in a particular country. For smaller firms with operations in a single country or region, any plans to raise capital, including IPO's, equity issuance, or debt issuance, were used as an estimate of future investment, and adjusted for information included in the accompanying filings.

Second, a simple model was derived to estimate accumulated company investment in a particular country assuming that investment activities consist of operating and capital expenses. Frequently, the annual and periodic filings of public firms provide indications as to the destination of future expenditures, and in some cases, the geographic distribution of operating expenses, capital expenses and capital assets. The model takes the form of:

Operating Expenditure + Capital Expenditure + Intangibles + Depreciation = Total Accumulated Investment

Operating costs (OPEX) are those costs associated with the daily functioning of a business, like providing services or selling goods.[10] They are characterized in the financial statements as "operating expenses" or "administrative expenses" and appear on the income statement. Because the income statement represents a firm's profitability over a discrete period of time, estimating accumulated operating expenses required the summation of operating expenses from previous periods.

Capital expenditures (CAPEX) are costs associated with acquiring or disposing of long term assets [10], commonly referred to as property, plant, and equipment (PPE). CAPEX is reported on the statement of cash flows as an investing activity. Capital assets are held on the balance sheet net of accumulated depreciation. The nature and geographic distribution of capital assets are generally discussed in the notes accompanying financial statements, along with accumulated depreciation, especially for those firms engaged in mineral and petroleum exploration. As a result, the method of estimating CAPEX varied according to the detail provided, including retroactively summing CAPEX as reported on the statement of cash flows, adjusting capital assets recorded on the balance sheet for accumulated depreciation, or using CAPEX and depreciation figures reported in accompanying notes to the financial statements.

Under International Accounting Standards, an intangible asset is a "non-monetary asset without physical substance that is controlled by the entity as a result of past events and from which future economic benefits are expected."[11] Intangibles can include things like copyrights or patents, and according to International Financial Reporting Standards 6, they may also consist of the capitalized expenses associated with project development, which for the purposes of this analysis, included spending associated with rehabilitating plantations, or locating mineral resources.[12] Intangible assets are held net of impairment, [12] though the analysis does not include this adjustment.

Because companies do not typically distinguish between geographic areas when reporting operating costs, arriving at an estimate of OPEX was sometimes confounded by companies with operations in multiple countries. However, the destination and value of CAPEX, intangible assets, and accumulated depreciation are frequently described, or easily calculated. As a result, estimates of Total Accumulated Investment derived from the above model incorporated as much data as was available in order to arrive at a figure representing a reasonable approximation of a "minimum amount" devoted to doing business in a particular country. Because figures were unadjusted for impairment and were derived from past financial results, this method of deriving country-specific investment flows likely underestimates the true amount. Unless otherwise noted, the most recently released audited, company annual report provided data for the analysis.

A third approach uses capitalized values of relevant Intangible Assets as a base. This figure was adjusted according to information found in periodical searches, or in company publications that may have been released since the last annual report. Because capitalized costs of development were frequently the only reliable figures available, adjustments to this item should provide the most up-to-date reflection of accumulated spending devoted to a particular country.

Finally, ratios of investment to concession area were calculated as a method of relating investment flows to potential social and environmental effects. Those firms spending more dollars per hectare might be expected to generate more chronic environmental or social effects relative to their peers. Comparison of this ratio across sector and industry helps form a picture of the relative intensity of company and industry operations. Ratios were calculated using expected total investment, accumulated investment, and exploration and development costs.

It must be noted that investment figures are recorded as gross commitments or estimates as reported in the news, or estimated from company financial information. Investments and budget allocations commenced at different times with different durations. Therefore, the figures reported in the following analysis are unadjusted for the time value of money and inflation. This means that though larger trends emerge, without the proper adjustments, investment figures are not directly comparable between individual companies.

3.0 Country Overview[i]

Liberia has a total land area of 9.6 million hectares, 4.3 million hectares of which are forested [13]. Total population was estimated at 4.129 million in 2011[14], and per capita gross national income at US$540.[14]

[i] For more information on sources and methodology used in this study, please contact the Rights and Resources Group at info@rightsandresources.org

Though Liberia is rich in natural resources, civil conflict stretching from the late 1980's to 2003[15] led to serious deterioration of much of the country's infrastructure. President Ellen Johnson Sirleaf was elected in 2005 and has actively sought out investment from foreign companies in natural resource-based industries as a means of rebuilding the country and rehabilitating the Liberian economy. This has been accomplished through the award of large-scale concession agreements to develop natural resources. Concession agreements include clauses that quantify the payments that firms must make to the Government of Liberia, payments to local communities, and investment in local and national infrastructure. In this manner, much of the infrastructure development in Liberia is being accomplished by the holders of concession agreements themselves.[16, 17, 18, 19-22, 23]

The list of organizations participating in the Liberian Extractive Industries Transparency Initiative was used as the basis of this research, and supplemented with periodical searches.[24] The analysis generated a sample of 133 organizations, 44 of which provided land holding data, and 19 that were publicly traded. Foreign organizations doing business in Liberia hail from at least 18 different countries. These firms account for more than 5.10 million hectares in government land concessions.

Please see Table 1 and Table 2.

The missing data is primarily composed of companies associated with the mining sector. Importantly, the EITI list of firms represents those extractive organizations that have made payments to the Government of Liberia. It was assumed that many of these organizations are small and maintain no online presence. Furthermore, as research progressed, it became evident that a strategy taken by some local firms was to purchase the rights to explore prospective areas, with no intention of exercising those rights, and to later sell the right to a particular area to organizations interested in undertaking exploration activities.[25, 26] Here, the implication is that some of the firms making payments to the Government of Liberia may not even be actively exploring or developing their allotted concession area. Most important however, is that since the analysis was conducted as a desk-search, information on organizations with little or no online presence is likely to have been omitted.

Since 2005, private corporations have accounted for the vast majority of concessions and investment in Liberia. Total area conceded to private corporations was estimated at 5.02 million hectares and estimated future investments in Liberian operations at US$19 billion. Accumulated investment by multi-lateral development organizations since 2005 was approximated at US$697 million, though land-holding data was not frequently reported. Private equity funds accounted for 60 thousand hectares in concessions, along with a future investment figure of US$23 million. Beginning in 2005, sovereign wealth funds with holdings in Liberia totaled 22.4 thousand hectares in concessions and are expected to invest around US$590 million.

Please see Table 1.

In terms of the share of land-holding by sector, mining concessions were largest at 2.8 million hectares, followed by forest products and agriculture at 1.1 million and 1.0 million hectares, respectively. Onshore oil and gas concessions totaled just over 136 thousand hectares.

Please see Table 3.

Extractive investment in Liberia is focused on key resources: iron ore, gold, diamonds, timber, palm oil, rubber, rice, and petroleum. Gold exploration and timber concessions comprised 2.2 million and 1.1 million hectares. Oil palm plantations totaled 620 thousand hectares, followed by rubber plantations at 370 thousand. Diamond exploration concessions amounted to 360 thousand hectares, and iron ore production and exploration to 260 thousand hectares. As above, onshore oil and gas exploration totaled only 136 thousand hectares. Most of the oil and gas activity in Liberia is located offshore, and is therefore beyond the scope of this study. [27]

Please see Table 4.

4.0 Extractive Industry

4.1 Mining

4.11 Introduction

For the purposes of this analysis, the licenses of concern were assigned for either mineral exploration or mineral production. Early stage exploration requires a Mineral Reconnaissance License with a term of six months.[28] Later stage exploration work where significant drilling activities will be performed corresponds to a Mineral Exploration License, with an initial term of three years with an optional renewal of two years.[29] Mineral Development Agreements are long-term contracts assigning a company the right to develop a resource over a long period of time, and valid for 25 years, though the term is negotiable.[30]

4.12 Transnational Corporations

Information on concession area was procured for sixteen mining organizations in Liberia, ten involved in gold exploration and production, five in iron ore production, and one diamond miner.[24] Twelve of the firms are publicly traded on national or regional stock exchanges. Average market capitalization of the gold miners was estimated at US$60.5 million, with a total area under concession of nearly 2.3 million hectares. By contrast, average market capitalization of the iron producers was estimated at US$42 billion, with a total area under concession of 251 thousand hectares. Large iron mines existed in Liberia before the civil war, and rehabilitation of the existing facilities required the participation of large, global firms with the capacity and cost structure to economically revamp and rebuild the infrastructure to transport ore. As a result, the Liberian operations of these large firms are concentrated in specific areas around the mines they are developing. This is in contrast to gold miners (excluding Aureus Mining), who are investing far smaller amounts to explore immense areas allotted by Mineral Exploration Agreements. The lone organization focused on diamond production, PT Bumi Resources, secured rights to concessions of nearly 360 thousand hectares, and has a market capitalization of US$1.7 billion.

Please see Table 7, Table 8, and Table 9.

While the companies in the mine development stage operate in relatively confined areas, they are performing intense mining activities, likely resulting in acute environmental effects in the areas surrounding the mine sites. Further, these firms are tasked with large-scale infrastructure development, including building roads, bridges, and railroads, which likely increase human access and segment forest landscapes on a much larger scale than implied by the reported size of the concession areas.[16, 23] In fact, average accumulated investment per hectare by these large firms is over US$3.9 thousand per hectare.

Though the bulk of gold mining firms are not yet involved in large scale mine development, they have access to well over 2.2 million hectares of land. Exploration-stage miners must undertake large amounts of drilling in order to locate and value mineral assets underground.[31-33] Doing so is less environmentally invasive than creating a large surface mine, for example, but still requires building roads for access and the clearing of trees for worker camps and drilling sites, contributing to forest fragmentation. As demonstrated by average accumulated investment per hectare of only US$129 dollars, gold mining firms are investing less intensely than the iron producers, but may access a much larger area.

The capital structures of mining firms operating in Liberia show distinct trends. Market capitalization ranges from the mega-cap level like BHP Billiton at US$201 billion, to micro-cap companies like Hummingbird Resources worth US$61 million. Here, the smaller companies are involved in mineral exploration activities, primarily gold, while the large firms are engaged in iron production activities at established sites. Because of limited to non-existent cash flows, exploration stage firms raise capital primarily through the issuance of equity shares. By contrast, the larger companies engaged in mineral development are characterized by more predictable, diversified revenue streams. They are thus able to raise capital through the issuance of debt. For this sample, the debt to equity ratio is zero percent for firms with capitalization less than US$1 billion. The ratio increases in step with market cap, with firms worth between US$1 billion and US$10 billion averaging 20 percent (excluding SVST at 84 percent) and 43 percent for firms worth more than US$10 billion.

Mining companies have entered the Liberian market in a number of different ways. The multinationals, having significant market power, were courted by the Liberian government to rehabilitate large mining sites, awarded attractive contracts and in some instances, control of domestic infrastructure assets. Such was the case with BHP Billiton[23], ArcelorMittal,[16] and China-Union Investment Company at Bong Mines.[19, 20] These firms were first movers in the market, but other large-cap firms have recently gained entrance. New entrants include AngloAmerican, Vedanta and Severstal. These companies participated in joint ventures with smaller firms who began the resource development process. Once the larger company ascertained that reserves could be developed profitably, they either purchased rights to develop the resource outright or purchased a controlling stake in their partner organization. This was the case for Severstal, who purchased the rights to the Putu Ore Mine after an initial joint venture with Afferro Mining.[34] Vedanta pursued a similar strategy through its wholly owned subsidiary Sesa Goa Limited in a venture with Elenilto Minerals.[34, 36] Chinese investment at Bong Mines initially took the form of a 2009 concession negotiated between China Union Investment Company and the Liberian Government. China Union Investment then sold an 85 percent stake to the China-Africa Development Fund. In 2010, China-Africa Development Fund sold a 60 percent position to Wuhan Iron and Steel.[37] Anglo American gained access through a joint venture between its wholly owned subsidiary Kumba Iron Ore, and Liberia Tailing Incorporated, majority owned by Jonah Capital, a South African based private equity fund holding attractive iron ore concessions in Liberia.[26, 38]

Micro and small cap mining companies involved in exploration have tended to purchase exploration licenses outright, or to take controlling stakes in local organizations with access to attractive parcels. A good example is Hummingbird Resources, which holds controlling interests in three Liberian subsidiary organizations, allowing it access to 717 thousand hectares of territory.[31]

4.13 Sovereign Wealth Funds

Sovereign activity in the Liberian mining sector was driven by Chinese investment, namely the China-Africa Development Fund and China Union Investment Company.[21,22,39] As noted earlier, an initial investment by China Union Investment allowed the China-Africa Development Fund, and finally, Wuhan Iron and Steel to take a controlling stake in the development of the Bong Mines. Currently, China-Africa Development fund holds a 25 percent stake in the Bong Mine complex, China Union likely holds 15 percent, and Wuhan Iron and Steel with the remaining 60 percent. The China-Africa Development Fund reports total assets under management of around US$5 billion.[40, 41] Information on portfolio size or composition was not readily available for China Union Investment or the China-Africa Development Fund.

Please see Table 6.

4.14 Private Equity Funds

Though several private equity firms are active in the Liberian mining sector, information was not readily available. The African Lion fund is an Australian based fund with assets under management of US$147 million,[42] focused on equity and debt financing of resource projects in Africa. It holds a position in Hummingbird Resources, developing the Dugbe Gold Mine in eastern Liberia.[42, 43] Jonah Capital is a South African based fund which entered into a joint venture with Kumba Iron Ore, a subsidiary of AngloAmerican, in order to explore for iron in Liberia.[26] The parties are expected to invest US$10.5 million for exploration over 3 years.[26, 38] The West Africa Venture fund is managed by Unique Venture Capital based in Nigeria.[44] Unique Venture Capital was formed by five Nigerian banks and reports commitments of US$6 billion, as well as cooperation with the IFC.[44] West Africa Venture manages total funds of US$40 million for SME investment in Liberia and Sierra Leone.[44]

4.15 Multilateral Development Banks

Of the multilateral organizations evaluated, only the World Bank Group has devoted funds to mining activities in Liberia. The International Bank for Reconstruction and Development (IBRD) has devoted US$1.65 million to capacity building initiatives related to mining, as well as to the Extractive Industries Transparency Initiative.[45] The International Finance Corporation (IFC) assisted in financing Hummingbird Resources, purchasing 5.7 percent of the company's issued capital for around US$8.7 million, finalized in December of 2012.[45, 46]

Please see Table 5.

4.2 Forest Products

4.21 Introduction

Timber concessions in Liberia are divided into three categories under Liberia's National Forestry Strategy.[47] A Forest Management Contract (FMC) is a 25 year concession allowing access to up to 400 thousand hectares for commercial timber harvests.[47] The Timber Sales Contract (TSC) is valid for less than three years and reserved for areas smaller than five thousand hectares.[47] The third category is that of the Private Use Permit (PUP), which is allocated to communities or local groups to harvest timber.[48] From 2008 to 2009, FMCs and TSCs were allocated through a competitive auction according to a number of prequalification standards,[48, 49] and as of July 2012, there were nine FMCs and 11 TSCs outstanding, comprising 1.05 million hectares of forest.[50] This figure does not include 51 outstanding PUPs which according to the Liberian EITI, account for an additional 1.03 million hectares.[50] The Global Witness estimates that 66 PUPs are outstanding, accounting for 2.6 million hectares.[48]

As well documented by the Global Witness, there were a number of problems with the auctions, including concessions being awarded despite improperly documented applications, inadequate access to financing, and collusion among organizations.[51,52] Additionally, firms gained access to vast swathes of additional forest lands by purchasing PUPs originally intended for the benefit of local peoples.[48] As a result, President Johnson Sirleaf declared a moratorium on Private Use Permits in February of 2012 until an investigation could be completed.[48] In January of 2013, the President recommended a number of measures be taken to address PUP abuse including: the continuation of the moratorium on PUPs, the suspension of all logging companies engaged in PUP activities, appropriate administrative actions against government employees, and dissolution and reconstitution of the Forestry Development Authority (FDA) Board, among others.[53, 54]

4.22 Transnational Corporations

Information on forest product organizations operating in Liberia is sparse. Data on concession area was obtained for only 15 firms. None of the identified companies are publicly traded and none maintain a website. Concession area data and investment amounts were gathered from figures reported by the Liberian EITI and a handful of news articles. Though information was scarce, several key points still emerge.

Prior to the timber moratorium, forest product companies operating in Liberia gained access to at least 1.1 million hectares in concession area. Around 85 percent of this area is controlled by five firms: 1) International Consultant Capital (267 thousand hectares), 2) Euro Liberia Logging Company (254 thousand hectares), 3) Geblo Logging (131 thousand hectares), 4) Atlantic Resources Limited (119 thousand hectares), and 5) Alpha Logging and Wood Processing Incorporated (119 thousand hectares).

Please see Table 10.

Based on minimum future investment numbers provided by the Liberian EITI, the forest industry is expected to invest at least US$81 million over the term of the concession agreements.[50] These investment figures are concentrated between four firms: 1) International Consultant Capital (US$23 million), 2) Atlantic Resources Limited (US$22.2 million), 3) Alpha Logging and Wood Processing (US$24.5 million), and 4) Liberia Tree and Trading Company (US$12 million).

Several of the organizations that bid for FMCs were supported financially by foreign organizations. Atlantic Resources Limited, Alpha Logging, and Southeast Resources all demonstrate a connection to the Malaysian timber company, Samling.[55] This means that under the terms of the auctioned FMCs, Samling-linked companies have access to at least 238 thousand hectares of forest and are expected to invest US$46.7 million dollars over the term of the contracts.

4.23 Sovereign Wealth Funds

The analysis revealed no publicly available data for sovereign fund activity in the Liberian forest products sector.

4.24 Private Equity Funds

As noted in several reports, many of the timber companies that participated in the competitive bidding process for FMCs received financial support from foreign entities in order to meet capitalization standards.[49, 55] In some cases, financing was provided by private equity institutions. Mandra Capital, a Hong Kong-based fund focusing on growth opportunities in agriculture, forestry, mining, clean energy, technology, materials, and internet has been associated with the Liberia Tree and Trading Company Incorporated (LTTC), winner of an FMC in Rivercess County.[50, 56, 57] The Liberian Observer reported that Mandra provided US$12 million in financing for the Liberian-based LTTC.[58] Mandra Capital does not provide information on total assets under management or portfolio composition. In contrast to LTTC's recorded concession area of around 60 thousand hectares,[50] Mandra notes on its website that it has access to over 400 thousand hectares of forest land in Liberia.[59] International Consultant Capital, a subsidiary of Liberia Wood Industry, reportedly received financing from Frontier Investments SA, domiciled in Luxembourg.[60]

4.25 Multilateral Development Banks

The World Bank has devoted almost US$19 million to investment in Liberian forest products since 2006 through the IBRD. Projects focus primarily on capacity building in forest management and establishing protected forest areas. The most significant project however, was initiated in 2012 with a commitment of US$15 million to revitalize small-holder tree planting.

Please see Table 5.

4.3 Oil & Gas

4.31 Introduction
Exploration and development of hydrocarbon resources in Liberia is executed under a Petroleum Agreement.[61] A Hydrocarbon Exploration Permit confers upon the holder the right to conduct operations for the reconnaissance and exploration of hydrocarbons for three years, with an optional two year extension.[61] Once the resource has been located and valued, a Production Sharing Contract is issued, which grants the contracting party a share of production.[61] Most oil and gas exploration in Liberia is taking place in concessions located offshore.

4.32 Transnational Corporations
As of 2010, only one concession had been issued for onshore exploration.[50] In 2009, Simba Energy (SMB) purchased 90 percent of the Liberian domiciled company International Resource Strategies, whose only asset was a Hydrocarbon Reconnaissance License, valid for a period of two years.[25] The license has since expired and SMB is currently awaiting the approval process for a Production Sharing Contract with the National Oil Company of Liberia.[25] The original license granted SMB access to around 137,000 hectares. Simba Energy is valued at US$20 million in market capitalization, and holds no debt on its balance sheet. It has invested at least US$2.1 million over the term of the Reconnaissance License,[25] which equates to about US$15 spent per hectare.

Please see Table 14.

Though only one concession has been granted, previous surveys of the onshore oil and gas prospects in Liberia have been positive.[27] Given the demand for offshore concessions, and the appetite of the government for tax and fee revenue, any positive discoveries could lead to demand for more onshore exploration.

4.33 Sovereign Wealth Fund
The analysis revealed no publicly available data for sovereign fund activity in the Liberian oil and gas sector.

4.34 Private Equity Fund
The analysis revealed no publicly available data for private equity fund activity in the Liberian oil and gas sector.

4.35 Multilateral Development Bank
The analysis revealed no publicly available data for MDB activity in the Liberian oil and gas sector.

5.0 Agriculture

5.01 Introduction
Agribusiness in Liberia is concentrated in oil palm, rubber, and rice production. Given the time frames associated with growing *Heveas* and oil palm, concessions are long term in nature, averaging 60 years in duration for palm oil producers and 46 years for rubber producers. The majority of concessions were negotiated directly with the Liberian government. However, plantations have also negotiated separate deals with local communities in order to access additional areas.[33] Furthermore, rubber and palm oil

companies source a significant amount of their production from local, private farmers.[62, 63] Rice production in Liberia is limited, though it is a staple food.[64]

5.02 Transnational Corporations

Information on concession area was obtained for 10 agribusiness firms operating in Liberia, amounting to just over one million hectares of land. Six of these companies are publicly traded. Producers of palm oil have access to over 622 thousand hectares and an average market capitalization of US$8.2 billion. Owners of rubber plantations control around 373 hectares, with a market capitalization averaging US$6.9 billion.

Please see Table 11, Table 12, and Table 13.

Rubber companies are relatively more leveraged than palm oil producers with an average debt to equity ratio of 26 percent. Palm oil producers exhibit an average debt level of 14 percent of total equity, but excluding Equatorial Palm Oil which holds no debt, the average rises to 21 percent. For firms with capitalizations less than $1 billion, debt to equity averages 10 percent. Capitalization between US$1 billion and US$10 billion averages 13 percent and for firms with capitalization greater than US$10 billion, debt to equity averages 38 percent. Though a trend is evident, the ownership characteristics of several firms coupled with a small sample size may limit the usefulness of this data.

With regards to rubber, Société Financière de Caoutchoucs (SOCFINAF) and Société Internationale de Plantations d'Heveas (SIPH) are both subsidiaries of diversified, multinational firms. SOCFINAF is 62 percent owned by the SOCFIN Group, which in turn is majority owned by the Bolloré Group of France, a global organization with a diversified portfolio of operations and a market capitalization of US$9.2 billion.[65, 66] SIPH is based in France, but 56 percent of it is held by SIFCA, an agribusiness group based in Ivory Coast, and 20 percent by Michelin.[67] SIFCA is involved in the production of oil seeds, rubber, and sugar in West Africa and in turn, is 27 percent owned by the Nauvu Joint Venture Company, whose shares are split equally between Singaporean agribusiness giants Olam and Wilmar.[68] These complex chains of ownership mean that smaller, riskier companies which would not normally have easy access to debt capital are rendered viable credit risks through the support of large, liquid owners or partners. Similarly, Equatorial Palm Oil (PAL), a UK-based company operating only in Liberia, recently entered a $60 million joint venture with Biopalm Energy, a subsidiary of the Siva Group of India, in order to gain access to a US$30 million bank guarantee facility.[33] The joint venture is also in negotiations with major development banks to secure a debt financing in the range of US$100 million.[69] Until recently, PAL had relied upon regular equity issuance to raise capital.

Rubber producers in Liberia operate in multiple countries and maintain diversified supply chains. Bridgestone for example, owner of Firestone Natural Rubber, is vertically integrated, and generates the 83 percent of its revenues from the sale of tires.[70] Aside from its Harbel plantation in Liberia, it owns plantations in Thailand and Indonesia, which are its main sources of natural rubber.[70, 71] Another example is SIPH. SIPH owns the Cavalla Rubber Plantation in Liberia, along with plantations in Ivory Coast, Ghana, and Nigeria, generating between 60 and 65 thousand metric tons of latex per year.[63] An additional 60 to 70 thousand tons are purchased from local farmers.[63] Fifty percent of its internally produced latex is sourced from plantations in Ivory Coast.[63] Liberian latex makes up only six percent of total internal production and just two percent of external purchases.[63]

Similar to the rubber companies, the palm oil producers also maintain diversified supply chains. The bulk of Sime Darby's oil palm operations are located in Malaysia and Indonesia, with a planted area in 2011 of 436 thousand hectares, producing nearly three million tons of palm oil.[72] Planted area in Liberia is around 7.8 thousand hectares, though the landbank of 220 thousand hectares is significant.[72] Golden Agri Resources manages a planted area of 456 thousand hectares of palm in Indonesia, generating 2.6 million tons of oil.[73]

Though palm oil and rubber producers possess the third largest amount of land under concession, and over the longest time frames, the vast majority of these tracts of land are not yet planted in palm or rubber. For example, Equatorial Palm Oil possesses concessions totaling 182 thousand hectares, yet has only planted 3,200, about two percent.[74] As of January 2012, Sime Darby had only planted 1,190 hectares of its 220 thousand hectare concession.[75] SIPH communicates in its 2012 annual report that about five thousand hectares of its 35 thousand hectare concession at Cavalla Rubber Company are currently planted in rubber.[76]

Buchanan Renewables is a private firm involved in the development of biofuels in Liberia.[77] In collaboration with rubber plantations and local farmers, the company removes and processes unproductive rubber trees into biomass, which it then exports to Europe.[77, 78] The company has received support from both private equity fund Pamoja Capital[78, 79], as well as the Multilateral Investment Guarantee Agency (MIGA).[45]

5.03 Sovereign Wealth Funds
The Libya Investment Authority partnered with the Foundation for African Development Authority in a US$30 million deal to develop rice farming in Lofa County.[80-82] However the civil conflict in Libya during 2011 led to President Johnson Sirleaf breaking diplomatic ties between Libya and Liberia, though the relationship was re-established in 2012.[83] Due to uncertainty of financing, it is likely that the project is no longer viable, which is consistent with reports in local Liberian periodicals.[80-82] As of 2011, the Libya Investment Authority managed over US$60 billion dollars, 0.9 percent of which was allocated to investment in Africa and the Middle East.[40]

Please see Table 6.

5.04 Private Equity Funds
Praetorian Resources is a UK-based investment holding company targeting opportunities in natural resources and commodities.[84] In 2012, Praetorian purchased a 7.75 percent equity stake in Equatorial Palm Oil.[85] According to Equatorial Palm Oil's website, this would make Praetorian Resources the second largest single shareholder in the company.[86] Praetorian Resources trades on the London Stock Exchange and reports assets of US$37 million.[84]

Verdant Fund LP is the private equity vehicle through which Golden Agri resources has invested in its Liberian palm oil subsidiary, Golden Veroleum.[87] Golden Agri is reported as the lead investor in Verdant Fund, with initial funding estimated at US$1.2 billion.[87, 88]

Buchanan Renewables leveraged funds for a biofuels project from a number of foreign investors, including Swiss-based Pamoja Capital.[78] Pamoja Capital is reported to have invested US$100 million in Buchanan Renewables.[78, 79] Pamoja does not report total assets under management or portfolio allocation on its website.

5.05 Multilateral Development Banks
The World Bank and African Development Bank (AFDB) have committed a total of US$236 million to agricultural projects in Liberia. The AFDB has committed over US$80 million dollars to two projects focusing on improving agricultural infrastructure and capacity.[89] In 2008, the IFC agreed to provide US$10 million to the Salala Rubber Corporation, owned by Société Financière de Caoutchoucs.[45] Finally,

MIGA entered an agreement with Buchanan Renewables in 2011 to insure its operations up to US$142 million, in conjunction with Vattenfall AB, a Swedish energy company.[45]

Please see Table 5.

6.0 Infrastructure

6.01 Introduction

In a report published in 2010, the World Bank estimated that in order to reach parity with its African peers in terms of communications, irrigation, power, transport, and sanitation, Liberia would need to invest between US$345 to 645 million dollars annually through 2015, 80 percent of which would comprise capital expenditure.[17] Liberia spent around US$90 million dollars per year between 2004 and 2008 on infrastructure.[17] Overseas development assistance was the largest source of funding, accounting for an average of US$44 million per year from 2006 to 2008, the bulk of which was allocated to the transport sector. [17] Liberian demand for power from the mining, forestry and agricultural sectors by 2040 is estimated at 1,003 MW, 83 percent of will be attributable to gold and iron mining.[17]

6.02 Transnational Corporations

As noted earlier, much of the infrastructure development in Liberia is being undertaken by the private holders of concession agreements, who as part of the contract, are required to rehabilitate certain assets.[16-18, 20, 21] For example, as part of its concession agreement, ArcelorMittal agreed to invest around US$800 million to rebuild 240 kilometers of railroad and to rehabilitate facilities at the Port of Buchanan.[16, 90] Similarly, China-Union Investment Company's US$2.8 billion investment will be used to rehabilitate the Bong Mine railroad to the Freeport at Monrovia, re-pave roads, rehabilitate port facilities, and construct a hydro-electric plant.[20, 21, 39] BHP Billiton was granted the right to construct and rehabilitate infrastructure as required to carry out its business, including facilities for power generation, provided that any spare capacity be available to third party users.[91] Sesa Goa Limited, developing the Western Cluster deposits, is also required to rehabilitate infrastructure at the Freeport of Monrovia, along with rebuilding the connecting railway.[92] Firestone Liberia has undertaken road rehabilitation near its plantations, contracting China Henan Investment Company (CHICO) to complete the construction.[93]

Increasing power capacity is a high priority for Liberia and negotiations are underway to reconstruct the Mount Coffee hydropower station in Montserrrado County. Generation capacity of the plant is likely to be between 60 to 80 MW.[94] The Government of Liberia is currently seeking funding for the project, which is slated to commence in May of 2013.[94] Completion of the project is expected to require an investment of US$230 million dollars over three years.[94, 95] As of September 2012, the European Investment bank had contributed US$64 million.[95]

China Henan Investment Company is a state-backed Chinese firm that has been active in reconstructing Liberian infrastructure in and around Monrovia. It was originally contracted by the World Bank in 2009 to repair the Monrovia-Buchanan highway,[96, 97] connecting the capital city to port facilities. Since the initial contract, CHICO has been responsible for repairing most of the roads within Monrovia, along with several other major transportation-related infrastructure projects as contracted by Liberian municipal authorities and private concession holders, including Firestone Liberia.[93, 98, 99] In 2009, the company announced that it plans to expand its road-building operations from the coast to the interior of the country.[96]

6.03 Sovereign Wealth Fund

The analysis revealed no publicly available data for sovereign wealth fund activity in Liberian infrastructure.

6.04 Private Equity Fund

The analysis revealed no publicly available data for private equity fund activity in Liberian infrastructure.

6.05 Multilateral Development Bank

The World Bank has been active in Liberian infrastructure through the IBRD, committing over US$353 million to the sector.[45] These funds are primarily directed at transportation-related projects, totaling US$285 million, followed by energy at US$33 million and sanitation at US$22 million. The AFDB has committed a total of US$158 million to Liberian infrastructure. Around US$85 million has been allocated to projects classified as labor based public works, followed by US$43 million to sanitation and US$28 million to agricultural infrastructure.

Please see Table 5

7.0 Summary

Concession area in Liberia was dominated by transnational corporations. Private corporations control over 5.02 million hectares of land in Liberia, 98 percent of the 5.10 million hectare concession area identified in the analysis. On aggregate, mining accounted for 56 percent of total identified area, forest products for 21 percent, and agriculture for around 19 percent. In terms of resources, gold miners were allocated over 43 percent of total identified concessions, timber companies about 21 percent, and palm oil producers 12 percent. Iron miners control only five percent of the identified concession area.

The average market capitalization of transnational corporations doing business in Liberia is US$16 billion, which may be categorized as large-cap. In terms of sector, mining companies averaged the largest with capitalization of US$21 billion, followed by agricultural firms at US$7.5 billion, and the energy firm at US$20 million. In terms of resource, capitalization of iron miners averaged US$42 billion, oil palm at US$8.2 billion, and rubber producers at US$6.9 billion. Average market capitalization of gold miners averaged only US$60 million.

The investment environment is again dominated by transnational corporations, though multi-lateral organizations have also heavily invested in rehabilitating Liberia. Transnational corporations have budgeted at least US$19 billion to future investment in Liberia, and have invested at least US$1.3 billion in Liberian operations and capital assets. Multi-lateral development agencies have committed at least US$697 million to Liberian projects in the form of grants, loans, and risk guarantees. In terms of sector, mining accounted for 69 percent of total budgeted Liberian investment, followed by agriculture at 30 percent, and forest products at 1 percent. Investment in specific resources was led by iron with 65 percent of total budgeted Liberian investment, palm oil with 30 percent, and gold with 4 percent.

The use of debt financing by transnational corporations varied by sector. Mining companies were most leveraged, with an average debt to equity ratio of 28 percent. Agricultural firms follow with a ratio of 20 percent. Companies in the energy, forest products, and infrastructure sectors either carried no debt in the capital structure, or as a state owned enterprise, did not disclose it. In terms of specific resources, iron ore producers were the most leveraged, with an average debt to equity ratio of 54 percent (32 percent if Severstal and Wuhan Iron and Steel are excluded), followed by rubber producers at 26 percent, and oil palm companies at 14 percent. PT Bumi Resources, the lone diamond-focused miner, has a debt to equity ratio of 19 percent.

Of 19 publicly traded firms, 12 provided a readily available corporate, social, or environmental policy statement. There were 12 publicly traded mining companies, five of which provided a CSR or environmental policy statement. All six publicly traded agricultural firms disclosed a CSR or environmental policy in an annual report or on their website.

8.0 Conclusions

The goal of this paper was to characterize regional capital flows into Liberian agribusiness, infrastructure and extractive industries. Understanding these investment flows better describes the connection between large-scale land acquisition and local tenure. It is essential that policy makers are aware of the key actors and resources involved in land acquisitions so that they may most effectively influence the drivers of inappropriate land acquisitions. The discussion below describes a set of sectors and organizations in Liberia that are particularly vulnerable to tenure risks, and influential in land and forest policy.

The Munden Project notes that the risks of insecure tenure should ultimately be revealed in an organization's cost of financing.[100] As interest rates increase to reflect risk, so does an organization's fixed cost structure. In practical terms, entities with higher levels of debt in the capital structure are more sensitive to marginal changes in interest rates. Therefore, the firms that are most sensitive to tenure risks are likely those organizations that utilize significant amounts of debt financing. In Liberia, the sectors exhibiting the highest levels of debt to equity are mining and agriculture—specifically iron mining at 32 percent, rubber at 26 percent, and oil palm at 14 percent.

Of the iron miners Arcelor Mittal, BHP Billiton, SesaGoa Limited, and Kumba Iron ore exhibit debt levels at 43 percent, 42 percent, 28 percent, and 16 percent of equity, respectively. The rubber companies Bridgestone Group, Société Financière de Caoutchoucs, and Société Internationale de Plantations d'Heveas maintain debt levels of 48 percent, 19 percent, and 11 percent of equity, respectively. Palm oil producers Sime Darby and Golden Agri Resources report debt to equity levels of 28 and 13 percent respectively. All of these companies provide some form of a corporate social responsibility statement. They operate in multiple countries and their actions are well-publicized. Furthermore, Société Financière de Caoutchoucs received a loan of US$10 million from the IFC for its operations at the Salala Rubber Plantation.[45]

Two additional important companies are Hummingbird Resources and Equatorial Palm Oil. These firms hail from the UK, where the equity shares of both companies trade on the Alternative Investment Markets (AIM) exchange. Hummingbird Resources maintains no debt on its balance sheet, but recently raised $8.7 million in an equity sale to the IFC.[46] Equatorial Palm Oil recently entered a joint venture with Siva Group, an Indian conglomerate, to gain access to a US$30 million bank guarantee facility.[33] Equity analysts report that PAL is negotiating for debt financing with multilateral development banks.[101] Hummingbird and Equatorial Palm operate only in Liberia, have made sizeable investments in their Liberian operations, and have access to concessions totaling 882 thousand hectares.

Though investment in major infrastructure assets has been undertaken by transnational corporations, the multilateral development banks examined in the earlier analysis have committed the bulk of their dedicated Liberian funds to improving infrastructure, around US$431 million. Also, the World Bank contracted China Henan Investment Company, a Chinese state-backed enterprise, to repair the Monrovia-Buchanan Highway in 2009.[96] Further analysis must be undertaken to discover the recipients of MDB contracts in infrastructure and other relevant sectors as additional policy levers.

There currently appears to be little opportunity to influence investment in gold mining based upon the above strategy. Gold mining operations in Liberia are, for the most part, not generating positive cash-flows since the resource development process is still in the exploration phase.[31, 32, 74] As a result, companies carry no debt on their balance sheets and are instead financed through the issuance of equity shares. Most of the firms are capitalized at less than US$60 million. However, all of the gold miners that were identified hail from a developed, regulated, Western market, where many are publicly traded. Even if companies do not explicitly set forth environmental or social policy statements on their websites or in their annual reports, they are encouraged to abide by best-practices guidelines promulgated by various domestic and international industry associations. Good examples are Prospectors and Developers Association of Canada,[102] the Association of Mining and Exploration Companies in Australia,[103] and the International Council on Mining and Metals.[104] Furthermore, as the Liberian gold mining sector progresses from the exploration stage to development, capital needs will increase, implying an increase in the use of debt financing, which may be an opportunity in the future. Of the gold miners, Aureus Mining at the New Liberty site is furthest along in the resource development process.

By contrast, none of the forest products companies identified in Liberia are publicly traded. The sources of capital for timber companies bidding on FMCs and TMCs were not clear, and many Liberian firms reportedly received financial backing from foreign organizations.[51, 55] Indeed, little financial information was uncovered aside from what was reported by the Liberian EITI. Though firms are vulnerable to the risks of insecure tenure, lack of transparency means that establishing the connection between risk and the cost of financing is difficult.

One important facet of investment in extractive industry in Liberia is that the Government is the counterparty to all concession agreements. Standard and Poor's states that "counterparty risk is one of the key factors considered when analyzing and assigning ratings."[105] Here, because the Government of Liberia is counterparty to each concession deal, counterparty risk may be underestimated by organizations commencing projects in Liberia.

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Appendix I/Tables:

Table 1 – Summary of Indicators for Transnational Corporations, Sovereign Wealth Funds, Private Equity Funds, and Multi-lateral Development Banks

Row Labels	Count of Area (ha)	Sum of Area (ha)2	Sum of Est Future/Total Inv Amount	Sum of Accum Invest	Sum of Exploration/Dev Costs	Average of FutureInv/HA	Average of AccumInv/HA	Average of ExpCost/HA
Priv	41	5,020,999	$ 19,139,225,942	$ 1,296,014,027	$ 1,310,902,698	$ 11,900	$ 1,074	$ 1,178
PEF	1	60,000	$ 22,500,000		$ -	$ 200		
SWF	2	22,400	$ 590,000,000			$ 24,081		
MDB				$ 697,175,161				
Grand Total	44	5,103,399	$ 19,751,725,942	$ 1,993,189,188	$ 1,310,902,698	$ 12,322	$ 1,074	$ 1,178

Table 2 – Origin and Count of foreign extractive organizations reporting land holding data

Row Labels	Count of Country of Origin
Australia	5
China	4
Malaysia	2
Canada	2
England	2
Indonesia	2
Liberia	2
Luxembourg	2
South Africa	2
Sweden	2
UK	2
USA	2
France	1
India	1
Japan	1
Libya	1
n/a	1
Nigeria	1
Russia	1
Switzerland	1
Grand Total	37

Table 3 – Indicators by Sector

Row Labels	Count of Area (ha)	Sum of Area (ha)2	Sum of Est Future/Total Inv Amount	Sum of Accum Invest	Sum of Exploration/Dev Costs	Average of FutureInv/HA	Average of AccumInv/HA	Average of ExpCost/HA
Mining	17	2,848,481	$ 13,668,719,676	$ 1,187,280,079	$ 1,176,439,075	$ 37,384	$ 1,595	$ 1,611
Forest Products	16	1,112,266	$ 94,185,266	$ 18,750,000		$ 74		
Agriculture	10	1,006,052	$ 5,988,821,000	$ 323,291,437	$ 132,475,390	$ 5,362	$ 120	$ 433
Energy	1	136,600		$ 2,101,780	$ 1,988,233	$ -	$ 15	$ 15
Infrastructure				$ 461,765,892				
Grand Total	44	5,103,399	$ 19,751,725,942	$ 1,993,189,188	$ 1,310,902,698	$ 12,322	$ 1,074	$ 1,178

Table 4 – Indicators by Resources

Row Labels	Count of Area (ha)	Sum of Area (ha)2	Sum of Est Future/Total Inv Amount	Sum of Accum Invest	Sum of Exploration/Dev Costs	Average of FutureInv/HA	Average of AccumInv/HA	Average of ExpCost/HA
Gold	10	2,225,026	$ 747,719,676	$ 105,655,670	$ 96,464,666	$ 4,303	$ 129	$ 159
Timber	16	1,112,266	$ 94,185,266	$ 17,000,000		$ 74		
Oil Palm	4	622,957	$ 5,913,821,000	$ 24,202,000	$ 15,545,000	$ 9,515	$ 48	$ 31
Rubber	5	373,095	$ 45,000,000	$ 72,790,169	$ 116,930,390	$ 314	$ 193	$ 834
Diamonds	1	360,000	$ -	$ 11,174,409	$ 11,174,409		$ 31	$ 31
Iron	6	263,455	$ 12,921,000,000	$ 1,068,800,000	$ 1,068,800,000	$ 53,924	$ 3,962	$ 3,962
Oil&Gas	1	136,600		$ 2,101,780	$ 1,988,233	$ -	$ 15	$ 15
Rice	1	10,000	$ 30,000,000	$ 28,087,023		$ 3,000		
Biofuel			$ -	$ 142,200,000				
Conservation				$ 2,730,000				
Energy				$ 35,311,772				
Misc				$ 90,338,350				
Ports				$ 16,700,000				
Sanitation				$ 64,898,015				
Transportation				$ 311,200,000				
Grand Total	44	$ 5,103,399	$ 19,751,725,942	$ 1,993,189,188	$ 1,310,902,698	$ 12,322	$ 1,074	$ 1,178

Table 5 – Summary of Multilateral Development Banks

Row Labels	Agriculture	Forest Products	Infrastructure	Mining	Grand Total
IBRD	$ 3,000,000	$ 18,750,000	$ 353,950,000	$ 1,650,000	$ 377,350,000
AFDB	$ 81,099,268		$ 77,815,892		$ 158,915,161
MIGA	$ 142,200,000				$ 142,200,000
IFC	$ 10,000,000			$ 8,710,000	$ 18,710,000
Grand Total	$ 236,299,268	$ 18,750,000	$ 431,765,892	$ 10,360,000	$ 697,175,161

Table 6 – Summary of Sovereign Wealth Funds

Row Labels	Count of Area (ha)	Sum of Area (ha)2	Sum of Assets Under Mgmt	Sum of Est Future/Tot	Average of FutureInv/HA
China-Africa Deve	1	12,400	$ 1,000,000,000	$ 560,000,000	$ 45,161
Libya Investment /	1	10,000	$ 64,200,000,000	$ 30,000,000	$ 3,000
SwedFund			$ 2,600,000,000		
Grand Total	2	22,400	$ 67,800,000,000	$ 590,000,000	$ 24,081

Table 7 – Mining; Gold

Row Labels	Ticker	Count	Total Concession (ha)	Total Market Cap ($)	Total Book Value ($)	Total Enterprise Value ($)	Avg. Debt/ Equity	Est. Future Investment ($)	Total Accumulated Investment ($)	Total Accumulated Exploration/ Development ($)	Est. Future Investment / ha ($)	Total Accumulated Investment/ ha ($)	Accumulated Exploration Cost/ha ($)
Hummingbird Resources	HUM	1	717,000	61,163,712	47,469,000	45,660,712	0.00%	40,000,000	43,506,000	32,522,000	56	61	45
Liberty Gold & Diamond Mining		1	450,000					-	-			-	-
AmLib United Minerals		1	300,000		-	-		-	-			-	-
Sarama Resources	SWA	1	240,000	41,626,919	22,077,918	24,535,914	0.00%	1,536,000	867,426	1,894,681	6	4	8
Tawana Resources NL	TAW	1	227,600	16,030,584			0.00%	4,736,842			21		
Equator Resources Ltd.	EQU	1	153,700	6,473,684	7,527,879	4,737,971	0.00%	-	10,747,736	6,714,229		70	44
Aureus Mining	AUE	1	54,600	175,739,127	79,501,524	144,694,184	0.00%	701,446,834	41,824,508	55,333,756	12,847	766	1,013
Treco Mining Co.		1	42,000		-	-		-	-			-	-
Global Mining Inc. (GMI)		1	40,000										
GBF Investments Inc.		1	126										
Grand Total		10	2,225,026	301,034,026	156,576,321	219,628,780	0.00%	747,719,676	96,945,670	96,464,666	3,233	129	159

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
Hummingbird Resources	HUM	717,000	Govt of Liberia	Mineral Exploration License	0	0	Equity; MDB for debt	Nimba County, Maryland County, Grand Kru County, Grand Gedeh County, Sinoe County, Rivercess County,	Y
Liberty Gold and Diamond Mining		450,000	Govt of Liberia	Mineral Exploration License	0	0	0	0	0
AmLib United Minerals		300,000	Govt of Liberia	Mineral Development Agreement	2009	2034	0	Grand Gedeh County, Grand Bassa County, Sinoe County, Montserrado County	0
Sarama Resources	SWA	240,000	Govt of Liberia	Mineral Exploration License, Mineral Reconnassaince	0	0	Equity	Grand Cape Mount County, Gboparlu County, Grand Bassa County	0
Tawana Resources NL	TAW	227,600	Govt of Liberia	Mineral Exploration License;	2010	2013	0	Grand Cape Mount County, Bomi	0
Equator Resources Limited	EQU	153,700	Govt of Liberia	Mineral Exploration License	0	0	Equity	Maryland County	0
Aureus Mining	AUE	54,600	Govt of Liberia	Mineral Development	2002	2026	Equity; Exploring	Grand Cape Mount County	Y
Treco Mining Company		42,000	Govt of Liberia	0	0	0	0	Gbarpolu County	0
Global Mining Incorporated (GMI)		40,000	Govt of Liberia	0	0	0	0	Nimba County, Lofa County, Sinoe County	0
GBF Investments Incorporated		126	0	0	0	0	0	0	0

Table 8 – Mining; Iron

Row Labels		Count	Total Concession (ha)	Total Market Cap	Total Book Value	Total Enterprise Value	Average Debt/Equity	Est. Future Investment	Total Accumulated Investment	Total Accumulated Exploration/Development	Est. Future Investment/ha	Total Accumulated Investment/ha	Accumulated Exploration Cost/ha
BHP Billiton World Exploration	BHP	1	69,700	$ 201,063,060,000	$ 67,085,000,000	$ 224,612,060,000	42.23%	$ 3,000,000,000	$ 50,000,000	$ 50,000,000	$ 43,042	$ 717	$ 717
Arcelor Mittal	MT	1	61,700	$ 25,542,216,270	$ 60,477,000,000	$ 48,139,216,270	43.68%	$ 1,500,000,000	$ 828,000,000	$ 828,000,000	$ 24,311	$ 13,420	$ 13,420
Wuhan Iron and Steel Corporation	600005	1	49,600	$ 4,364,326,400	$ 5,745,600,000	$ 10,525,606,400	112.19%	$ 2,240,000,000	$ -	$ -	$ 45,161	$ -	$ -
Severstal	SVST	1	43,000	$ 9,684,027,710	$ 7,067,323,000	$ 13,796,587,710	84.56%	$ 3,000,000,000	$ 100,800,000	$ 100,800,000	$ 69,767	$ 2,344	$ 2,344
SesaGoa Limited	SESAGOA	1	27,055	$ 3,006,889,291	$ 2,377,681,827	$ 3,656,331,382	27.87%	$ 2,600,000,000	$ 90,000,000	$ 90,000,000	$ 96,101	$ 3,327	$ 3,327
Kumba Iron Ore	KUMBF			$ 6,669,834,103	$ 2,375,086,505	$ 6,490,941,369	15.50%	$ 10,500,000	$ -	$ -			
Grand Total		5	251,055	$ 250,330,353,774	$ 145,127,691,332	$ 307,220,743,132	54.34%	$ 12,361,000,000	$ 1,068,800,000	$ 1,068,800,000	$ 55,676	$ 3,962	$ 3,962

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
BHP Billiton World Exploration	BHP	69,700	Govt of Liberia	Mineral Development Agreement	2010	2035	0	Nimba County, Bong County, Grand Bassa County	Y
Arcelor Mittal	MT	61,700	Govt of Liberia	Class A License	2005	2030	0	Nimba County, Bong County, Grand Bassa County	Y
Wuhan Iron and Steel Corporation	600005	49,600	Govt of Liberia	Mineral Development Agreement	2009	2034	0	Bong County	0
Severstal	SVST	43,000	Govt of Liberia	Mineral Development Agreement - Transferred Rights to Sevestral	2010	2035	0	Grand Gedeh County	0
SesaGoa Limited	SESAGOA	27,055	Govt of Liberia	Mineral Development Agreement	2009	2034	0	Bomi County	Y
Kumba Iron Ore	KUMBF	-	Govt of Liberia	Mineral Exploration License	0	0	0	0	0

Table 9 – Mining; Diamonds

Row Labels		Count	Total Concession (ha)	Total Market Cap	Total Book Value	Total Enterprise Value	Average Debt/Equity	Est. Future Investment	Total Accumulated Investment	Total Accumulated Exploration/Development	Est. Future Investment/ha	Total Accumulated Investment/ha	Accumulated Exploration Cost/ha
PT Bumi Resources	BUMI	1	360,000	$ 1,660,399,357	$ 1,459,852,826	$ 1,919,282,486	18.65%	$ -	$ 11,174,409	$ 11,174,409		$ 31	$ 31
Grand Total		1	360,000	$ 1,660,399,357	$ 1,459,852,826	$ 1,919,282,486	18.65%	$ -	$ 11,174,409	$ 11,174,409		$ 31	$ 31

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
PT Bumi Resources	BUMI	360,000	Govt of Liberia	Mineral Exploration License	2008	2033	Equity; Debt	Margibi County	0

Table 10 – Forest Products

Row Labels	Ticker	Count	Total Concession (ha)	Total Market Cap	Total Book Value	Total Enterprise Value	Average Debt/Equity	Est. Future Investment	Total Accumulated Investment	Total Accumulated Exploration/Development	Est. Future Investment/ha	Total Accumulated Investment/ha	Accumulated Exploration Cost/ha
International Consultant Capital - (LIBERIA WOOD INDUSTRY)		1	266,910					$ 23,000,000			$ 86		
Euro Liberia Logging Company		1	253,670					$ 2,060,266			$ 8		
Geblo Logging		1	131,466					$ 5,875,000			$ 45		
Atlantic Resources Limited - (SAMLING)		1	119,344					$ 22,200,000			$ 186		
Alpha Logging and Wood Processing Incorporated - (SAMLING)		1	119,240					$ 24,500,000			$ 205		
The Liberia Tree and Trading Company Incorporated		1	59,374					$ 2,000,000			$ 34		
E.J&J Investment Corporation		1	57,262					$ 1,000,000			$ 17		
Sun Yeun Corporation		1	10,000					$ 500,000			$ 50		
Akewa Group of Companies		1	5,000					$ 250,000			$ 50		
B & V Timber Company		1	5,000					$ 50,000			$ 10		
Bargor & Bargor Enterprise Incorporated		1	5,000					$ 250,000			$ 50		
Bassa Timber and Logging Company		1	5,000					$ 250,000			$ 50		
Bopolu Development		1	5,000										
Eco Timber		1	5,000										
Tarpeh Timber		1	5,000					$ 250,000			$ 50		
Ecowood Incorporated/Texas International Incorporated													
Malavasi Logging Company													
Southeast Resources - (SAMLING)													
Universal Forestry Corporation													
Grand Total		15	1,052,266					$ 82,185,266			$ 65		

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
International Consultant Capital - (LIBERIA WOOD INDUSTRY)		266,910	Govt of Liberia	Forest Management Contract	2009	2034	0	Lofa County, Nimba County, Grand Gedeh County	0
Euro Liberia Logging Company		253,670	Govt of Liberia	Forest Management Contract	2009	2034	0	0	0
Geblo Logging		131,466	Govt of Liberia	Forest Management Contract	2009	2034	0	Sinoe County, Grand Gedeh County	0
Atlantic Resources Limited - (SAMLING)		119,344	Govt of Liberia	Forest Management Contract	2009	2034	0	Grand Kru County	0
Alpha Logging and Wood Processing Incorporated - (SAMLING)		119,240	Govt of Liberia	Forest Management Contract	2006	2033	0	Gbarpolu County, Lofa County	0
The Liberia Tree and Trading Company Incorporated		59,374	Govt of Liberia	Forest Management Contract	2008	2033	0	Rivercess	0
E.J&J Investment Corporation		57,262	Govt of Liberia	Forest Management Contract	2008	2033	0	Rivercess	0
Sun Yeun Corporation		10,000	Govt of Liberia	Timber Sales Contract	2010	2013	0	0	0
Akewa Group of Companies		5,000	Govt of Liberia	Timber Sales Contract	2010	2013	0	Grand Bassa County	0
B & V Timber Company		5,000	Govt of Liberia	Forest Management	2008	2011	0	Bomi County	0
Bargor & Bargor Enterprise Incorporated		5,000	Govt of Liberia	Timber Sales Contract	2008	2011	0	Gbarpolu County	0
Bassa Timber and Logging Company		5,000	Govt of Liberia	Timber Sales Contract	2010	2013	0	0	0
Bopolu Development		5,000	Govt of Liberia	Timber Sales Contract	0	0	0	0	0
Eco Timber		5,000	Govt of Liberia	Forest Management	0	0	0	Montserrado County	0
Tarpeh Timber		5,000	Govt of Liberia	Timber Sales Contract	2008	2011	0	Grand Bassa County	0
Ecowood Incorporated/Texas International Incorporated		-	Govt of Liberia	Forest Management Contract/Private Use	0	0	0	Montserrado County	0
Malavasi Logging Company		-	Govt of Liberia	0	0	0	0	0	0
Southeast Resources - (SAMLING)		-	0	0	0	0	0	0	0
Universal Forestry Corporation		-	Govt of Liberia	Public Use Permit	0	0	0	0	0

Table 11 – Agriculture; Biofuels

Row Labels		Count	Total Concession (ha)	Total Market Cap	Total Book Value	Total Enterprise Value	Average Debt/Equity	Est. Future Investment	Total Accumulated Investment	Total Accumulated Exploration/Development	Est. Future Investment/ha	Total Accumulated Investment/ha	Accumulated Exploration Cost/ha
Buchanan Renewables Fuel Incorpo	0				$ -	$ -		0.00%	$ -				

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
Buchanan Renewables Fuel Incorporated	0	-		0	0	0	0	0	Y

Table 12 – Agriculture; Oil Palm

Row Labels		Count	Total Concession (ha)	Total Market Cap	Total Book Value	Total Enterprise Value	Average Debt/Equity	Est. Future Investment	Total Accumulated Investment	Total Accumulated Exploration/Development	Est. Future Investment/ha	Total Accumulated Investment/ha	Accumulated Exploration Cost/ha
Golden Agri Resources	GAR	1	220,000	$ 6,932,276,220	$ 8,112,466,000	$ 7,741,041,220	13.38%	$ 1,600,000,000	$ -	$ -	$ 7,273	$ -	$ -
Sime Darby	SIME	1	220,000	$ 17,728,025,000	$ 8,110,294,118	$ 18,430,998,856	28.46%	$ 3,100,000,000	$ -		$ 14,091	$ -	$ -
Equatorial Palm Oil	PAL	2	182,957	$ 26,698,097	$ 22,738,000	$ 24,767,097	0.00%	$ 1,213,821,000	$ 24,202,000	$ 15,545,000	$ 7,182	$ 143	$ 92
Grand Total		4	622,957	$ 24,686,999,317	$ 16,245,498,118	$ 26,196,807,173	13.95%	$ 5,913,821,000	$ 24,202,000	$ 15,545,000	$ 9,515	$ 48	$ 31

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
Golden Agri Resources	GAR	220,000	Govt of Liberia	Concession Agreement	2010	2075	0	Sinoe County, Grand Kru County, Maryland County, Rivercess County, River Gee County	Y
Sime Darby	SIME	220,000	Govt of Liberia	Concession Agreement	2009	2072	0	Grand Cape Mount County	Y
Equatorial Palm Oil	PAL	182,957	Govt of Liberia	Concession Agreement	2008	2058	Equity; Joint Venture with liquid partner to secure line of credit	Sinoe County, River Cess County	Y

Table 13 – Agriculture; Rubber

Row Labels		Count	Total Concession (ha)	Total Market Cap	Total Book Value	Total Enterprise Value	Average Debt/Equity	Est. Future Investment	Total Accumulated Investment	Total Accumulated Exploration/Development	Est. Future Investment/ha	Total Accumulated Investment/ha	Accumulated Exploration Cost/ha
The Lee Group of Companies	0	1	150,000					$ 30,000,000			$ 200		
Societe Financiere de Caoutchoucs	SOCFINAF	1	129,942	$ 361,548,052	$ 702,577,648	$ 398,482,794	19.20%	$ -	$ 53,179,779	$ -		$ 303	$ -
Bridgestone Group	BRDCY	1	48,153	$ 19,864,033,000	$ 14,994,494,000	$ 25,383,586,000	47.86%	$ -	$ -	$ 107,320,000		$ -	$ 2,229
Societe Internationale de Plantations d'Heveas	SIPH	1	35,000	$ 400,196,757	$ 415,312,987	$ 343,456,498	11.10%	$ 15,000,000	$ 9,610,390	$ 9,610,390	$ 429	$ 275	$ 275
Morris American Rubber Company	0	1	10,000										
The Liberia Company (LIBCO-COCOP	0												
Grand Total		5	373,095	$ 20,625,777,809	$ 16,112,384,635	$ 26,125,525,291	26.06%	$ 45,000,000	$ 62,790,169	$ 116,930,390	$ 314	$ 193	$ 834

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
The Lee Group of Companies	0	150,000	Govt of Liberia	0	2009	2034	0	Bong County	0
Societe Financiere de Caoutchoucs	SOCFINAF	129,942	Govt of Liberia	Concession Agreement	1959	2036	Equity, IFC ($10 MM over 11 years)	Grand Bassa County	Y
Bridgestone Group	BRDCY	48,153	Govt of Liberia	Concession Agreement	2005	2041	0	Margibi County	Y
Societe Internationale de Plantations d'Heveas	SIPH	35,000	Govt of Liberia	0	0	0	0	Maryland County	Y
Morris American Rubber Company	0	10,000	Govt of Liberia	0	0	0	0	Margibi County, Bong County	0
The Liberia Company (LIBCO-COCOPA)	0	-	Govt of Liberia	0	0	0	0	0	0

Table 14 – Oil and Gas

Row Labels	Ticker	Count	Total Concession (ha)	Total Market Cap	Total Book Value ($)	Total Enterprise Value ($)	Average Debt/Equity ($)	Est. Future Investment	Total Accumulated Investment ($)	Total Accumulated Exploration/ Development ($)	Est. Future Investment/ha ($)	Total Accumulated Investment/ ha	Accumulated Exploration Cost/ ha
Simba Energy	SMB	1	136,600	19,686,869	8,966,754	14,319,664	-		2,101,780	1,988,233	-	$ 15	$ 15
Grand Total		1	136,600	19,686,869	8,966,754	14,319,664	-		2,101,780	1,988,233	-	$ 15	$ 15

Row Labels	Ticker	Concession (ha)	Counterpart	Claim of Title/Lease	Signed	Expiration	Source of Financing	Location	CSR/Env Policy
Simba Energy	SMB	136,600	Govt of Liberia	Reconnaissance License	0	0	Equity Issuance/Private Placement	Margibi County, Grand Bassa County	0
Grand Total									