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Regulating mining resource investments towards sustainable development: The case of Papua New Guinea

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ABSTRACT

This paper analyses the regulation of and actions taken to facilitate sustainable development in the mining sector, focusing specifically on the case of Papua New Guinea (PNG). Here, it is the landowner communities, not the government, that have shown their capability to induce unconventional "regulation". The actions taken by landowner communities can be seen to constitute a "decentralised regulatory society": they seem to be forcing larger mining companies to achieve "good corporate citizenship" in PNG, and to rethink the importance of a social license to operate.

1. Introduction

If a weak state is incapable of exercising some of its nominal power to regulate the mining industry, is some of that regulatory power then assumed by communities or by society, and if so, how? This paper seeks to answer this question, drawing upon the case of Papua New Guinea (PNG), a country that is heavily dependent upon the revenues of its extractive-mining industry, which is widely recognised as an under-regulated and thus unsustainable industry (Mathrani, 2003, p. 1). Ninety-seven per cent of PNG land is owned by Papua New Guinean (PNGean) tribal landowner communities. This has brought into question the government's ability to properly enforce conventional regulation, particularly for the mining companies that operate in remote landowner communities.

This paper contributes to the literature on mining in PNG by examining further the regulation of operations in the country. It does so by bringing to light new ideas about what regulation can actually mean. It reflects critically on the mining and development literature, identifying the desired outcome of sustainable development and examining the role that non-government actors must play to achieve this. The paper argues that the government is incapable of properly regulating the country's mining industry and, by extension, to achieve this vision of sustainable development. It is other actors that have and must continue to take up this mantle in a fragmented regulatory process.

The paper argues that the government's ability to regulate, specifically to reorientate the mining industry towards sustainability, is not particularly comprehensive. The government is unable to make the necessary changes to push mining into the twenty-first century, a time when sustainability is at the forefront of the development agenda, because its power is lacking as compared to the many other groups that are able to influence the performance of mines operating in PNG. Some mining companies are capable of making larger contributions to balanced development in PNG than others through self-regulation (Imbun, 2007). There has been an extraordinary shift in companies' self-management that has reorientated them towards acting as better corporate citizens that engage in sustainability practices. However, their abilities to regulate in the best interests of PNG's state-society are limited. This paper argues that it is the landowner communities that have the largest part to play in reshaping the regulatory context in PNG. They are the major "regulators" of the mining companies in PNG, and are more capable than other state and non-state actors of facilitating a shift towards sustainability outcomes. Their "regulation" forces the mining companies to reflect more earnestly on models of Corporate Social Responsibility (CSR), to explore ideas related to Creating Shared Value (CSV), and to look into ways of becoming good corporate citizens in order to attain social licenses to operate in a landowner community in PNG. As

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will be discussed, this type of regulation cannot be characterised as conventional.

Section 2 analyses the different theoretical regulatory concepts and reflects critically on the social license to operate for mining companies. Section 3 illustrates, via four thematic case studies, how PNG society has come to be characterised by "decentralised regulation", a term coined by Black (2002, p. 30), that is leading to the enforcement of models of good corporate citizenship for the mining companies by landowner communities. Section 4 discusses the consequences of decentralised regulation, arguing that this type of regulation is above and beyond typical governmental command and control (CAC) strategy and other forms of government regulation that co-opts mining companies to gain regulatory legitimacy (Hodge, 2011, pp. 7–8). Non-government, decentralised and fragmented regulation is a mainstay in PNG.

2. Can the mining industry be regulated in a fragmented, developing and resource-dependent nation such as PNG?

The view here is that the regulation of PNG's mining industry is important if sustainable and balanced development is to be achieved. This includes the need for the appropriate use of the revenues from resource extraction. These objectives are tied into the expectations of the landowner communities which then "provide" the social license to operate for the mining industry in PNG. However, these objectives are seemingly too difficult to achieve across PNG.

Following independence in 1975 the new PNG Nation-State espoused social and environmental goals, and anchored them in its constitution. However, it shifted its focus to that of maximising the state's income through foreign investments in resource extraction ventures. Environmental concerns, social responsibilities and infrastructure became secondary priorities. It was expected that the returns and profits made by the government from its resource investments would then assist with these concerns in post-mining development initiatives as Jell-Bahlsen and Jell (2012, p. 333) explain. As a result, commercial-capitalist interests have been pursued by the government and transnational mining companies, which have often led to tensions with the landowner communities about social and environmental protections.

Furthermore, following mining and revenue accumulation, it is often the case that the government fails to ensure the equitable distribution of mineral wealth and environmental protection. This is because of ineffective collaboration between different government agencies due to intense competition and the difficulty of securing consensus among differing factions within government (Filer and Macintyre, 2006). It is also the result of corruption across the bureaucracy. At the beginning of the twenty-first century, the larger mining companies that were concerned about their reputations from working in such an environment left PNG. Notably, BHP Billiton left PNG in 2001 and Rio Tinto, in 2005. However, it was in this year that the Metallurgical and Construction Corporation of China was allowed to develop the Ramu nickel mine on the back of a ten-year tax holiday from the government. Filer (2011, p. 3) argues that this was a sign to many that the government was willing to continue down a path that undermined a balance between environmental, social and economic development goals.

As a result of a global extractive industries boom, fuelled by a surge in mineral commodity prices, many investors returned to PNG. Some mining companies followed the lead of the government and were not so scrupulous. This has created a "space" of diverging interests, as well as many differing power dynamics. Government agencies, mining services and landowner communities have all come to contribute to different forms of "regulation", allowing regulation to take on a diverse cloak within PNG.

It is important to understand how a developing country that is underpinned by weak governance structures – such as PNG – is able to "regulate" its industries. The paper particularly focuses on mining. In doing so, this section sets out three different regulatory concepts, offering some real world examples of the application of each in an attempt to gauge their relevance to PNG's mining industry. Through this, the section discerns that the landowner communities of PNG are the key regulators for mining, if, indeed, the ultimate goal is sustainability.

In PNG, landowner communities have been dissatisfied with the lack of CSV and its encompassment of sustainability, which has ultimately led the mining industry and government in the country to "lose" their social license to operate. Landowner communities have carried out "regulation" that has forced the companies and government to rethink the importance of a social license to operate if the goal is to maintain a functioning mining industry. The companies, in tandem with the government, must now carefully balance and address economic, social and environmental issues in a way that will benefit people, communities and society (after International Institute for Sustainable Development, 2004). Overall, the emphasis has been on identifying organisational decision making processes capable of anticipating, responding to and managing areas of operations through creating shared value (Imbun, 2007). As will be explained, the landowner communities place the companies under constant pressure to fulfil their commitments whilst holding them responsible for the impacts that they generate. This is achieved through increased compensation and royalties, as well as the construction of infrastructure, roads, bridges, health centres and schools.

The paper emphasises that this is a possibility – that is, for non-state actors to act as regulators of sustainability – in PNG where there is weak governance and legally enshrined indigenous landowner entitlement.

2.1. What is the place of conventional government regulation?

It is often the case that regulation is considered to be the prerogative of the state. State regulation is viewed as taking the form of CAC, based on legal rules established by the state and backed by sanctions. Conventional regulation theory suggests, therefore, that there is a significant role for the state to play. In this sense, it is "centred" regulation, which assumes the state to have the capacity to CAC, to be the only commander and controller and to be effective (Black, 2002).

This, however, poses a problem because it is increasingly understood that governments are not perfect, as demonstrated by continuing national debt, recurring budget deficits and increasing pressures to reduce public spending through the cutting of social services. This is in the face of increasing demands from communities that governments achieve more social outcomes. It demonstrates the pressure that governments are under. As a result of overload, the demands for policy and services often exceed their capacities to respond, therefore progressively weakening their authority and social license to operate (Grabosky, 1995).

The Government of PNG has been an active regulator in imposing sustainability controls on the mining industry (Viner, 1984, p. 343). It has developed a set of conservation and environmental protection laws, and it requires developers to prepare Environmental Impact Statements. However, as explained by Jell-Bahlsen and Jell (2012), the general position of the government has been that the economic benefit of mining to the Nation-State outweighs the social cost and negative environmental impact of large-scale projects. This trade-off has led to conflict between the citizens and government. The government seems willing to compromise environmental protection if it means increasing resource extraction and royalty payments.

Maladministration of the government's use of resource revenues has adversely affected state-directed development initiatives (Jell-Bahlsen and Jell, 2012). Overall, the nation's mineral wealth has not been demonstrably applied to the creation of a more diversified national economy away from dependence on mining (Filer et al., 2013). There are no new major industries or any signs of growth in agricultural work. The royalties have not been used to improve the health and education of the national population or to decrease the country's dependence on foreign aid. The government has squandered resource rents, a large proportion of which are lost because of high levels of corruption. As Mathrani (2003, p. 7) explains, many instances of fund misappropriation and padding of public contracts have been publicly reported.

The government, as a CAC regulator, has been restrained and underperforming and has not built momentum towards social and economic prosperity. Its regulatory model, which is characterised by poor governance and low enforcement capacity, has meant that the country's population has not gained a great deal in more than three decades of revenue flows from exploited natural resources. This is particularly problematic, as environmental and social degradation has been the accepted trade-off (Mathrani, 2003). The experience of implementing CAC in a developing country such as PNG reveals how poor governance, high levels of corruption and an emphasis on revenue generation can lead to an under regulated industry and poor development outcomes. This form of regulation that the West has come to know is not necessarily operational in a country that is developing the concept of the state and its authority among its citizens. In such a situation, the government's authority and social license to operate is not entrenched and can easily deteriorate.

2.2. Are mining companies capable of enacting and enforcing regulation that supports sustainable development and a social license to operate?

Hodge (2011, p. 1) argues that the concept of regulation is itself heavily contested because there exists a wide variety of arguments about its definitions and how it should be executed. Legal scholars emphasise legal instruments; sociologists emphasise other forms of social control; and economists emphasise market regulation. As a result, regulation can be something that is more fluid and behavioural (Hodge, 2011, p. 8).

One important contributor to this debate is Grabosky (1995), who put forth the idea that there exist "webs of influence". The author further described regulation as consisting of "layered webs of regulatory influence where CAC constitutes just one part", emphasising that the real practice of government is to work with and through many different interest groups of civil society (p. 528). It is implied that the state becomes the mediator and enabler, controlled by diplomats rather than bureaucrats (Black, 2001). Through conferring public status to these groups, the government co-opts them, creating hybrid arrangements which help to legitimise governmental regulatory policy through a greater degree of compliance and lower implementation costs (Grabosky, 1995). This means that the government is capable of making itself desirable within a socially-constructed system of norms (Suchman, 1995).

In PNG, due to the low capacity and failures of government, it is often argued that the mining companies should take on a more significant role in communicating and working with local communities in order to gain the social license to operate that they need. Governments are often satisfied with this outcome which removes some pressure from them but allows them to extend their power through the companies (Filer et al., 2013). Bainton and Macintyre (2013, p. 144) state that during different stages in the life of a project, companies become well placed to commit to achieving sustainable and balanced development on behalf of the government. For instance, some companies begin to offset capital expenditures and taxes against infrastructure projects through the tax credit scheme in the hope to build rapport with the landowner communities that surround their mines. In 2001, the consortium operating in Kutubu set up a non-profit company, the "Community Development Initiatives Foundation", to run development projects at arms-length and to assist sustainable activities for future employment opportunities (Mathrani, 2003, p. 14). Similarly, an Ok Tedi Development Foundation was set up that took over the community and social development activities of BHP Billiton, which was operating the mine at the time. It worked on social and economic development programmes to promote equitable and sustainable development in the Western Province (Mathrani, 2003). Prior to Exxon Mobil and Oil Search, Chevron-Nuigini was situated at Lake Kutubu and worked on programmes to integrate conservation with sustainable development projects with the aim of addressing its own social impacts. An alliance was forged between these developers and the Worldwide Fund for Nature to integrate conservation and closely liaise with landowner communities. Each of these programmes has sought to establish conservation areas, to raise living standards, to provide jobs, to subsidise clinics and schools, and to stimulate information flow (Osborne, 1995, p. 235). Through their pursuit of CSR, CSV and good corporate citizenship, companies sought to "acquire" the relevant social licenses to assure smooth operations.

Two decades ago, Clairmonte (1992) argued that much of the focus of government and mining companies' activities was on supporting the development of the mines without great delay or cost. The author argued that transport infrastructure had been built to the exigencies of corporate mining. This observation still applies today, as no significant measures have been taken to extend the infrastructure into the region (Kirsch, 2007). The infrastructure does not aim to meet the secondary needs of the mine such as the provision of farm products from the surrounding rural areas. Kirsch (2007) contends that the community development initiatives are faux grassroots organisations and are set up to respond to critics and to appease the landowners whilst allowing for activities that undermine sustainable development, destabilising social relations with the landowner communities.

These companies wield substantial influence over the weak and economically dependent PNG Nation-State. It allows the companies to take hold of the government and co-opt it in its mission to achieve greater operational freedom and profitability. As a result, the mining companies pressure the government to continue to support unsustainable activities whilst allowing the companies to interpret and execute PNGean law in their own interests. Their contribution to regulation in PNG has therefore not necessarily altered the social and environmental impacts of resource extraction projects (Jell-Bahlsen and Jell, 2012).

For instance, the Porgera Gold Mine continues to be notorious for state and corporate violence and human rights abuses. It has consistently been criticised on the grounds of environmental and human rights concerns. In 1994, Porgera was the site of a major ammonium nitrate explosion and 11 subsequent fatalities. It also employed its own security force of between 400 and 500 personnel. There have been documented reports of abuse, brutal gang rapes and beatings (Jell-Bahlsen and Jell, 2012, p. 327). This has had a significant impact on the community and has strained its relationships with the mining company personnel and the government.

The positive contribution made by the mining companies as co-opted elements of the government's regulatory regime are limited. They instead can over-influence its decisions and undermine the appropriate regulation of the mining industry (Grant, 1987, p. 243). Both actors, therefore, struggle to maintain their legitimacy as regulators and social licenses to operate an unaccepted mining industry.

2.3. Is regulation a prerogative of the landowner communities in a decentralised and fragmented state?

Although the Government of PNG must realise that the state does not operate as the sole source of "regulatory control", there is still an emphasis here that the state is central to any multi-level regulatory system (Hodge, 2011). This form of regulation does not fully comprehend the potential for a "decentralised regulatory system" (Hodge, 2011, p. 13). Black (2002) views regulation as all mechanisms of social control and influence affecting all aspects of behaviour originating from any source, including unintentional ones. In other words, the author takes the view that regulation is "decentred" from the state and well-recognised structures like companies (p. 1). This framework describes a "regulatory society" in which regulation is completely diffused, particularly where the state is weak. Black (2001) promulgates the idea that individual social actors and their systems are ungovernable because they will continue to develop, act and self-regulate in their own ways whilst deferring from consistency and are unable to be co-opted into a single system.

For instance, in PNG there is often the myth that communities are remote, backward and unable to contribute to the Nation-State in productive and modern ways. This includes being relied upon as considerable actors in development pursuits. Instead, a presumed desire for their economic development has been created. This is accomplished through the transnational corporations propped up by the state, justifying the appropriation of indigenous resources. As Jell-Bahlsen and Jell (2012) explain, this has undermined landowner communities' ability to represent themselves as the owners of 97% of the country's territory, as well as their capabilities to direct action on development. This is often the case in developing countries with a booming resources industry, led by governments which prioritise economic interests without consideration of the environment and social concerns. As a result, the landowner communities' preferred outcomes are not fully considered, and they can become easily disenfranchised.

Nearly three decades ago, Denoon (1985) drew attention to the ceremonial nature of the social values of PNGean landowner communities, pointing out that they are often confronted by the bland exchange of impersonal commodities in a capitalist system. Their values are deeply entrenched, making it difficult for them to accept an easy transition to and legitimisation of the values of a capitalist commodity system. Filer (1990) also reported that many people were dissatisfied with the new forms of development emphasised by large-scale mining projects in the 1990s. Specifically, they did not appreciate the social change and disintegration pooled upon their delicate and complex communities by corporate capitalism. Today, Gilberthorpe (2013) reports much of the same, due to landowner communities' deep-seated characteristics of biological connectivity, broad genealogical lineages, mythological attachment, defined descent and ethnic boundaries, and culture of connectivity to place, resources and features of the landscape that clash with corporate capitalism.

To these landowner communities, the mining companies are foreign and the state is an introduced concept that is progressively losing its legitimacy (Filer, 2011, p. 11). They have been disappointed with the outcomes of the government's use of revenues, a dissatisfaction which grows as the impact of mining has become increasingly apparent to them (Filer, 2011). They do not accept the legal fiction that mineral resources belong to the state. At different stages of the mines and at different mining sites, therefore, this has led to a complete breakdown of the social license to operate for many mining companies. The landowner communities instead maintain that they represent the "real life" and people of PNG with their greater connection to ideas of culture, social development and environmental connectivity.

This has led many to confront and force the release of major concessions from the mining companies in their favour (Jell-Bahlsen and Jell, 2012). Their ability to act this way to achieve certain changes fits well with a decentred view of regulation. These types of actors have broad fragmented powers to regulate where mining is carried out on land that is far from the political centres, and where the government and companies have been unable to present their legitimacy. They do so in order to force the companies to develop CSR and CSV that is focused on sustainable development. These considerations must be followed for the companies to gain – or regain – their social license to operate.

3. Why landowners are the major regulatory actors in PNG

3.1. Social issues

Social issues have been a key source of grievance for communities affected by mining in PNG. For instance, the landowner communities at the Panguna mine in Bougainville were among the first to demand and receive compensation for their suffering over socio-ecological losses. Tension arose at Panguna because of environmental damage caused by the mining operation. The mine was seen as causing economic loss to the communities because of its destruction to subsistence resources. This was linked to a number of social, physical and mental health issues (Osborne, 1995; Clairmonte, 1992, p. 582).

In 1988, the landowners began a campaign of sabotage against the installations of the Panguna copper mine in Bougainville. This led the government to despatch troops to the province to suppress the militants and support the company. Protest against the mining company turned into an act of rebellion against the authority of the state. The company had lost its social license to operate. The rebels demanded removal of the security forces, Bougainvillean secession from PNG and a payment of 10 billion kina as compensation for environmental and social damage. A civil war began which led to a great loss of life, loss of livelihood and social issues (Filer, 1990, p. 1; Macintyre and Foale, 2004, p. 232).

However, this rebellion was proof that the many fragmented landowner communities that were located at and around the Panguna mine were capable of exerting power and stepping in to change the activities of the government and mining company. For instance, on 15 May 1989 Bougainville Copper Limited (BCL), which was a joint venture involving Rio Tinto, ceased its mining operations as a result of further attacks and threat of strike by fearful workers (Filer, 1990). In Los Angeles, a case was brought against Rio Tinto on behalf of the Bougainvillean people that claimed billions of dollars in damages (Macintyre and Foale, 2004). The infamous demand for 10 billion kina was a statement that said that no quantity of money could compensate the community for damage which it had suffered (Filer, 1990). The failure of BCL to develop agreements with all of the relevant leaders within the landowning communities led to a complete breakdown in relations that became irredeemable.

This closure of the mine in Bougainville proved to be the trigger for the rest of PNG to rebel against mining companies to whom public accountability had been wholly alien (Clairmonte, 1992). This story became a warning about the impact of mining, a volatile mixture of grievances of the landowner communities and the potential for blow-outs (Filer, 1990, p. 3). Following this disaster, public statements emanating from the larger mining companies, the Chamber of Mines and Petroleum and the Department of Minerals and Energy indicated that landowners were to be taken much more seriously (Filer, 1990, p. 17). A bleak warning bell caused other existing and prospective mine developers to embrace local communities as an integral part of project management (Imbun, 2007, p. 186). The larger mining companies and the

Department of Minerals and Energy began to invest in a bureaucratic process of planning for negative social impacts (Filer, 1990). This was further evidence of the power that these plural fragmented landowner communities had: they proved to have the capacity to change the course of government and company agendas, on which social issues had been neglected in favour of economic profitability. They brought about the further development of the business case for CSR and CSV.

3.2. Environmental issues

Between the closure of the Panguna mine and the start of exports from the LNG Project in 2014, the Ok Tedi Mine was the largest economic contributor to the economy of PNG. Its export earnings were 4.74 billion Kina in 2010 (approximately US$2.4 billion), representing 18% of the country's GDP (Gilberthorpe, 2013). The majority shareholder and managing partner of the Ok Tedi Mine was the Australian corporation Broken Hill Proprietary Ltd. (BHP). Its involvement with the Ok Tedi Mine, which cost US$1.4 billion to construct, initiated a period of rapid internationalisation for the corporation. During 2001, it merged with the South African mining company, Billiton (Kirsch, 2007).

In 1981, an entire mountain was carved up, moved and turned into a deep pit at the mine (Jell-Bahlsen and Jell, 2012). Environmental devastation was presented as equitable exchange for development by both the company and the government (Gilberthorpe, 2013, p. 470). The mine flushed approximately 80,000 tonnes of waste rock into the Ok Tedi River every day. Dredge and heavy metals travelled throughout the Fly River system that poisoned aquatic life en mass and destroyed rain forests (Gilberthorpe, 2013). The Ok Tedi Mine was also not subject to specific contractual and regulatory environmental performance requirements because its construction predated general environmental legislation (Mathrani, 2003). Moreover, the government was a shareholder in the project (Mathrani, 2003, p. 11), which the company pressured to allow increased production (Jell-Bahlsen and Jell, 2012). There seemed to be a lack of CSR or CSV that gave proper consideration to the landowner communities' experience of this devastation.

Due to a lack of action by the government on these environmental issues, protests by landowner communities began in the late 1980s. Kirsch (2007) contends that the campaign against the mining company leveraged protests with legal action which simultaneously affected multiple corporate pressure points including shareholder concerns, BHP's public reputation and the mining company's ability to sell copper in the global marketplace. The landowner communities also took the mining company to court in 1994 in the Victorian Supreme Court in Melbourne where BHP had been incorporated. The case represented 30,000 PNGeans (Kirsch, 2007; Dagi v Broken Hill Proprietary Company Ltd. [1996] 2 VR 567). Filer (1996, p. 1) describes this as the landowner communities' ability to ‘‘menace'' the mining companies. This represented a form of ‘‘decentralised regulatory pressure''.

At this time, an invitation from the Dene Nation in Canada's Northwest Territories requested that an affected landowner community leader travel to Yellowknife to attend public hearings about BHP's bid to operate a billion-dollar diamond mining concession (Kirsch, 2007). Following this, the dissemination of information about the environmental problems also deterred BHP's copper prospect in the Caribbean island of Dominica, and their operators of a copper smelter in Japan were requested to find an alternative source of raw material. The actions of these communities successfully challenged one of Australia's largest and most powerful corporations.

An out-of-court settlement was reached, valued at an estimated US$500 million in compensation and commitments to tailings containment (Kirsch, 2007). Nevertheless, a 1999 company waste management study found that the environmental problems downstream would continue to increase with heavy accumulation of sediment for another 60 years, other chemical impacts would last several hundred years, and more than double the already-affected 1554 square kilometres of rain-forested area would be affected in the coming decades (Kirsch, 2007). Pressure from a new legal action led BHP to withdraw from the mine. In February 2002, BHP Billiton transferred its 52% share in the mine to a trust fund called the PNG Sustainable Development Programme Ltd. The total dividends paid to the PNG Sustainable Development Programme amounted to US$1 billion dollars (Kirsch, 2007).

Kirsch (2008) argues that this disaster sparked national debate in PNG about its reliance on revenue from natural resource extraction because of its potential to undermine future generations' livelihoods. This was the second time that there had been a complete breakdown in a major mining companies' social license to operate. The actions at the Ok Tedi Mine changed the status quo through increasing the pressure on the mining industry to internalise the costs of environmental impacts. Mining companies now consider sustainable development goals more seriously through CSR and CSV models, and have revised their policies to take into account the indigenous landowners striking back. The world's largest mining companies banded together to launch the Global Mining Initiative which sponsored research and conferences on mining, communities and the environment (Kirsch, 2007, p. 314).

Kirsch (2007) contends that the discourse on sustainability has become an industry standard, as mining companies recognise that they may be legally held accountable. BHP Billiton announced that it would no longer use riverine tailings disposal in any new projects. Environmental baseline studies, feasibility studies, the design of extractive processes and waste disposal methods that minimise degradation have all increased. This approach, which emphasises minimising impact, has proved to be a factor for attracting investors. It is known that adverse publicity will otherwise effect financial investments, insurance and marketability (Macintyre and Foale, 2004, p. 235). This is leading to change across the industry with some investors interested in seeking good corporate citizenship. However, there has not yet been sweeping change towards or enforcement of ethical investor decision-making. Nevertheless, these mining companies now acknowledge that they require a social license to operate in projects across the globe, as a result of potential pressures that could arise from landowner communities' ability to undermine a company and government's plans.

3.3. Compensation

Mining companies came to see compensation packages (which are prescribed under national legislation) as a potential tool to mitigate tensions and achieve a compromise between broader economic development and social development (McGavin, 1994). Following the Bougainville crisis, the government began to use the Development Forum to assist with benefit sharing agreements amongst national stakeholders. Its first use was in the newly developing Porgera gold mine in 1990 (McGavin, 1994). The Porgera gold mine has produced approximately K16.4 billion in value and, in terms of output, is ranked in the top five mines of the world (Johnson, 2012). This Porgera Joint Venture is located in the Ipili-speaking community of the Porgera District (Imbun, 2007, p. 180). The Canadian mining giant, Placer Dome Group, was replaced by the Australian company, Barrick Gold, as the majority equity holder.

The Porgera Development Forum empowers the landowner community to negotiate with the national government (Mathrani, 2003). Memoranda of Agreements (MoA) are also used to spell out commitments to provide infrastructure, services to the landowners, respective shares in project equity and royalty payments. In return, the landowners are co-opted and required to not disrupt the project (Mathrani, 2003; McGavin, 1994). They are to ensure that the project can go ahead, use nonviolent means to settle disputes, operate law and order control committees in each village and promote the reduction of lawlessness, therefore, illustrating the complete development of a social license to operate for a mining company (Johnson, 2012). This has catalysed complex relationships between the national government, the mining corporation, the provincial government and the customary landowners, which has redistributed the regulatory power (McGavin, 1994).

Filer (1990) sees these mechanisms as flawed ways for companies and the government to take back their regulatory powers. It is not a balanced approach for achieving economic, social and environmental goals that is inclusive of the landowner communities' aspirations. Johnson (2012) points out that compensation payments are not necessarily economic benefits but are payments to offset various impacts. For instance, environmental compensation includes a one-off payment for loss. Furthermore, there are often high levels of population growth during the development of the mine which reduces the amount of compensation and royalty payments available to each family and person, spreading wages more thinly over larger families (Johnson, 2012, p. 81). Sixty-five to seventy-five per cent of the compensation money had apparently been consumed directly and not invested (Johnson, 2012). Friction also occurred with other landowner communities, which did not receive compensation due to being located further away. They became antagonistic for being excluded which led to conflict and a breakdown in relations with the company and the government.

The compensation payments then produced other inequalities as some individuals received larger sums of royalty money than others. This inequality was exacerbated by the difference in payments between men and women (Johnson, 2012), which led to the formation of a wealthy elite alongside others left without economic prosperity. Sufficient provision for future generations in project areas was also not made (Mathrani, 2003). Other civil society representatives such as church groups were excluded from the distribution. Rather, the benefits were received by relatively few people who were overwhelmingly men. Many beneficiaries came to depend entirely on these handouts. There was an accompanying rise in alcohol and drug use, gambling and polygamy. Recipients lacked an understanding of basic concepts such as banking, interest rates or investment and there were no programmes to educate or assist them in alternatives to spending their cash incomes (Mathrani, 2003). There continues to be a lack of improvements in living standards for many, and social inequality has increased significantly since the beginning of the mining project in Porgera in the 1990s (Johnson, 2012).

The compensation had been locked up in an ageing male group of titleholders, despite the fact that their cultural and leadership authority has progressively reduced within the clans and families. As a result, the deals done with one generation of landowners or leaders will most likely be repudiated by the next generation (Filer, 1990). Local social disintegration, therefore, is the outcome of these compensation packages. The degree of strife within a landowner community is proportionate to the size of the packages which are delivered by the mining companies and government agencies. This occurs as an ageing population of leaders are replaced by the disenfranchised successive generations. The attempt made to gain a social license from local landowner communities, therefore, failed. Filer (1990) argues that this illustrates that the economic steps taken to compensate local people have a negative social impact of their own. The packages function as "time bombs" which ultimately create a vicious cycle that destroys compromise. As a result, the landowner communities produce themselves, as the most significant actors that are capable of undermining any agreement at any stage when their aspirations are not incorporated through CSR and CSV to develop the relevant social license to operate for the company.

3.4. Business development

Lihir is a major global gold mining operation which is currently operated by Newcrest in the Lihir Gold Mine Joint Venture. It commenced production in 1997 with an estimated life span expected to range until 2032 and it has the world's largest underdeveloped ore body (Imbun, 2007). As in the case of Porgera, large compensation payments were made and the first two years of the project saw this money spent on consumables (Bainton and Macintyre, 2013). Social disintegration occurred, as many people scrambled to find new ways to extract more concessions from the company. Lihirian secessionist tendencies fuelled vehement opposition to the company when migrant workers increased (Bainton and Macintyre, 2013, p. 152).

The MoA, however, specified that in addition to compensation payments, there would be privileged access to spin-off businesses, training and employment (Bainton and Macintyre, 2013). Landowner companies (LANCOs) were set up and assisted by the mining company. Business contracts were granted to them by the mining company for labour, equipment hire, catering and other mine-related services. These LANCOs' shareholders are the landowner communities within a particular area, and each can include other community members. Some LANCOs make the full landowning population their shareholders inclusive of several hundreds of thousands of individuals. Others limit shareholding to clan leaders (Filer et al., 2013). Business development was yet another CSR and CSV attempt to gain a social license to operate.

By 1996, most, if not all, of these businesses had been established with almost every village having at least one building company. The construction of roads and relocation houses generated a great deal of business. Emerging feelings of becoming a city and a part of the new modern world were created by these activities (Bainton and Macintyre, 2013). By 2011, there were approximately 650 registered Lihirian-based LANCOs. Support for business development was provided through interest-free loans and the mining company's business development section provided advice and training. Most LANCOs focused on distributing the revenue shares from the resource project among the members of their clan group with many investing in various businesses or creating employment opportunities for their shareholders.

Some LANCOs then collected with several other landowning groups under umbrella LANCOs, reducing their dependence on financial support from the mining company (Filer et al., 2013, pp. 35–36). This occurred with the entrepreneurial LANCO Anitua, which represented the six clans on the Lihir group of islands and the business arm of the local-level government. It catered for the workforce at the Lihir gold mine as well as services at other mine sites and to other organisations. In early 2012, its catering subsidiary employed around 1600 Lihirans (Filer et al., 2013; Bainton and Macintyre, 2013). Filer et al. (2013, pp. 35–36) argue that a LANCO like Anitua represented a means of building diversified domestic services, providing a path for thousands to transition into formal employment and the modern cash economy. It offered the opportunity to link PNG's traditional landowners to the benefits of the country's many resource extraction projects. It seemed that landowner communities' interests were being properly tended to and a strong relationship was developing with the company.

However, as Bainton and Macintyre (2013) explain, this business development continues to produce a more dependent and client-based approach to capitalism. The authors argue that territorialised business development continues to divide people and entrench inequalities. This is because the existing forms of social and economic practices are reconfigured by the new wealthy elite and ambitious landowners who produce deep social ruptures. They also argue that most businesses are set up with an expectation for further business from the mining companies, which is, in effect, an extension of continuous rent-seeking behaviour. Local engagement with this compensation is characterised by consumption rather than enterprise and savings. As a result, it remains financially, politically and spatially tied to individual resource development projects.

Once the project's support is withdrawn, then most businesses stop. This is because businesses had been seen by landowner communities as a way to maximise income during the period that the mine was being developed. To most, they are a way of maximising access to financial benefits and not long-term sustainable sources of income (Johnson, 2012). For instance, a poultry LANCO project was set up by the mining company which then imported feed as a part of the establishment process. When the food ran out, the owner could not believe that he was expected to purchase feed regularly from the egg sales and so he ended the business (Bainton and Macintyre, 2013).

Bainton and Macintyre (2013, p. 161) contend that the landowner communities' demands require the mining companies to work with them as both households and companies, making it difficult for the mining company and government to engage them on commercial terms. Their compensation mentality and ability to regularly resort to subterfuge means that the companies and the government heed their every call. Landowners are affirmed in their treatment of the mining company as a source of income – as a pseudo government that provides infrastructure and financial institution that provides seed finance and business support (Johnson, 2012). This is the result of their trying to "acquire" a social license to operate in this very volatile environment through CSR and CSV.

Although landowner communities remain the "significant other" in a decentred regulatory society, their actions and engagement with the mining industry is, in fact, subtracting even further from the solidarity of their social and communal life (Filer, 1990). The ebb and flow of ceremonial exchange is being eclipsed as they increase their regulatory power and continue onto a path of social disintegration that is caused by quickening competition and pursuits of wealth brought about by the mining industry (Bainton and Macintyre, 2013). Their actions reinforce relations of dependency on a mine that does not naturally encapsulate goals of sustainable development, and their endeavours to reform the mining companies eventually causes more harm to themselves and their communities due to an inability to pursue a balanced approach to economic, social and environmental goals due to the fragmented and decentralised regulatory approach that occurs (Bainton and Macintyre, 2013). The landowner communities in PNG in the context of mining can be the major regulators who force the companies and government to embrace CSR and CSV for the purpose of securing social licenses to operate. However, this can often lead to their own social disintegration and undermining of sustainability goals as a result of their overly fragmented approaches and rent-seeking behaviours. This presents a very difficult situation for the companies and government which are aiming to establish a long-term mining industry that can only be accomplished through working with these fragmented landowner communities.

4. Discussion and conclusion

Following the analysis of regulatory concepts, this paper has demonstrated that a decentralised society characterised by a "triad stakeholder model" exists in PNG (Banks and Ballard, 1997). The main actors include the global transnational mining companies, the PNG Nation-State and the indigenous local landowner communities with their differing economic, social and environmental concerns (Jell-Bahlsen and Jell, 2012). It can also be argued that a quadruple stakeholder model exists which encompasses the other actors that cannot be characterised this way, including the law firms, NGOs and other non-state actors that have some influence in the arena of "regulation" in PNG.

Nearly four decades ago Turner (1986) argued that in PNG the government contended with factionalism that characterised its politics and that it was very difficult to maintain a majority in Parliament. Viner (1984, p. 342) also stated that the country's political structure was held together by party coalitions that represented diversified tribal groupings instead of by political philosophy. As a result, there had often been political bargaining that undermined the government's decision-making capacity. These observations continue to apply today (Jell-Bahlsen and Jell, 2012). This does not bode well for its capacity to be an intelligent and strategic regulator or policy maker. However, from a typical CAC position, it is for the government to decide whether the social cost and negative environmental impact of each mining project outweighs the economic benefit to the PNG Nation-State (Filer, 1990).

In reality, the government has not been coherent in its ability to presume control of and ensure the success of mining and development outcomes in PNG because it often lacks the social license to carry on in an authoritative manner (Filer, 1990; Filer and Macintyre, 2006). Although the issues raised at Bougainville, Ok Tedi, Porgera and Lihir led it to actively work to regulate long-term environmental damage and social conflict, it has not shown itself to be capable of maintaining its legitimate regulatory role in PNGean society. Filer and Macintyre (2006) contend that the government has been unable to strengthen or improve its capacity to deliver services across the nation or to regulate environmental impacts. Filer (2006) argues that its inability to translate the potential gains from its policies to the actual concerns of the ordinary citizens leads to a breakdown in its regulatory legitimacy and weakens its social license to operate.

Instead, PNGean landowner communities seem to stand out as the primary regulatory actors who pursue their own ideas of regulating the mining industry for development. They have fought and attained compensation for their losses, challenged the PNG State, built up international alliances and strategies, and continue to resist victimisation whilst developing their own agendas of resource control (Jell-Bahlsen and Jell, 2012). They have been highly resourceful in drawing on both their own cultures and their modernity to develop hybrid forms of resistance and agency to regulate the state and mining companies.

This represents their capacity to force the state and mining companies to accept models of CSR, CSV and good corporate citizenship that are in line with landowner communities' expectations of sustainability goals and social-economic and environmental protections. This is what underpins the development of a social license to operate for the mining industry. These landowner communities have consciously and strategically organised themselves to regulate the mining industry through the capture of resource rents, business opportunities, social development and environmental expectations (Turner, 1986; Jell-Bahlsen and Jell, 2012). This emphasises the social but not legal clout that the landowner communities have as regulators in each and every mining location. It requires governments and companies to work with them rather than to coordinate or co-opt them in order for the mining industry to gain its social license to operate.

As a result, it could be argued that the political, environmental and cultural manifestations of the resource curse have intensified the decentring of power in PNG and have allowed the landowners of 97% of the land to become powerful actors which have replaced the national law, policy and culture of the state (McGavin, 1994). Although this may be the case, it does not mean that the country is any better off. Landowner community responses that encompass specific social and cultural ideas have often been detrimental to general social cohesion and development outcomes (Gilberthorpe, 2013).

Their inability to achieve regulation outcomes that do not also cause their own social disintegration suggests that the existence of the mining sector continues to impede progress towards the achievement of development goals in PNG. Mining riches are increasingly viewed as a curse caused by economic distortion, a mineral-dependent export boom, a steep wage increase, impacts on agriculture and manufacturing, political and economic mismanagement, corruption, myopic policy formulations, diversification of regulatory power relationships, the weakening of the state's institutions, diminished accountability and a loss of services (Jell-Bahlsen and Jell, 2012). The World Bank's Operations Evaluation Department (OED) overall review in the 1990s concluded that development in PNG had been unsatisfactory, the institutional development impact modest and sustainability uncertain (Mathrani, 2003; Gilberthorpe, 2013).

What *is* clear though is that the activities of mining companies in PNG and other developing states have dramatically transformed over the last few decades as a result of the landowner communities' responses. The increasing pressure from different facets of the PNGean society exerted on the mining companies has led them to become more philanthropic and to claim ownership of their impacts (Imbun, 2007). They seem to be following the business case for CSR by aiming to balance and address economic, social and environmental issues in a way that appears to benefit people, communities and society (International Institute for Sustainable Development, 2004). CSR has come to be used as a type of organisational decision making process to anticipate, respond to and manage areas of operations (Imbun, 2007). In doing so, this props up the pursuits of sustainable development including in other operations around the world.

Imbun (2007) states that in PNG, mining companies now actively cultivate favourable relationships with the landowner communities. They are under constant pressure to live up to commitments whilst being responsible for the impacts that they generate. They have increased compensation and royalties, as well as the construction of infrastructure, roads, bridges, health centres and schools.

The Export Finance Insurance Corporation, which is Australia's official government-owned export credit agency, had a stake in the environmental and social catastrophes of the Bougainville, Ok Tedi, Porgera and Lihir mines. Hickie (2009) contends that as a result there has been greater awareness in Australia of the dangers of supporting projects without appropriate environmental and social impact controls. Imbun (2007) states that there is awareness that the mining companies should embrace the "good will role", and adopt more of a "human face" during their project lifespans. There is improved understanding of the value that is lost by the extractive companies when conflict develops with local communities. This has translated into a strong business driver for attention to social, environmental and economic issues (Davis and Franks, 2011). Through understanding their economic impacts, these companies are better placed to manage them and engage the stakeholders that shape the long-term viability of their business environments (Campbell, 2005). The power of the landowner communities to act as important regulators which have transformed the mining companies towards pursuits of CSR is clear. This occurs where the mining companies require the support of the landowner communities through a social license to operate.

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